

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

ADOLESCENT NUTRITION SURVEY

MELAKA



THE NATIONAL HEALTH AND MORBIDITY SURVEY 2017

ADOLESCENT NUTRITION SURVEY 2017

Contributors

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

(In alphabetical order)

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

Editorial Reviewers

Rajini a/p Sooryanarayana

Editors

Ruhaya Salleh, Tahir Aris, Muhammad Fadhli Mohd Yusoff

© 2017, Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia, Kuala Lumpur.

Perpustakaan Negara Malaysia

Cataloging-in-Publication Data

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

ISBN 978-983-2387-46-6

MOH/S/IKU/78.18(RR)

Suggested citation:

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

Disclaimer:

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

Produce and Published by:

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

Institute for Public Health

National Institutes of Health

Ministry of Health Malaysia

Jalan Bangsar

50590 Kuala Lumpur, Malaysia

Tel: +603-22979400 / 521

Fax: +603-22823114

Website: www.iku.gov.my

Any enquiries about this report should be directed to:

Principal Investigator

National Health and Morbidity Survey 2017: Adolescent Nutrition Survey 2017

Institute for Public Health

National Institutes of Health

Ministry of Health Malaysia

Jalan Bangsar

50590 Kuala Lumpur, Malaysia

Tel: +603-22979400

Fax: +603-22823114

Website: www.iku.gov.my

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

Acknowledgement

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

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

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

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 Melaka	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	17
3.3 Perception on body weight management among adolescent (Primary 4 to Secondary 5) in Melaka	21
3.3.1 Introduction.....	21
3.3.2 Objective.....	21
3.3.3 Variable definition	21
3.3.4 Findings.....	22
3.3.5 Discussion/Conclusion.....	23
3.3.6 Recommendation	24
3.4 Meal pattern among adolescents (10 to 17 years old) in Melaka	44
3.4.1 Introduction.....	44
3.4.2 Objective.....	44
3.4.3 Variable Definition.....	45
3.4.4 Findings.....	46
3.4.5 Discussions/Conclusion	46
3.4.6 Recommendation	47
3.5 Physical activity among adolescents (Primary 4 to Secondary 5) in Melaka	118
3.5.1 Introduction.....	118
3.5.2 Objectives	118
3.5.3 Variable definitions	118
3.5.4 Findings.....	119
3.5.5 Discussion	119
3.5.6 Conclusion	119
3.5.7 Recommendations.....	120
3.6. Supplements intake among adolescents (10 to 17 years old) in Melaka	127
3.6.1 Introduction.....	127
3.6.2 Objectives	127
3.6.3 Findings.....	128

3.6.4 Discussions.....	128
3.6.5 Conclusions.....	128
3.6.6 Recommendation	128
3.7 Food and nutrition labeling among adolescent (Secondary 1 to Secondary 5) in Melaka	147
3.7.1 Introduction.....	147
3.7.2 Objective.....	147
3.7.2.1 General objective	147
3.7.2.2 Specific objective:.....	147
3.7.3 Variable definitions	148
3.7.4 Findings.....	149
3.7.4.1 Prevalence of practise reading food labels when buying or receiving food/drink among adolescents in Melaka	149
3.7.4.2 Reasons for not reading food and nutrition labelling among adolescents in Melaka	149
3.7.4.3 Types of nutrition fact information (energy, carbohydrate/ sugar, fat, protein, sodium, vitamin, mineral and fiber content) that read from the food labels.....	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 Melaka.....	150
3.7.4.6 Understanding of front of pack labelling among adolescents in Melaka .	150
3.7.4.7 Understanding of the mostly and the least used ingredients based on the food ingredient list among adolescents in Melaka.....	151
3.7.5 Discussion/Conclusion.....	151
Appendices	170

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 school student in Malaysia 2017

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

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 ADOLESCENTS (PRIMARY 4 TO SECONDARY 5) IN MELAKA

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 MELAKA

Table 3.4.1 Prevalence of 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 MELAKA

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 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 and BMI-for-age status
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 MELAKA

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
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 MELAKA

Table 3.7.1	Prevalence of reading food and nutritional labelling when buying or receiving food/drink among adolescents
Table 3.7.2	Reason for not reading food label among adolescent
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) is the second nation-wide study among adolescents in Malaysia after the Malaysia School-based Nutrition Survey (MSNS) 2012. There are three main scopes in this survey which are Adolescent Nutrition Survey (ANS), Habitual Food Intake and Dietary Intake. ANS consists of six topics such as nutritional status, body weight perception, meal pattern, physical activity, vitamin/mineral, food supplement intakes and food and nutrition labelling. This survey was conducted at 311 randomly selected schools in all states including three federal territories in Malaysia. This school-based survey was a cross-sectional study involving school-going adolescents aged Primary 4 To Secondary 5 attending school in Malaysia. A multistage stratified cluster sampling design was used to recruit national representative samples from students in Standard 4 to 6 (10-12 years of age) and Form 1 to 5 (13-17 years of age). The survey was conducted using self-administered questionnaires. Total response rates for self administered questionnaire were 89.5% for ANS.

Based on the indicator height for age (HAZ), the prevalence of normal height ($HAZ \geq -2SD$) was 93.6% and stunting was 6.4%. The prevalence of stunting was higher in rural areas (6.8%) as compared to urban areas (5.2%). In terms of BMI for age (BAZ), the prevalence of thinness was 5.6%, overweight was 15.6% and obesity was 17.2%.

Among those school-going adolescents who had actual normal weight, 53.8% correctly perceived their weight to be normal. Among those who were actually thin, 74.4% correctly perceived their weight to be thin, while among those who were actually overweight and obese, 54.0% and 14.7% correctly perceived themselves to be overweight and obese respectively. Health was the main reason among those who wanted to lose and gain weight; with 56.2% preferring exercise as an option to lose weight; 55.7% wanted to increase quantity of food to gain weight.

As for meal pattern, the prevalence of breakfast intake for seven days per week among adolescents was 32.2%. More than half (59.2%) had breakfast, one to six days per week (59.2%) and some of them did not having have breakfast in a week (8.6%). Among those who had breakfast, 73.9% had it at home. More boys (33.3%) reported having breakfast daily (seven days per week), than girls (31.1%). The two main reasons of skipping breakfast were no appetite (41.9%) and no time (33.0%).

The prevalence of having lunch seven days per week among school-going adolescents was 47.7%; 49.4% had lunch up to six days per week and 2.9% did not have lunch in a week. No appetite (48.2%) and no time (17.9%) were the two main reasons for skipping lunch. As for dinner, 54.6% of school-going adolescents had dinner seven days per week, 42.3% 1-6 days per week and 3.1% did not have dinner in a week. Only 6.4% took heavy meals after dinner. There were 2.5% who had fast food daily while 13.1% did not have fast food daily. Social media (YouTube, Facebook, Instagram, etc.) and television were reported as the main sources

which affected dietary pattern in 37.9% and 36.7% of adolescents respectively. A lower percentage of 28.7% reported that their dietary patterns were not affected by any media sources.

The prevalence of physical activity among school-going adolescents in Melaka was 44.7%. Boys and younger adolescents were more active than girls and older adolescents. The most liked 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 adolescence in Melaka was 43.2% and 29.7%. There was no significant difference of vitamin/mineral and food supplement intakes between boys and girls, ethnicity, school classes and localities. In average, the vitamin/mineral and food supplements were consumed everyday by 15.5% and 9.1% of adolescents. The most commonly consumed vitamin/minerals and food supplements were Vitamin C, 30.4% and Bee Product, 16.5%. The main reason for taking vitamin / minerals and food supplements was due to parent's advised 43.4% and 25.7%.

Food and nutrition labelling use was assessed among secondary school-going adolescents; 32.3% always reading food and nutrition labelling. Another 47.8% reported as sometimes and only 19.9% never reading food label. They were more concerned about fat and carbohydrate compared to other nutrients. 52.6% of adolescents answered both correctly on nutrition facts and 29.9% of adolescents answered correctly questions regarding the front of pack labelling and more than half answered both correctly regarding the most and least ingredients based on the food ingredient list.

1.0 Introduction

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

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

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

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

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

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

References

1. Bibiloni, M. del M., Pons, A., & Tur, J. A. (2013). Prevalence of overweight and obesity in adolescents: A systematic review. *ISRN Obesity*, 2013, 392747. <https://doi.org/10.1155/2013/392747>
2. Case, A., Fertig, A., & Paxson, C. (2005). The lasting impact of childhood health and circumstance. *Journal of Health Economics*, 24(2), 365–389. <https://doi.org/10.1016/j.jhealeco.2004.09.008>
3. Institute for Public Health (IPH) 1996. The second National Health and Morbidity Survey (NHMS II) 1996, Health Related Behaviours. Ministry of Health, Malaysia.
4. Institute for Public Health (IPH) 2008. The third National Health and Morbidity Survey (NHMS III) 2006, Nutritional Status. Ministry of Health, Malaysia.
5. Institute for Public Health (IPH) 2011. The National Health and Morbidity Survey 2011 (NHMS 2011). Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
6. Institute for Public Health (IPH) 2015. The National Health and Morbidity Survey 2015 (NHMS 2015). Vol. II. Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
7. Onis, M. De, Blossner, M., Borghi, E., Frongillo, E. a, & Morris, R. (2004). Estimates of Global Prevalence of Childhood Underweight in 1990 and 2015. *Journal of the American Medical Association*, 291(21), 2600–6. <https://doi.org/10.1001/jama.291.21.2600>
8. Sahoo, K., Sahoo, B., Choudhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: causes and consequences. *Journal of Family Medicine and Primary Care*, 4(2), 187–92. <https://doi.org/10.4103/2249-4863.154628>
9. Wojcicki, J. M., & Heyman, M. B. (2012). Adolescent nutritional awareness and use of food labels: results from the National Nutrition Health and Examination Survey. *BMC Pediatrics*, 12(1), 55. <https://doi.org/10.1186/1471-2431-12-55>
10. World Health Organization. (2006). Adolescent Nutrition: A Review of the Situation in Selected South-East Asian Countries. Regional Office for South-East Asia, New Delhi. New Delhi. <https://doi.org/10.3126/hprospect.v10i0.5656>

11. World Health Organization. (2014). Recognizing adolescence. Retrieved July, 23, 2017 from <http://apps.who.int/adolescent/second-decade/section2/page1/recognizing-adolescence.html>

1.1 Objectives

1.1.1 General Objectives

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

1.1.2 Specific Objectives

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

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

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

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

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

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

1.2 The NHMS 2017 Organisation Team

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

1.2.1 NHMS Steering Committee

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

1.2.2 Central Coordinating Team (CCT)

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

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

1.2.3 Research Team Members

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

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

1.2.4 State Liason 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**.

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

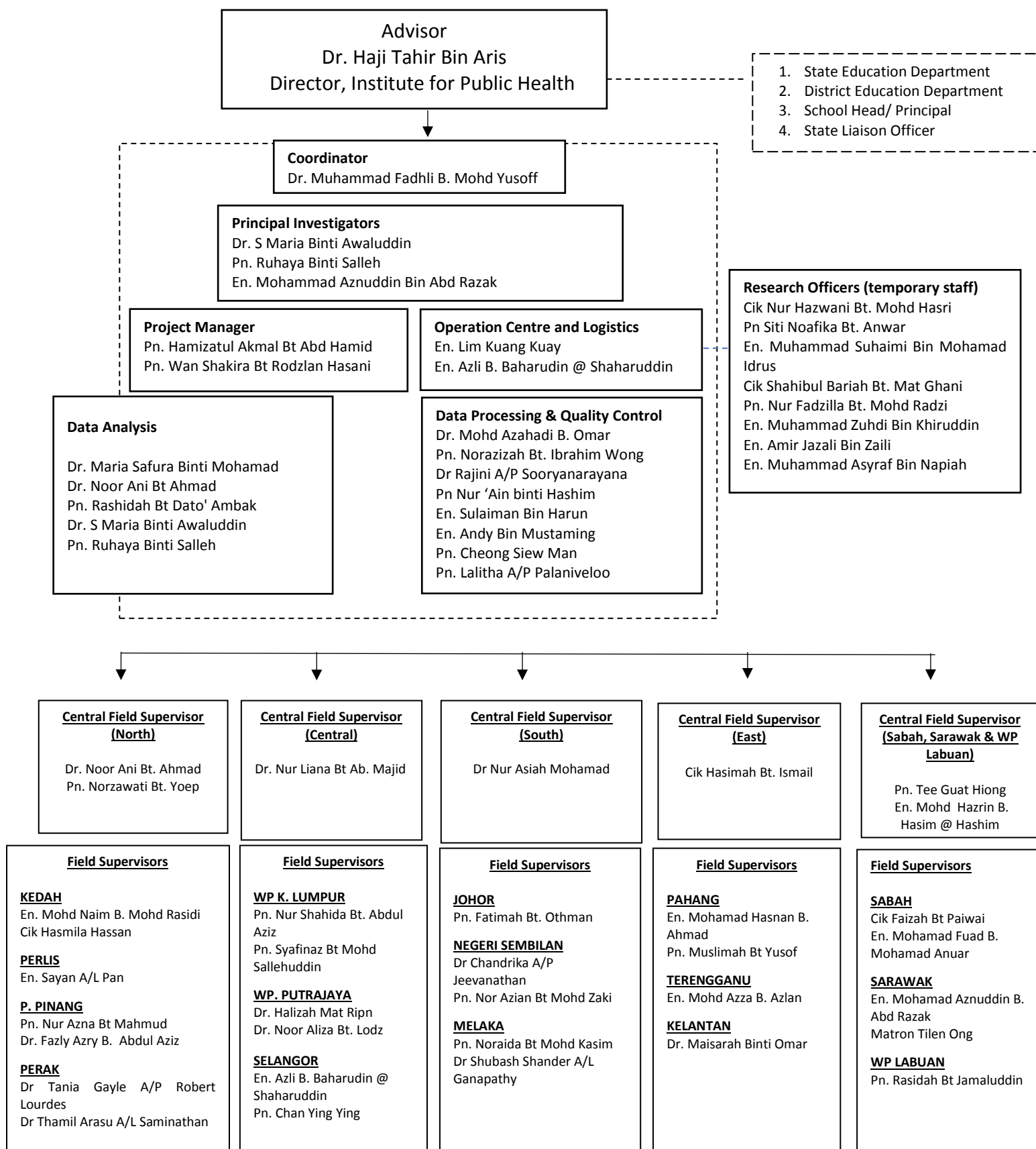


Figure 1: Organisation chart for data collection teams NHMS 2017

2.0 Methodology

Methodology and Sampling Design

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

2.1 Target Population

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

2.2 Sampling Frame

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

2.3 Sample Size Determination

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

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

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

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

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

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

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

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

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

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

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

No.	State	Secondary			Primary		
		Total Number of Schools	Number of Schools Sampled	Number of students sampled	Total Number of Schools	Number of Schools Sampled	Number of students sampled
1	Johor	306	14	1906	921	6	875
2	Kedah	219	14	1906	552	6	875
3	Kelantan	193	14	1906	423	6	875
4	Melaka	87	14	1906	236	6	875
5	Negeri Sembilan	139	14	1906	352	6	875
6	Pahang	209	14	1906	543	6	875
7	Pulau Pinang	141	14	1906	275	6	875
8	Perak	275	14	1906	852	6	875
9	Perlis	33	14	1906	73	6	875
10	Selangor	345	14	1906	727	6	875
11	Terengganu	162	14	1906	354	6	875
12	Sabah	246	14	1906	1,090	8	875
13	Sarawak	220	14	1906	1,274	7	875
14	WP Kuala Lumpur	133	14	1906	227	6	875
15	WP Labuan	19	8	1906	12	6	875
16	WP Putrajaya	11	8	1906	14	6	875
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 schools from the 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 module and Dietary Intake. Students were selected randomly from each selected class.

2.5 Ethical Approval

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

2.6 Data Collection

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

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

2.7 Data Management

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

2.7.1 Data Operation Centre

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

Station 1: Respondent ID checking

Station 2: Scanning

Station 3: Verification

Station 4: Storage

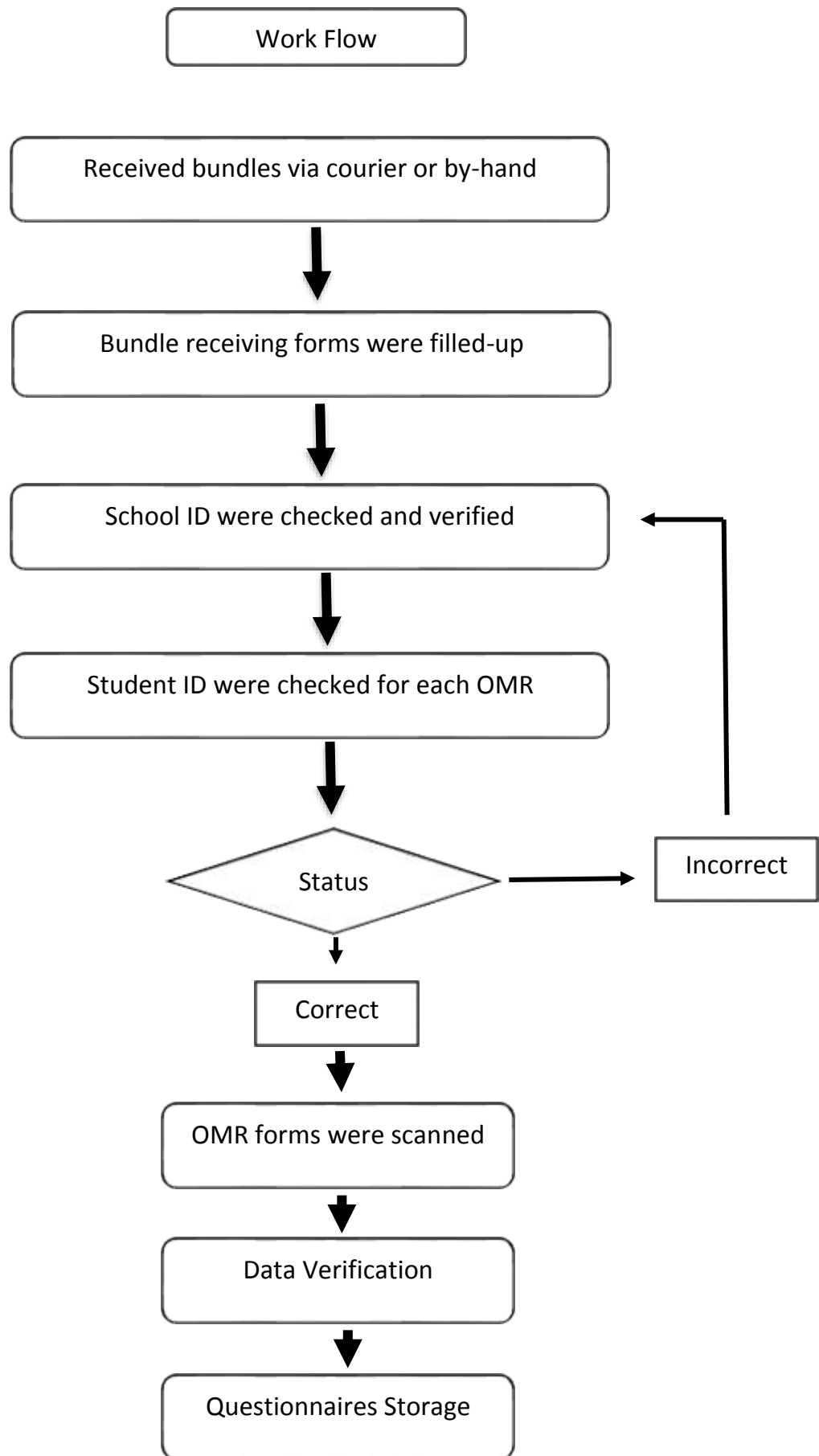


Figure 2: Work Flow of NHMS 2017

2.7.2 Data Analysis

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

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

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

Where;

W1 = the inverse of the probability of selecting the school

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

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

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

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

2.8 Survey Instruments

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

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

3.0 Findings

3.1 General Findings

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

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

State	Selected School	Eligible Student	Interviewed Student	Response Rate (%)
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

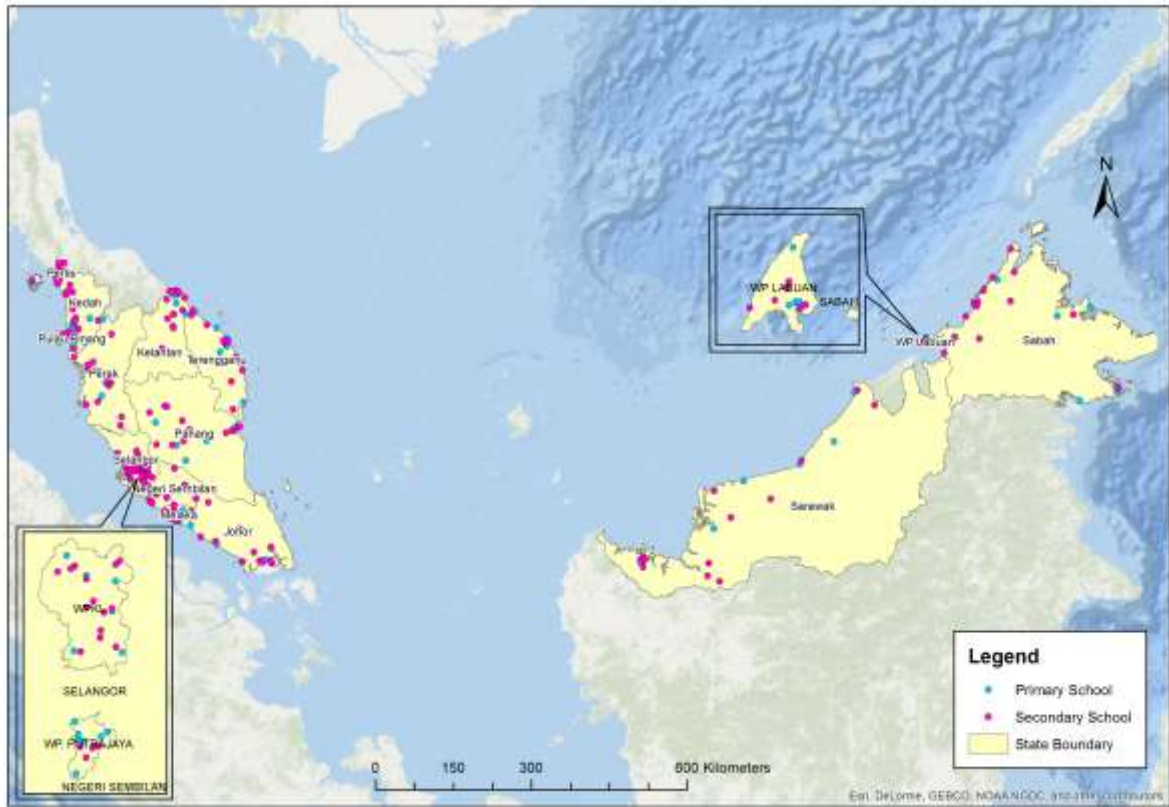


Figure 3: GIS mapping of the selected primary and secondary schools in Malaysia 2017

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

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

3.2.1 Introduction

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

3.2.2 Objectives

General objective:

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

Specific objective:

To determine the prevalence of stunting, thinness, normal weight, overweight and obesity among adolescents (Primary 4 to Secondary 5) in 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 referred to were:

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

3.2.4 Findings

3.2.4.1 Height-for-Age z-score

The findings of the survey showed that 93.6% (95% CI: 91.96, 94.99) of the adolescents had normal height-for-age status (HAZ: $\geq -2SD$ to $\leq +2SD$). The prevalence was higher than the national level [91.8% (95% CI: 91.19, 92.29)]. Comparing between strata, rural areas had higher percentage of total stunting [6.8% (95% CI: 5.27, 8.72)] compared to urban areas [5.2% (95% CI: 2.93, 9.04%)]. In term of sexes, the prevalence of stunting was slightly higher among girls [6.7% (95% CI: 5.22-8.61)] compared to boys [6.0% (95% CI: 4.31, 8.28)]. Comparing class

category, the prevalence of thinnest was not much different between primary level [6.4% (95% CI: 4.62, 8.80)] and secondary level [6.3% (95% CI: 4.57, 8.73)] students.

3.2.4.2 BMI-for-Age z-score

In terms of BMI-for-age status, the findings showed that 61.5% (95% CI: 58.82-64.20) of the population was in the normal range ($\geq -2SD$ to $\leq +1SD$). The prevalence was lower than the national level [62.9% (95% CI: 61.84, 64.02)]. Comparing between strata, the prevalence of thinness was not much different between urban [5.5% (95% CI: 3.69, 8.01)] and rural [5.7% (95% CI: 4.93, 6.61)] areas. According to sexes, more boys [6.7% (95% CI: 5.68, 7.78)] were thinner than girls [4.6% (95% CI: 3.53, 6.09)]. In terms of class category, 6.1% (95% CI: 5.00, 7.46) primary level students were thin compared to 5.4% (95% CI: 4.36, 6.57) secondary level students.

On the other hand, the prevalence of overweight in Melaka (BMI-for-age: $\geq +1SD$ to $\leq +2SD$) was 15.6% (95% CI: 13.56, 17.98), equal to national prevalence [15.6% (95% CI: 15.06, 16.19)]. Between strata, urban strata showed higher prevalence of overweight [18.3% (95% CI: 15.53-21.50)] than rural strata [14.6% (95% CI: 12.23, 17.43)]. Comparing between sexes, the prevalence of overweight was not much different between boys [15.4% (95% CI: 13.57, 17.53)] and girls [15.8% (95% CI: 12.24, 20.25)]. In term of class category, 13.5 % (95% CI: 9.75, 18.33) primary level students were overweight compared to 16.9% (95% CI: 14.92, 19.08) secondary level students.

For the prevalence of obesity (BMI-for-age: $> +2SD$), the state prevalence was 17.2% (95% CI: 14.58, 20.10), which was higher than national prevalence [14.8% (95% CI: 14.00, 15.73)]. Between strata, rural strata showed higher prevalence of obesity [18.0% (95% CI: 15.04, 21.34)] than urban strata [15.0% (95% CI: 10.46, 21.03)]. Comparing between sexes, boys had higher prevalence of obesity [18.3% (95% CI: 15.18, 22.01)] than girls [16.0% (95% CI: 13.14, 19.33)]. In term of class category, 21.1% (95% CI: 18.60, 23.88) primary level students were obese compared to 14.9% (95% CI: 11.86, 18.50) secondary level students.

3.2.5 Conclusion

The prevalence of stunting for adolescents aged 10 to 17 years in Melaka was 6.4%. On the other hand, the prevalence of overweight and obesity among this population were 15.6% and 17.2% respectively. In contrast, 5.6% of the population were found to have thinness. High demand of energy and nutrients are very important for physical growth and development at this age. However, the concept of healthy eating and living should be practised at younger ages to ensure healthy physical and mental development. Consequently, it is hoped reduce the prevalence of stunting, thinness, overweight and obesity.

3.2.6 Recommendation

Thinness, overweight and obesity is still a problem to be addressed for adolescents aged 10 to 17 years in Melaka. Various agencies have to take the initiative to set up a plan of action to overcome such problems. Healthy eating and living concepts should be carried out at an earlier stage. It can be implemented by developing pro-health policies and regulations to create health promoting environments in the work place, school, public areas and even at home.

One of the suggested initiatives that involves collaboration between Ministry of Health and Ministry of Education is to empower Parents and Teachers Associations in school to disseminate and implement healthy eating programs in schools. With that, it can give rise to the concept of healthy eating and living to the children during school time, and further practise and implement it at home and in daily life. Eventually, it is hoped 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 development patterns. An evaluation also provides useful insight into the nutritional and health situation of entire population groups.

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

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	166	6757	6.4	5.01	8.04	2519	99497	93.6	91.96	94.99
Locality of School										
Urban	38	1497	5.2	2.93	9.04	765	27331	94.8	90.96	97.07
Rural	128	5261	6.8	5.27	8.72	1754	72166	93.2	91.28	94.73
Sex										
Boys	90	3181	6.0	4.31	8.28	1433	49861	94.0	91.72	95.69
Girls	76	3576	6.7	5.22	8.61	1086	49636	93.3	91.39	94.78
Class										
Standard 4	23	1083	8.2	5.00	13.24	242	12076	91.8	86.76	95.00
Standard 5	8	289	2.3	0.86	5.79	285	12550	97.7	94.21	99.14
Standard 6	21	1125	8.6	4.94	14.70	235	11895	91.4	85.30	95.06
Form 1	17	633	4.6	2.91	7.36	347	12983	95.4	92.64	97.09
Form 2	20	747	5.6	3.10	9.88	327	12625	94.4	90.12	96.90
Form 3	22	736	5.5	3.77	7.88	384	12716	94.5	92.12	96.23
Form 4	23	821	6.2	4.47	8.54	364	12427	93.8	91.46	95.53
Form 5	32	1323	9.8	6.22	15.02	335	12224	90.2	84.98	93.78
Class Category										
Primary Level	52	2497	6.4	4.62	8.80	762	36521	93.6	91.20	95.38
Secondary Level	114	4260	6.3	4.57	8.73	1757	62976	93.7	91.27	95.43
Ethnicity										
Malay	148	6014	7.3	5.72	9.29	1906	76261	92.7	90.71	94.28
Chinese	9	403	2.4	1.36	4.10	446	16579	97.6	95.90	98.64
Indian	6	205	3.8	1.69	8.35	131	5170	96.2	91.65	98.31
Bumiputera Sabah	1	34	6.9	1.11	32.71	10	454	93.1	67.29	98.89
Bumiputera Sarawak	1	39	19.1	2.76	66.20	5	164	80.9	33.80	97.24
Others	1	64	6.9	1.18	31.23	21	870	93.1	68.77	98.82

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	155	5989	5.6	4.86	6.55	1643	65271	61.5	58.82	64.20
Locality of School										
Urban	45	1571	5.5	3.69	8.01	493	17610	61.2	55.69	66.47
Rural	110	4418	5.7	4.93	6.61	1150	47661	61.7	58.53	64.71
Sex										
Boys	103	3518	6.7	5.68	7.78	911	31494	59.6	55.81	63.19
Girls	52	2472	4.6	3.53	6.09	732	33777	63.5	58.91	67.90
Class										
Standard 4	26	1243	9.4	7.55	11.77	150	7572	57.5	48.19	66.38
Standard 5	10	478	3.7	2.12	6.53	169	7539	59.0	53.93	63.91
Standard 6	14	659	5.1	3.34	7.64	154	7963	61.3	56.41	66.02
Form 1	22	821	6.0	4.35	8.34	218	8151	60.0	55.70	64.22
Form 2	12	450	3.4	1.80	6.20	208	8057	60.2	55.43	64.88
Form 3	24	743	5.5	4.68	6.51	245	8136	60.5	54.60	66.08
Form 4	17	568	4.3	3.08	5.98	261	8899	67.5	64.28	70.51
Form 5	30	1028	7.6	4.86	11.65	238	8954	66.1	59.93	71.76
Class Category										
Primary Level	50	2380	6.1	5.00	7.46	473	23074	59.3	54.47	63.94
Secondary Level	105	3609	5.4	4.39	6.57	1170	42197	62.9	59.86	65.75
Ethnicity										
Malay	105	4238	5.2	4.20	6.34	1232	49375	60.2	57.22	63.03
Chinese	35	1244	7.3	5.47	9.74	296	11243	66.2	63.52	68.79
Indian	13	438	8.1	4.36	14.70	91	3665	68.2	55.55	78.63
Bumiputera Sabah	1	30	6.1	0.76	35.57	7	298	61.1	24.27	88.48
Bumiputera Sarawak	-	-	-	-	-	5	164	80.9	33.80	97.24
Others	1	40	4.2	0.67	22.49	12	526	56.3	39.27	71.95

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	426	16589	15.6	13.56	17.98	455	18207	17.2	14.58	20.10
Locality of School										
Urban	148	5273	18.3	15.53	21.50	115	4313	15.0	10.46	21.03
Rural	278	11316	14.6	12.23	17.43	340	13893	18.0	15.04	21.34
Sex										
Boys	236	8167	15.4	13.57	17.53	268	9703	18.3	15.18	22.01
Girls	190	8422	15.8	12.24	20.25	187	8503	16.0	13.14	19.33
Class										
Standard 4	33	1603	12.2	7.13	20.04	56	2741	20.8	17.79	24.23
Standard 5	45	1928	15.1	11.32	19.84	67	2830	22.2	16.58	28.95
Standard 6	35	1713	13.2	8.39	20.15	52	2649	20.4	14.57	27.81
Form 1	61	2294	16.9	14.19	19.99	62	2312	17.0	13.23	21.65
Form 2	60	2313	17.3	12.21	23.92	67	2554	19.1	13.44	26.41
Form 3	79	2636	19.6	15.57	24.35	58	1937	14.4	9.57	21.11
Form 4	62	2216	16.8	12.99	21.46	45	1506	11.4	8.80	14.68
Form 5	51	1887	13.9	10.96	17.55	48	1678	12.4	7.44	19.90
Class Category										
Primary Level	113	5244	13.5	9.75	18.33	175	8220	21.1	18.60	23.88
Secondary Level	313	11345	16.9	14.92	19.08	280	9987	14.9	11.86	18.50
Ethnicity										
Malay	325	13036	15.9	13.73	18.30	386	15427	18.8	15.82	22.18
Chinese	74	2520	14.8	11.75	18.57	50	1975	11.6	8.82	15.18
Indian	21	783	14.6	9.30	22.10	12	489	9.1	3.84	20.01
Bumiputera Sabah	2	82	16.7	3.09	55.87	1	78	16.1	1.79	66.82
Bumiputera Sarawak	-	-	-	-	-	1	39	19.1	2.76	66.20
Others	4	169	18.0	7.35	37.93	5	200	21.4	11.78	35.73

3.3 Perception on body weight management among adolescent (Primary 4 to Secondary 5) in Melaka

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

3.3.1 Introduction

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

3.3.2 Objective

General objective:

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

Specific Objectives

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

3.3.3 Variable definition

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

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

3.3.4 Findings

Overall, 42.0% (95% CI:39.43, 44.69) of the adolescents in Melaka perceived that they have normal weight. There was no significant different in school locality, however there was significant different in sex which boys was higher in perceived thin 30.7% (95%CI: 26.72, 34.98) as compared than girls, and primary adolescents was higher 33.4% (95%CI: 32.27,34.46) in perceived thin based on school category. **(Table 3.3.1)**

Among the normal weight category, 53.8% (95% CI: 51.42, 56.22) correctly perceived their weight to be normal, 27.4% (95% CI: 22.60, 32.80) underestimated their body weight or perceived themselves to be thin, while 17.8% (95% CI: 13.70, 22.70) and 1.0% (95% CI: 0.70, 1.60) were overestimated to be overweight and obese, respectively. However, among the actual overweight category, 54.0% (95% CI: 45.32, 62.38) correctly perceived their weight to be overweight, but 10.2% (95% CI: 6.12, 16.48) and 28.5% (95% CI: 23.33, 34.40) underestimated their body weight to be thin or normal respectively. There were significant differences among adolescents that had normal body weight but perceived themselves as overweight based on sex and school category with more girls at 24.1% (95% CI: 18.26, 31.08) and secondary school students at 23.3% (95% CI: 20.22, 26.74) who perceived themselves as overweight (Table 3.3.2)

Among all the adolescents who correctly perceived thin and have actual thin body weight, 69.9% (95% CI: 58.73, 79.09) reported they wanted to increase weight while adolescents who perceived normal and have actual normal body weight 28.1% (95% CI: 23.62, 32.97) have no plan to change their weight. There were no significant different in school locality, sex and school category among adolescent who correctly perceived thin and overweight between four categories of action taken **(Table 3.3.3)**

However, adolescents whom misperception, perceived thin but actually in overweight and obese categories, most of them 66.4% (95% CI: 51.57, 78.56) wanted to lose weight while 10.2% (95% CI: 4.52, 21.58) wanted to increase their weight. There were no significant different in sex and school category based on their action taken. While for adolescents who have normal body weight but perceived thin or overweight there were no significant different based on school locality, sex and school category **(Table 3.3.4)**

About 66.2% (95% CI: 60.64, 71.36) adolescents choose health purpose as the main factor that motivate to lose weight followed by increase self-confidence 24.0% (95% CI: 19.67, 28.90). However, beauty purpose become the main factor to lose body weight among girls, 10.2% (95% CI: 7.04, 14.69) **(Table 3.3.5)**

When compared by sex, more boys chose health purposes as the main factor to motivate them to reduce body weight at 67.8% (95% CI: 61.39, 73.57), compared to girls at 64.9% (95% CI: 57.16, 71.99).

However, other factors to motivate adolescents to increase body weight were also health purposes at 60.5% (95% CI: 53.71, 66.90) followed by increased self-confidence at 26.7% (95% CI: 22.08, 31.93) (**Table 3.3.6**)

Exercise was the most frequent option preferred by adolescents to lose body weight 56.2% (95% CI: 52.50, 59.92) (**Table 3.3.7**), while increased quantity of food was the most frequent option preferred by adolescents to increase their body weight, 55.7% (48.86, 62.29) (**Table 3.3.8**)

3.3.5 Discussion/Conclusion

Perception of having normal weight among adolescents in Melaka was higher than the national prevalence at 42.0 % and 41.4% respectively.

Among the adolescents with actual thinness in Melaka, 74.4% correctly perceived themselves as thin, and this was higher compared with the national prevalence of 69.9 %. Adolescents with actual normal body weight, 53.8% had correctly perceived their weight to be normal and this was slightly higher than national prevalence, 50.2%.

In Melaka, the trend of main factors to lose body weight among adolescents was similar with the national trend. Health purposes was the highest (66.2%) main factor to lose body weight; followed by increased self confidence (24.0%) , beauty purposes (7.4 %) and to have more friends (2.5%) .

Health purposes is the highest (60.5%) main factor to increase body weight . This was higher compared with the national prevalence. This was followed by increased self confidence (23.8%), beauty purposes (7.5 %) and to have more friends (5.3%).

Adolescents in Melaka chose to exercise as the preferred option to lose weight. However this was lower compared with the national prevalence, at 56.2% and 62.5% respectively. This was followed by reduced consumption of high fat foods (23.8%), increased intake of fruits and vegetables (6.9 %) and reduced intake of high sugar foods (5.3%). These trends are similar with the national trends.

An estimated 55.7% adolescents in Melaka chose to increase quantity of food as the preferred option to increase body weight. This was higher compared with the national prevalence, 52.4%.

3.3.6 Recommendation

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

Findings from this study should be utilised by relevant programme managers. Interventions 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 schools, 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 to 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 from which to tackle body image problems, encourage good eating habits and instil a healthy body image amongst adolescents.

References

1. Abbott, R. A., Lee, A. J., Stubbs, C. O., & Davies, P. S. W. (2010). Accuracy of weight status perception in contemporary Australian children and adolescents. *Journal of Paediatrics and Child Health*, 46, 343–348.
2. Brener, N. D., Eaton, D. K., Lowry, R., & McManus, T. (2004). The association between weight perception and BMI among high school students. *Obesity*, 12, 1866–1874.
3. Edwards, N. M., Pettingell, S., & Borowsky, I. W. (2010). Where perception meets reality: Self-perception of weight in overweight adolescents. *Pediatrics*, 125, 452–458.
4. Keel, P. K., Baxter, M. G., Heatherton, T. F., & Joiner, T. E. J. (2007). A 20-year longitudinal study of body weight, dieting and eating disorder symptoms. *Journal of Abnormal Psychology*, 116, 422–432. Linacre, S. (2007).
5. Maximova, K., McGrath, J. J., Barnett, T., O'Loughlin, J., Paradis, G., & Lambert, M. (2008). Do you see what I see? Weight status misperception and exposure to obesity among children and adolescents. *International Journal of Obesity*, 32, 1008–1015.
6. O'Dea, J. A., & Amy, N. K. (2011). Perceived and desired weight, weight related eating and exercising behaviours, and advice received from parents among thin, overweight, obese or normal weight Australian children and adolescents. *International Journal of Behavioral Nutrition and Physical Activity*,
7. Strauss, R. S. (1999). Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National health and nutrition examination survey III. *Archives of Pediatric and Adolescent Medicine*, 153, 741–747.

8. Viner, R. M., Haines, M. M., Taylor, S. J. C., Head, J., Booy, R., & Stansfeld, S. (2006). Body mass, weight control behaviours, weight perception and emotional well being in a multiethnic sample of early adolescents. *International Journal of Obesity*, 30, 1514.
9. Wang, Y., Liang, H., & Chen, X. (2009). Measured body mass index, body weight perception, dissatisfaction and control practices in urban low-income African American adolescents. *BMC Public Health*, 9, 183–195
10. Xie, B., Liu, C., Chou, C. P., Xia, J., Spruijt-Metz, D., & Gong, J., et al. (2003). Weight perception and psychological factors in Chinese adolescents. *Journal of Adolescent Health*, 33, 202–210.

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	665	26356	24.8	20.98	29.07	1126	44665	42.0	39.43	44.69
Locality of School										
Urban	185	6652	23.1	16.94	30.61	323	11637	40.4	36.57	44.28
Rural	480	19704	25.4	20.90	30.60	803	33028	42.7	39.48	45.89
Sex										
Boys	451	16283	30.7	26.72	34.98	648	22535	42.5	40.20	44.80
Girls	214	10072	18.9	14.74	23.97	478	22130	41.6	37.70	45.59
School Category										
Primary	278	13015	33.4	32.27	34.46	371	17681	45.3	42.93	47.72
Secondary	387	13341	19.8	16.45	23.73	755	26983	40.1	36.84	43.52
Class										
Standard 4	114	5622	42.7	35.40	50.37	111	5342	40.6	31.14	50.81
Standard 5	97	4088	31.8	24.36	40.39	136	6030	47.0	41.70	52.30
Standard 6	67	3306	25.4	21.26	30.02	124	6309	48.5	42.24	54.72
Form 1	83	3116	22.9	16.73	30.47	155	5750	42.2	35.94	48.77
Form 2	70	2617	19.6	12.98	28.41	146	5612	42.0	33.66	50.75
Form 3	77	2351	17.5	12.67	23.60	173	5773	42.9	37.57	48.42
Form 4	79	2529	19.1	15.40	23.42	146	4920	37.1	30.86	43.89
Form 5	78	2727	20.1	17.01	23.67	135	4929	36.4	28.99	44.49
Ethnicity										
Malay	513	20455	24.9	20.85	29.36	865	34662	42.1	39.00	45.33
Chinese	98	3641	21.4	18.32	24.93	184	7006	41.3	37.42	45.21
Indian	37	1505	28.0	20.14	37.50	62	2387	44.4	37.72	51.30
Bumiputera Sabah	7	313	64.1	35.08	85.47	3	133	27.4	7.63	63.22
Bumiputera Sarawak	3	103	50.7	9.21	91.26	2	61	30.2	7.08	71.10
Others	7	339	36.3	18.66	58.62	10	415	44.4	24.27	66.63

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	776	30623	28.8	24.59	33.46	118	4611	4.3	3.38	5.56
Locality of School										
Urban	259	9371	32.5	24.35	41.88	36	1168	4.1	2.95	5.55
Rural	517	21252	27.4	22.89	32.53	82	3443	4.4	3.23	6.09
Sex										
Boys	369	12510	23.6	20.07	27.50	55	1714	3.2	2.30	4.52
Girls	407	18112	34.0	28.24	40.36	63	2897	5.4	3.87	7.62
School Category										
Primary	151	7532	19.3	17.67	21.05	14	790	2.0	1.27	3.21
Secondary	625	23091	34.3	30.70	38.18	104	3821	5.7	4.93	6.54
Class										
Standard 4	36	1960	14.9	10.42	20.85	4	235	1.8	1.01	3.14
Standard 5	55	2454	19.1	15.16	23.80	5	268	2.1	0.98	4.36
Standard 6	60	3119	24.0	19.62	28.90	5	287	2.2	1.15	4.17
Form 1	111	4175	30.7	24.49	37.60	15	576	4.2	2.16	8.14
Form 2	114	4457	33.3	26.73	40.65	17	687	5.1	3.01	8.61
Form 3	137	4703	35.0	29.33	41.04	19	627	4.7	2.68	7.98
Form 4	137	4907	37.0	30.78	43.76	25	892	6.7	4.48	10.00
Form 5	126	4850	35.8	29.68	42.43	28	1040	7.7	5.20	11.18
Ethnicity										
Malay	594	23910	29.1	24.26	34.38	82	3248	3.9	2.83	5.49
Chinese	148	5390	31.7	25.91	38.21	25	943	5.6	3.94	7.78
Indian	28	1094	20.4	13.73	29.12	10	388	7.2	2.99	16.46
Bumiputera Sabah	1	42	8.6	1.03	45.68	-	-	-	-	-
Bumiputera Sarawak	1	39	19.1	2.76	66.20	-	-	-	-	-
Others	4	148	15.9	5.53	37.78	1	32	3.4	0.36	25.11

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
Melaka	119	74.4	63.55	82.92	33	23.6	15.07	34.91	3	2.0	0.62	6.31	-	-	-	-
Locality of school																
Urban	39	84.4	70.61	92.37	6	15.6	7.63	29.39	-	-	-	-	-	-	-	-
Rural	80	70.9	57.91	81.17	27	26.4	15.96	40.37	3	2.7	0.85	8.31	-	-	-	-
Sex																
Boys	85	80.9	68.12	89.40	17	18.0	9.77	30.86	1	1.0	0.13	7.95	-	-	-	-
Girls	34	65.2	52.92	75.67	16	31.5	20.70	44.70	2	3.4	0.70	14.64	-	-	-	-
School Category																
Primary	28	57.4	46.18	67.89	21	41.1	30.44	52.59	1	1.5	0.20	10.93	-	-	-	-
Secondary	91	85.7	76.46	91.65	12	12.0	6.34	21.67	2	2.3	0.55	9.14	-	-	-	-

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
Melaka	449	27.4	22.56	32.82	888	53.8	51.42	56.22	289	17.8	13.72	22.70	17	1.0	0.66	1.56
Locality of school																
Urban	128	26.0	18.96	34.55	267	53.7	49.87	57.48	95	19.7	12.63	29.44	3	0.6	0.23	1.44
Rural	321	27.9	21.99	34.70	621	53.9	50.90	56.82	194	17.0	12.47	22.87	14	1.2	0.73	1.87
Sex																
Boys	300	34.3	28.93	40.19	495	53.6	49.93	57.14	106	11.0	7.93	15.03	10	1.1	0.63	2.00
Girls	149	20.9	15.92	26.97	393	54.1	50.25	57.87	183	24.1	18.26	31.08	7	0.9	0.41	2.02
School Category																
Primary	188	38.4	34.59	42.42	251	53.4	50.65	56.08	31	7.6	4.78	11.90	3	0.6	0.22	1.57
Secondary	261	21.4	17.38	25.96	637	54.1	50.67	57.44	258	23.3	20.22	26.74	14	1.2	0.81	1.91

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
Melaka	41	10.2	6.12	16.48	122	28.5	23.27	34.44	233	54.0	45.32	62.38	30	7.3	4.95	10.69
Locality of school																
Urban	12	8.9	3.34	21.54	37	25.6	14.33	41.41	91	60.2	40.96	76.66	8	5.4	2.48	11.28
Rural	29	10.8	5.93	18.82	85	29.9	25.37	34.85	142	51.1	42.76	59.36	22	8.2	5.28	12.60
Sex																
Boys	28	13.5	7.95	21.89	83	36.5	30.24	43.34	116	46.3	35.92	57.03	9	3.7	1.84	7.22
Girls	13	7.0	3.32	14.17	39	20.8	15.29	27.53	117	61.4	53.03	69.14	21	10.9	7.07	16.31
School Category																
Primary	28	23.7	21.62	26.01	44	37.6	32.78	42.69	37	34.9	29.18	41.04	4	3.8	2.42	5.81
Secondary	13	3.9	1.94	7.71	78	24.3	18.84	30.80	196	62.8	55.75	69.33	26	9.0	5.91	13.39

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
Melaka	54	12.4	8.60	17.61	83	18.6	12.61	26.57	249	54.3	48.80	59.66	69	14.7	9.96	21.16
Locality of school																
Urban	6	6.5	1.76	21.07	13	13.6	5.09	31.60	73	63.2	52.73	72.57	23	16.7	7.01	34.89
Rural	48	14.3	10.03	19.91	70	20.2	13.21	29.51	176	51.5	46.01	56.97	46	14.1	9.08	21.16
Sex																
Boys	37	15.4	10.39	22.16	53	21.1	14.52	29.69	144	53.2	45.85	60.39	34	10.3	5.83	17.58
Girls	17	9.0	5.14	15.44	30	15.7	8.52	27.20	105	55.5	47.82	62.97	35	19.7	13.02	28.71
School Category																
Primary	33	18.3	16.14	20.73	55	29.4	20.73	39.86	80	46.7	41.51	51.99	7	5.6	1.94	14.95
Secondary	21	7.6	2.97	17.90	28	9.7	6.66	13.97	169	60.5	53.26	67.32	62	22.2	18.04	27.05

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	7	286	6.4	2.58	15.07	84	3115	69.9	58.73	79.09
Locality of school										
Urban	-	-	-	-	-	29	1011	76.3	57.56	88.42
Rural	7	286	9.1	3.81	20.32	55	2104	67.2	53.35	78.53
Sex										
Boys	4	128	4.5	1.61	11.97	61	2048	71.9	61.36	80.54
Girls	3	158	9.8	2.21	34.19	23	1067	66.2	47.91	80.72
School category										
Primary	5	223	16.4	6.20	36.65	16	773	56.6	35.74	75.31
Secondary	2	62	2.0	0.47	8.33	68	2342	75.8	65.17	83.92

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	
Melaka	20	712	16.0	9.52	25.59	8	344	7.7	3.89	14.75
Locality of school										
Urban	8	245	18.4	8.13	36.64	2	70	5.3	1.75	14.76
Rural	12	468	14.9	7.65	27.14	6	275	8.8	3.90	18.52
Sex										
Boys	15	461	16.2	9.41	26.49	5	209	7.4	2.79	17.97
Girls	5	251	15.6	6.00	34.85	3	135	8.4	2.86	22.11
School category										
Primary	3	164	12.0	4.69	27.49	4	206	15.0	6.59	30.77
Secondary	17	548	17.7	9.56	30.55	4	139	4.5	1.90	10.20

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	
Melaka	230	9440	26.9	22.04	32.38	108	3980	11.3	9.78	13.11
Locality of school										
Urban	54	2051	21.7	16.85	27.45	32	1071	11.3	9.37	13.64
Rural	176	7390	28.8	22.79	35.70	76	2909	11.3	9.37	13.67
Sex										
Boys	109	3860	22.9	18.89	27.54	75	2393	14.2	11.55	17.38
Girls	121	5581	30.5	23.49	38.66	33	1587	8.7	6.28	11.90
School category										
Primary	80	3798	30.8	20.97	42.85	27	1261	10.2	7.91	13.16
Secondary	150	5642	24.8	20.09	30.10	81	2719	11.9	10.03	14.15

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	241	9849	28.1	23.62	32.97	308	11831	33.7	30.22	37.37
Locality of school										
Urban	76	2672	28.3	24.19	32.71	105	3662	38.7	34.87	42.74
Rural	165	7177	28.0	22.21	34.60	203	8168	31.9	27.81	36.18
Sex										
Boys	124	4307	25.6	20.75	31.11	186	6273	37.3	33.56	41.13
Girls	117	5542	30.3	25.47	35.69	122	5558	30.4	25.36	36.02
School category										
Primary	64	3410	27.7	18.51	39.23	80	3846	31.2	25.34	37.80
Secondary	177	6439	28.3	23.99	32.95	228	7984	35.0	30.95	39.37

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
Melaka	200	7795	87.1	81.10	91.34	2	80	0.9	0.11	6.77
Locality of school										
Urban	75	2645	83.4	68.53	92.05	-	-	-	-	-
Rural	125	5150	89.1	82.79	93.25	2	80	1.4	0.18	9.73
Sex										
Boys	91	3003	79.4	69.00	86.94	1	30	0.8	0.10	6.09
Girls	109	4792	92.7	87.38	95.86	1	50	1.0	0.12	7.45
School category										
Primary	33	1629	89.1	75.91	95.47	-	-	-	-	-
Secondary	167	6165	86.5	79.50	91.43	2	80	1.1	0.14	8.31

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
Melaka	21	756	8.4	5.77	12.19	10	323	3.6	1.59	7.96
Locality of school										
Urban	10	335	10.6	6.08	17.70	6	192	6.1	1.70	19.42
Rural	11	421	7.3	4.26	12.17	4	131	2.3	0.82	6.14
Sex										
Boys	15	475	12.6	8.50	18.19	9	275	7.3	3.06	16.27
Girls	6	280	5.4	2.46	11.54	1	48	0.9	0.11	7.34
School category										
Primary	3	155	8.5	4.13	16.61	1	45	2.5	0.30	17.24
Secondary	18	601	8.4	5.41	12.91	9	278	3.9	1.61	9.16

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	63	2601	66.4	51.57	78.56	10	402	10.2	4.52	21.58
Locality of school										
Urban	11	445	59.6	38.52	77.66	2	60	8.0	1.09	40.83
Rural	52	2156	68.0	50.75	81.40	8	342	10.8	4.48	23.71
Sex										
Boys	42	1695	66.2	52.16	77.87	7	244	9.5	4.42	19.33
Girls	21	907	66.7	38.64	86.47	3	158	11.6	2.78	37.56
School category										
Primary	39	1723	62.6	44.65	77.68	6	274	10.0	3.15	27.30
Secondary	24	878	75.3	53.61	88.89	4	128	10.9	4.92	22.60

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
Melaka	17	714	18.2	10.52	29.71	4	201	5.1	2.06	12.24
Locality of school										
Urban	4	197	26.4	9.11	56.11	1	45	6.0	2.31	14.79
Rural	13	517	16.3	9.50	26.57	3	156	4.9	1.58	14.33
Sex										
Boys	13	543	21.2	11.63	35.48	2	79	3.1	0.82	10.79
Girls	4	171	12.6	4.18	32.36	2	123	9.0	1.82	34.72
School category										
Primary	12	553	20.1	10.81	34.30	4	201	7.3	3.15	16.08
Secondary	5	161	13.8	4.58	34.79	-	-	-	-	-

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
Melaka	362	14855	49.3	44.48	54.12	218	8083	26.8	22.85	31.21
Locality of school										
Urban	95	3587	44.0	36.31	51.97	79	2641	32.4	23.38	42.93
Rural	267	11268	51.3	45.57	56.91	139	5442	24.8	20.97	28.97
Sex										
Boys	164	5906	40.4	35.76	45.18	151	5012	34.3	28.13	40.97
Girls	198	8948	57.7	51.33	63.82	67	3071	19.8	15.71	24.65
School category										
Primary	105	5107	47.5	43.19	51.77	52	2435	22.6	19.88	25.63
Secondary	257	9748	50.3	43.32	57.28	166	5648	29.1	23.66	35.32

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	103	4096	13.6	10.59	17.28	72	3103	10.3	7.61	13.79
Locality of school										
Urban	30	1132	13.9	8.89	21.01	22	795	9.7	7.66	12.32
Rural	73	2965	13.5	9.97	17.99	50	2308	10.5	7.05	15.37
Sex										
Boys	59	2118	14.5	11.16	18.58	42	1591	10.9	8.38	14.02
Girls	44	1978	12.8	8.54	18.63	30	1511	9.7	6.00	15.44
School category										
Primary	40	1828	17.0	11.72	23.99	25	1389	12.9	7.95	20.29
Secondary	63	2268	11.7	8.66	15.64	47	1713	8.8	6.34	12.21

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	850	34799	66.2	60.64	71.36	96	3867	7.4	5.32	10.09
Locality of school										
Urban	219	8246	62.9	49.64	74.44	22	801	6.1	2.79	12.86
Rural	631	26553	67.3	61.47	72.66	74	3065	7.8	5.45	10.97
Sex										
Boys	441	15958	67.8	61.39	73.57	27	893	3.8	2.63	5.45
Girls	409	18840	64.9	57.16	71.99	69	2974	10.2	7.04	14.69
School category										
Primary	324	15379	78.0	74.17	81.32	17	812	4.1	2.67	6.29
Secondary	526	19420	59.2	55.25	62.95	79	3055	9.3	6.72	12.76
Class										
Standard 4	93	4517	70.9	59.89	79.85	10	519	8.1	4.31	14.84
Standard 5	132	5796	82.8	73.48	89.28	5	205	2.9	1.59	5.30
Standard 6	99	5066	79.8	69.33	87.29	2	89	1.4	0.24	7.60
Form 1	122	4654	69.9	59.32	78.75	11	433	6.5	2.50	15.82
Form 2	113	4402	64.0	54.10	72.84	10	426	6.2	2.87	12.81
Form 3	113	3818	55.7	48.04	63.00	27	956	13.9	8.40	22.22
Form 4	96	3395	52.8	43.50	61.98	16	629	9.8	4.98	18.31
Form 5	82	3151	52.4	45.08	59.69	15	613	10.2	6.20	16.31
Ethnicity										
Malay	711	29155	67.6	61.81	72.91	69	2804	6.5	5.00	8.41
Chinese	84	3295	53.0	43.62	62.09	20	805	12.9	5.80	26.39
Indian	41	1693	71.0	55.32	82.89	6	219	9.2	4.61	17.44
Bumiputera Sabah	5	249	85.6	35.78	98.46	-	-	-	-	-
Bumiputera Sarawak	3	114	100.0	100.00	100.00	-	-	-	-	-
Others	6	292	69.0	36.62	89.54	1	39	9.3	0.95	52.10

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

Table 3.3.5 : Main factors that motivate to lose 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
Melaka	326	12605	24.0	19.67	28.90	32	1288	2.5	1.56	3.84
Locality of school										
Urban	103	3711	28.3	18.82	40.20	10	354	2.7	1.03	6.88
Rural	223	8894	22.5	18.22	27.56	22	934	2.4	1.42	3.93
Sex										
Boys	171	5828	24.8	19.51	30.86	23	865	3.7	2.44	5.50
Girls	155	6777	23.4	17.85	29.95	9	424	1.5	0.67	3.17
School category										
Primary	59	2796	14.2	11.17	17.83	16	741	3.8	2.67	5.26
Secondary	267	9809	29.9	26.49	33.50	16	547	1.7	0.74	3.70
Class										
Standard 4	20	957	15.0	8.94	24.15	8	381	6.0	3.43	10.20
Standard 5	18	877	12.5	6.91	21.63	3	125	1.8	0.60	5.17
Standard 6	21	962	15.1	8.25	26.15	5	235	3.7	1.93	6.98
Form 1	38	1420	21.3	14.89	29.60	4	150	2.3	0.64	7.60
Form 2	46	1773	25.8	19.14	33.78	8	277	4.0	1.66	9.47
Form 3	58	2023	29.5	24.67	34.80	2	64	0.9	0.23	3.67
Form 4	67	2376	37.0	31.15	43.23	1	26	0.4	0.05	3.37
Form 5	58	2216	36.9	29.40	45.04	1	30	0.5	0.06	3.93
Ethnicity										
Malay	258	10156	23.5	18.59	29.35	23	1009	2.3	1.41	3.84
Chinese	53	1843	29.6	21.40	39.41	9	279	4.5	1.77	10.94
Indian	12	473	19.8	9.52	36.75	-	-	-	-	-
Bumiputera Sabah	1	42	14.4	1.54	64.22	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	2	92	21.7	5.75	55.86	-	-	-	-	-

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
Melaka	245	9192	60.5	53.71	66.90	33	1132	7.5	5.00	10.97
Locality of school										
Urban	85	2821	62.6	51.59	72.46	10	322	7.1	4.26	11.74
Rural	160	6372	59.6	51.11	67.56	23	810	7.6	4.50	12.49
Sex										
Boys	165	5383	56.8	49.84	63.42	26	843	8.9	5.84	13.31
Girls	80	3809	66.7	55.17	76.53	7	289	5.1	2.27	10.93
School category										
Primary	49	2491	52.7	39.23	65.77	10	417	8.8	4.55	16.41
Secondary	196	6702	64.0	57.04	70.46	23	715	6.8	4.16	11.01
Class										
Standard 4	16	931	47.0	28.85	66.00	6	258	13.0	5.63	27.31
Standard 5	23	1030	61.6	43.06	77.33	2	60	3.6	0.47	22.60
Standard 6	10	530	49.3	33.25	65.45	2	100	9.3	3.62	21.76
Form 1	37	1357	67.3	45.89	83.31	3	101	5.0	1.24	18.14
Form 2	25	947	58.1	43.04	71.76	4	130	8.0	2.98	19.56
Form 3	40	1222	60.7	50.34	70.10	6	184	9.1	3.09	24.08
Form 4	46	1507	63.6	50.13	75.28	6	177	7.5	3.46	15.49
Form 5	48	1669	68.4	55.00	79.36	4	123	5.0	2.35	10.46
Ethnicity										
Malay	171	6412	56.4	48.27	64.26	24	867	7.6	4.82	11.87
Chinese	50	1859	71.4	53.87	84.27	5	157	6.0	3.16	11.19
Indian	17	638	69.3	42.26	87.44	4	108	11.8	3.65	31.95
Bumiputera Sabah	1	45	100.0	100.00	100.00	-	-	-	-	-
Bumiputera Sarawak	2	61	100.0	100.00	100.00	-	-	-	-	-
Others	4	178	87.4	36.00	98.84	-	-	-	-	-

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
Melaka	110	4060	26.7	22.08	31.93	20	811	5.3	2.84	9.81
Locality of school										
Urban	33	1164	25.8	19.26	33.73	6	199	4.4	1.69	11.00
Rural	77	2896	27.1	21.25	33.84	14	612	5.7	2.64	11.99
Sex										
Boys	80	2653	28.0	23.05	33.49	16	605	6.4	3.61	11.03
Girls	30	1406	24.6	16.62	34.89	4	206	3.6	1.15	10.71
School category										
Primary	29	1294	27.4	17.61	39.94	11	525	11.1	5.61	20.79
Secondary	81	2766	26.4	21.68	31.77	9	286	2.7	1.18	6.20
Class										
Standard 4	10	448	22.6	9.31	45.44	6	343	17.3	7.80	34.23
Standard 5	12	474	28.3	16.05	45.00	3	108	6.5	0.81	36.79
Standard 6	7	372	34.6	21.92	50.01	2	73	6.8	1.16	31.41
Form 1	12	453	22.5	11.32	39.72	3	105	5.2	1.29	18.68
Form 2	14	522	32.0	18.65	49.18	1	32	1.9	0.31	11.29
Form 3	16	490	24.3	15.84	35.48	4	118	5.9	1.26	23.42
Form 4	22	684	28.9	19.31	40.78					
Form 5	17	616	25.3	15.79	37.87	1	31	1.3	0.22	7.00
Ethnicity										
Malay	91	3422	30.1	24.55	36.34	15	662	5.8	2.73	12.02
Chinese	15	492	18.9	11.20	30.08	3	95	3.6	0.73	16.23
Indian	3	121	13.1	4.51	32.52	2	54	5.8	1.40	21.22
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	26	12.6	1.16	64.00	-	-	-	-	-

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
Melaka	749	29683	56.2	52.50	59.92	307	12581	23.8	21.10	26.81
Locality of school										
Urban	212	7748	59.2	49.17	68.45	78	2990	22.8	17.72	28.89
Rural	537	21935	55.3	51.49	59.01	229	9592	24.2	20.99	27.66
Sex										
Boys	440	15582	65.7	62.30	69.00	131	4733	20.0	17.53	22.65
Girls	309	14102	48.5	42.80	54.27	176	7848	27.0	23.28	31.06
School category										
Primary	257	12120	61.2	58.26	64.00	83	4041	20.4	17.22	23.99
Secondary	492	17564	53.3	48.57	57.95	224	8540	25.9	22.68	29.42
Class										
Standard 4	82	3949	61.5	53.62	68.85	23	1123	17.5	13.90	21.76
Standard 5	105	4707	66.8	62.87	70.61	29	1331	18.9	15.12	23.36
Standard 6	70	3463	54.5	47.86	61.02	31	1588	25.0	19.58	31.35
Form 1	97	3646	53.8	46.05	61.42	53	2053	30.3	23.11	38.63
Form 2	102	3886	55.8	47.65	63.67	44	1722	24.7	18.06	32.87
Form 3	114	3776	55.5	49.14	61.75	44	1573	23.1	18.75	28.18
Form 4	85	2838	44.2	36.27	52.52	54	2045	31.9	26.31	38.04
Form 5	94	3418	56.9	52.36	61.28	29	1147	19.1	12.85	27.39
Ethnicity										
Malay	596	23841	54.9	50.40	59.39	255	10475	24.1	21.03	27.54
Chinese	104	3834	62.6	54.16	70.25	34	1337	21.8	14.97	30.65
Indian	36	1400	57.9	42.28	72.06	17	709	29.3	19.44	41.60
Bumiputera Sabah	4	205	70.5	26.47	94.06	-	-	-	-	-
Bumiputera Sarawak	3	114	100.0	100.00	100.00	-	-	-	-	-
Others	6	290	68.4	41.80	86.76	1	61	14.3	2.30	54.15

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
Melaka	66	2896	5.5	3.87	7.72	88	3677	7.0	5.67	8.53
Locality of school										
Urban	17	616	4.7	2.12	10.12	16	620	4.7	2.35	9.30
Rural	49	2280	5.7	3.92	8.34	72	3057	7.7	6.51	9.10
Sex										
Boys	27	978	4.1	2.62	6.44	36	1372	5.8	4.26	7.82
Girls	39	1918	6.6	4.32	9.96	52	2305	7.9	5.89	10.60
School category										
Primary	29	1452	7.3	4.49	11.74	35	1609	8.1	6.39	10.27
Secondary	37	1444	4.4	2.90	6.56	53	2068	6.3	4.69	8.34
Class										
Standard 4	18	918	14.3	8.44	23.20	7	355	5.5	2.92	10.23
Standard 5	6	226	3.2	1.82	5.63	13	534	7.6	4.31	13.02
Standard 6	5	307	4.8	2.04	11.03	15	720	11.3	7.36	17.06
Form 1	14	540	8.0	4.06	15.04	6	229	3.4	1.83	6.12
Form 2	7	283	4.1	1.93	8.33	15	606	8.7	5.83	12.80
Form 3	2	65	1.0	0.24	3.68	19	710	10.4	7.27	14.78
Form 4	8	280	4.4	2.20	8.46	9	338	5.3	2.91	9.34
Form 5	6	277	4.6	1.65	12.21	4	186	3.1	0.94	9.66
Ethnicity										
Malay	55	2436	5.6	3.87	8.09	76	3205	7.4	5.96	9.12
Chinese	8	340	5.5	2.48	11.92	9	330	5.4	2.50	11.22
Indian	1	44	1.8	0.22	13.63	2	100	4.1	0.98	15.90
Bumiputera Sabah	1	44	15.2	1.64	65.66	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	32	7.5	0.76	46.02	1	42	9.8	1.29	47.46

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
Melaka	34	1341	2.5	1.77	3.63	4	164	0.3	0.11	0.85
Locality of school										
Urban	9	332	2.5	1.23	5.15	1	42	0.3	0.05	2.11
Rural	25	1009	2.5	1.68	3.83	3	123	0.3	0.09	1.01
Sex										
Boys	14	477	2.0	1.09	3.68	1	30	0.1	0.01	1.07
Girls	20	864	3.0	1.79	4.90	3	135	0.5	0.14	1.49
School category										
Primary	8	340	1.7	0.96	3.04	-	-	-	-	-
Secondary	26	1001	3.0	2.03	4.52	4	164	0.5	0.20	1.26
Class										
Standard 4	2	75	1.2	0.36	3.71	-	-	-	-	-
Standard 5	3	124	1.8	0.48	6.32	-	-	-	-	-
Standard 6	3	141	2.2	0.95	5.11	-	-	-	-	-
Form 1	-	-	-	-	-	-	-	-	-	-
Form 2	2	79	1.1	0.28	4.46	1	42	0.6	0.08	4.46
Form 3	8	273	4.0	2.16	7.32	-	-	-	-	-
Form 4	7	261	4.1	1.71	9.42	2	78	1.2	0.28	5.10
Form 5	9	388	6.5	3.46	11.72	1	45	0.7	0.09	5.64
Ethnicity										
Malay	25	1008	2.3	1.56	3.43	3	116	0.3	0.08	0.91
Chinese	5	168	2.7	1.07	6.87	1	48	0.8	0.09	6.53
Indian	4	165	6.8	2.51	17.27	-	-	-	-	-
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	54	2166	4.1	2.34	7.10	7	265	0.5	0.20	1.26
Locality of school										
Urban	19	718	5.5	1.61	17.09	1	30	0.2	0.03	1.66
Rural	35	1448	3.6	2.11	6.24	6	235	0.6	0.22	1.60
Sex										
Boys	14	442	1.9	1.18	2.93	3	92	0.4	0.13	1.18
Girls	40	1725	5.9	3.20	10.73	4	172	0.6	0.17	2.02
School category										
Primary	6	252	1.3	0.61	2.63	-	-	-	-	-
Secondary	48	1914	5.8	3.37	9.82	7	265	0.8	0.35	1.82
Class										
Standard 4										
Standard 5	3	119	1.7	0.60	4.63	-	-	-	-	-
Standard 6	3	133	2.1	0.96	4.49	-	-	-	-	-
Form 1	7	268	4.0	1.15	12.71	1	39	0.6	0.07	4.38
Form 2	7	294	4.2	1.86	9.30	1	51	0.7	0.09	5.57
Form 3	10	373	5.5	2.27	12.65	1	30	0.4	0.06	3.21
Form 4	12	457	7.1	4.65	10.79	3	117	1.8	0.43	7.46
Form 5	12	522	8.7	4.77	15.28	1	28	0.5	0.06	3.71
Ethnicity										
Malay	51	2052	4.7	2.67	8.24	7	265	0.6	0.24	1.52
Chinese	2	72	1.2	0.29	4.65	-	-	-	-	-
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	1	42	14.4	1.54	64.22	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	228	8323	55.7	48.86	62.29	105	3924	26.3	21.94	31.07
Locality of school										
Urban	83	2799	62.0	53.90	69.47	32	1085	24.0	16.28	34.00
Rural	145	5524	52.9	44.39	61.33	73	2839	27.2	22.30	32.75
Sex										
Boys	162	5273	55.3	48.64	61.68	74	2509	26.3	21.53	31.68
Girls	66	3050	56.4	42.04	69.81	31	1416	26.2	18.81	35.20
School category										
Primary	46	2137	48.2	33.87	62.79	31	1415	31.9	26.11	38.33
Secondary	182	6186	58.8	52.21	65.17	74	2509	23.9	18.85	29.73
Class										
Standard 4	17	818	44.1	26.78	63.04	11	563	30.4	25.34	36.00
Standard 5	17	708	45.4	36.06	55.15	13	520	33.4	21.81	47.31
Standard 6	12	611	59.7	24.10	87.32	7	332	32.4	12.64	61.45
Form 1	29	1068	51.0	36.44	65.46	20	727	34.8	24.68	46.40
Form 2	27	993	62.9	49.72	74.33	8	288	18.3	10.46	29.90
Form 3	35	1070	54.1	36.53	70.77	19	588	29.7	18.60	43.92
Form 4	42	1335	56.4	45.70	66.48	18	581	24.5	17.97	32.52
Form 5	49	1720	68.9	54.08	80.66	9	325	13.0	7.08	22.72
Ethnicity										
Malay	174	6476	57.7	50.32	64.73	78	2917	26.0	20.62	32.17
Chinese	40	1302	50.0	27.68	72.35	19	708	27.2	16.92	40.73
Indian	8	296	36.4	15.72	63.81	7	266	32.8	19.96	48.75
Bumiputera Sabah	1	45	100.0	100.00	100.00	-	-	-	-	-
Bumiputera Sarawak	1	27	44.8	3.75	94.42	1	33	55.2	5.58	96.25
Others	4	178	87.4	36.00	98.84	-	-	-	-	-

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	41	1521	10.2	7.34	13.94	30	1180	7.9	5.02	12.20
Locality of school										
Urban	11	344	7.6	3.88	14.40	8	287	6.4	2.57	14.87
Rural	30	1177	11.3	7.89	15.88	22	893	8.6	5.12	13.98
Sex										
Boys	29	899	9.4	6.22	14.02	24	863	9.0	5.35	14.86
Girls	12	622	11.5	6.47	19.65	6	317	5.9	2.60	12.74
School category										
Primary	9	437	9.8	4.23	21.25	8	447	10.1	3.92	23.49
Secondary	32	1085	10.3	7.54	13.96	22	733	7.0	4.50	10.66
Class										
Standard 4	5	294	15.9	6.02	35.74	3	178	9.6	3.57	23.31
Standard 5	2	61	3.9	1.00	14.24	5	269	17.3	5.77	41.54
Standard 6	2	81	7.9	1.51	32.42	-	-	-	-	-
Form 1	4	138	6.6	2.29	17.58	4	159	7.6	3.02	17.84
Form 2	4	146	9.2	3.72	21.06	4	153	9.7	4.08	21.24
Form 3	6	182	9.2	3.75	20.90	5	137	6.9	2.54	17.48
Form 4	10	339	14.3	5.99	30.43	4	114	4.8	1.70	12.77
Form 5	8	280	11.2	6.97	17.56	5	171	6.9	3.30	13.68
Ethnicity										
Malay	28	1065	9.5	6.32	13.99	20	769	6.8	4.33	10.66
Chinese	8	306	11.8	7.31	18.41	6	286	11.0	4.05	26.51
Indian	4	124	15.3	5.59	35.61	4	126	15.5	5.89	34.89
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	26	12.6	1.16	64.00	-	-	-	-	-

3.4 Meal pattern among adolescents (10 to 17 years old) in Melaka

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

3.4.1 Introduction

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

3.4.2 Objective

General objective:

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

Specific objective:

- To determine the prevalence consumption of individual main meals (breakfast, lunch, dinner) and intermeals (during recess, afternoon tea and heavy meal after dinner).
- To identify the sources of food and/or drink consume for main meals (breakfast, lunch, dinner) and intermeals (during recess, afternoon tea and heavy meal after dinner).
- To identify reasons for skipping main meals (breakfast, lunch and dinner).
- To determine the prevalence of practice bringing food or drinks to school.
- To identify common types of food or drink brought to school.
- To determine the prevalence of eating out in adolescents.
- To determine the prevalence of snacking and practice of buying snack out of school area.
- To identify common type of snack consumed and bought out of school area.
- To identify sources 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 8.00 am.
- **Lunch:** defined as a foods consumed or meal between 11.00 am to 3.00 pm.
- **Dinner:** defined as foods consumed or meal between 6.00 pm to 10.00 pm.
- **Afternoon tea:** defined as food and/ or drinks taken between lunch and dinner, between 3.00 pm to 6.00 pm.
- **Heavy meal after dinner:** food taken at night after the dinner after 10.00 pm. Examples of foods that are considered heavy meal is high calorie food such as *nasi lemak, roti canai, fried mee, burger, fried chicken* and so on. It does not include two small snacks like crackers and/or a glass of milk.
- **Skipping meal:** the omission or lack of consumption of one or more of the traditional main meals (breakfast, lunch or dinner) throughout the day.
- **Dieting:** to limit food intake in terms of the amount of frequency of eating for weight loss purposes.
- **Fast food:** meant in this question, including ready-to-eat food. Ready-to-eat foods are foods that can be eaten immediately after purchase. It consists of cooked food, food either hot or cold foods and foods that can be eaten without further cooking or heating.
- **Snacking:** consumption of energy intake outside of traditional meals such as breakfast, lunch, and dinner.
- **Eating during school break time:** Eating time between the intervals of classes after school started.
- **Eating out:** either eating at restaurant or hawker stall and does not includes buying outside food and eat it at home.
- **Snack food:** snack food such as bun, biscuits, fruits, nuts, crackers, ice cream, junk foods, pickles, flavored/carbonated drink, fries/ nugget/sausage, candy or chocolate.

3.4.4 Findings

There were 2,682 respondents that represented 106,120 adolescents aged 10 to 17 years old in Melaka who responded to this module. About 35.3% (95% CI: 31.01, 39.83), 47.9% (95% CI: 42.75, 53.11) and 52.8% (95% CI: 47.00, 58.49) had consumed breakfast, lunch and dinner seven days per week respectively. Majority of adolescents in Melaka reported having their source of food for main meals from home. Half of the adolescents in this state tend to skip the main meal due to poor appetite. About 64.3% (95% CI: 59.17, 69.18) adolescents in Melaka reported that they took meals during recess everyday (5 days per week) and the main source of the meal was from the school canteen. There were 4.9% (95% CI: 3.94, 6.14) adolescents in Melaka having daily heavy meal after dinner. About 1.7% (95% CI: 1.15, 2.52) adolescents in Melaka consumed fast food on a daily basis. During the school day, 10.6% (95% CI: 8.23, 13.48) and 54.9% (95% CI: 49.45, 60.15) of adolescents practised bringing food and drink respectively everyday. The most common food brought to school was nasi lemak/fried rice/mixed rice at 40.8% (95% CI: 36.99, 44.82) and the most common drink brought to school was plain water at 93.1% (95% CI: 91.14, 94.70). Most of the adolescents also spent their pocket money for buying food or drink which is reported at 62.3% (95% CI: 59.42, 65.05). About 3.4% (95% CI: 2.41, 4.87) of adolescents in Melaka reported eating out as frequent as 7 times or more in a week. Majority of adolescents in Melaka took snack food one to three times in a week and the most common snack food consumed was bread/bun/sandwich. Three out of four adolescents in Melaka had bought food or drinks out of the school area at least one time in a week. The analysis also revealed that, flavoured/carbonated drink was the most common type of food or drink that adolescents in Melaka bought out of the school area. Television followed by social media were the two main medias source that influenced the dietary pattern of the adolescents in Melaka.

3.4.5 Discussions/Conclusion

The prevalence of daily breakfast, lunch and dinner among adolescents in Melaka was high compared to majority of the states in Malaysia. However, there are still concerns when half of them skip main meals due to poor appetite. Majority of adolescents in Melaka consumed food and/or drink during recess and the school canteen is the favourite place for them to obtain the food and/or drink. For adolescents who practise bringing food to school, the type of food that they brought was also an important issue to highlight. Most of them practised bringing food that was categorized as high calorie. However, there is still some good habits seen when majority of adolescent practised bringing plain water to school. Food and/or drinks that they bought out of the school area is also an important issue to highlight as our analysis found that flavoured and carbonated drinks are the popular drinks that adolescents in Melaka brought. An interactive advertisement and promotion on healthy food choice should be placed on television and social media as these are media that can influence adolescents' dietary patterns.

3.4.6 Recommendation

Taking evidence 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 stakeholder must work together. The current adolescent is the future adult, thus, a healthier adolescent generation is warranted for a healthier nation. As most of adolescents are school-aged individuals, therefore, more health promotion such as healthy eating habits in house, school and eating out must be addressed systematically. Positive behavioural changes on dietary pattern need a longer time but the support and intervention must be continuous. Ministry of Health and Ministry of Education together with support and cooperation from Parents and Teacher Association and also professional bodies (Nutrition Society of Malaysia, Malaysian Dietitians' Association, Malaysian Association for the Study of Obesity), that are related to diet and lifestyle should work hand-in-hand to educate and empower the adolescent on proper nutrition intake daily especially on main meals.

References

1. Leech RM, Worsley A, Timperio A, McNaughton SA. Understanding meal patterns: definitions, methodology and impact on nutrient intake and diet quality. *Nutrition research reviews*. 2015 Jun;28(1):1-21.
2. Delormier T, Frohlich KL, Potvin L. Food and eating as social practice—understanding eating patterns as social phenomena and implications for public health. *Sociology of health & illness*. 2009 Mar 1;31(2):215-28.
3. Fitzgerald A, Heary C, Nixon E, Kelly C. Factors influencing the food choices of Irish children and adolescents: a qualitative investigation. *Health promotion international*. 2010 Apr 10;25(3):289-98.
4. López-Guimerà G, Levine MP, Sánchez-Carracedo D, Fauquet J. Influence of mass media on body image and eating disordered attitudes and behaviors in females: A review of effects and processes. *Media Psychology*. 2010 Nov 30;13(4):387-416.
5. Croezen S, Visscher TL, Ter Bogt NC, Veling ML, Haveman-Nies A: Skipping breakfast, alcohol consumption and physical inactivity as risk factors for overweight and obesity in adolescents: results of the E-MOVO project. *Eur J Clin Nutr* 2009, 63:405-412.
6. Sjöberg A, L Hallberg L, D Höglund D and L Hulthén L. 2003. Meal pattern, food choice, nutrient intake and lifestyle factors in The Göteborg Adolescence Study. *European Journal of Clinical Nutrition* 57, 1569–1578. doi:10.1038/sj.ejcn.1601726
7. Maxwell MA, Cole DA. Weight change and appetite disturbance as symptoms of adolescent depression: Toward an integrative biopsychosocial model. *Clinical Psychology Review*. 2009 Apr 30;29(3):260-73.
8. Garis Panduan Perlaksanaan Pemakanan Sihat di Sekolah. Bahagian Pemakanan, Kementerian Kesihatan Malaysia.

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

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	955	37455	35.3	31.01	39.83	1488	59018	55.6	51.35	59.80
Locality of school										
Urban	364	12717	44.1	38.68	49.69	387	14297	49.6	42.64	56.56
Rural	591	24738	32.0	27.47	36.91	1101	44722	57.9	53.11	62.47
Sex										
Boys	591	20529	38.7	33.82	43.90	829	29024	54.8	49.66	59.78
Girls	364	16927	31.9	26.92	37.25	659	29994	56.5	51.79	61.01
Ethnicity										
Malay	652	25973	31.6	27.50	36.05	1203	48086	58.5	54.61	62.36
Chinese	234	8812	51.9	45.68	58.05	193	7215	42.5	37.61	47.51
Indian	54	2085	38.8	30.41	47.90	72	2831	52.7	42.64	62.51
Bumiputera Sabah	4	153	31.4	7.57	71.91	5	260	53.2	21.89	82.21
Bumiputera Sarawak	3	103	50.8	28.37	72.90	2	61	30.1	8.16	67.70
Others	8	329	35.2	12.14	68.20	13	566	60.6	31.16	83.97
School level										
Primary school	270	13573	34.8	28.82	41.36	495	22977	59.0	50.78	66.67
Secondary school	685	23882	35.6	29.86	41.72	993	36041	53.7	49.28	58.02
Class										
Standard 4	102	5352	40.7	29.35	53.08	145	6852	52.1	37.03	66.75
Standard 5	87	3902	30.5	22.92	39.31	189	8140	63.6	55.01	71.45
Standard 6	81	4319	33.2	25.86	41.40	161	7984	61.3	53.74	68.40
Form 1	150	5487	40.4	30.89	50.72	191	7267	53.5	43.10	63.66
Form 2	129	4863	36.4	28.84	44.63	179	6883	51.5	46.94	55.98
Form 3	150	4883	36.4	28.72	44.91	210	6944	51.8	45.02	58.51
Form 4	129	4277	32.3	24.75	40.87	212	7329	55.3	48.53	61.91
Form 5	127	4372	32.3	26.96	38.09	201	7619	56.2	51.45	60.92
School session										
Morning session	488	19235	35.1	29.88	40.76	777	30343	55.4	49.66	61.02
Evening session	24	996	23.7	15.55	34.27	67	2835	67.3	58.17	75.31
Morning and evening session	442	17176	36.5	31.89	41.37	643	25807	54.8	50.55	59.05
BMI-for-age status (BAZ)										
Thinness (<-2sd)	70	2680	45.1	35.37	55.24	81	3149	53.0	43.46	62.32
Normal (≥-2sd - ≤+1sd)	589	23218	35.6	30.69	40.87	905	35896	55.1	49.85	60.18
Overweight (>+1sd - ≤+2sd)	167	6330	38.2	32.12	44.59	229	9105	54.9	49.06	60.59
Obese (>+2sd)	125	5101	28.0	23.43	33.11	271	10796	59.3	53.92	64.46
Height-for-age status (HAZ)										
Stunting (<-2sd)	58	2177	32.2	24.29	41.31	93	4023	59.5	49.67	68.69
Normal (≥-2sd)	897	35279	35.5	30.95	40.34	1395	54995	55.3	50.70	59.90

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
Melaka	239	9646	9.1	7.38	11.15
Locality of school					
Urban	52	1814	6.3	4.46	8.80
Rural	187	7832	10.1	8.10	12.61
Sex					
Boys	102	3444	6.5	5.09	8.27
Girls	137	6203	11.7	9.14	14.80
Ethnicity					
Malay	196	8082	9.8	7.73	12.44
Chinese	28	954	5.6	3.42	9.10
Indian	11	458	8.5	4.11	16.85
Bumiputera Sabah	2	75	15.4	2.24	58.99
Bumiputera Sarawak	1	39	19.1	2.76	66.20
Others	1	39	4.1	0.66	21.96
School level					
Primary school	48	2422	6.2	4.19	9.12
Secondary school	191	7224	10.8	8.99	12.83
Class					
Standard 4	18	955	7.3	4.20	12.24
Standard 5	16	751	5.9	3.94	8.67
Standard 6	14	717	5.5	3.53	8.49
Form 1	22	822	6.1	3.70	9.75
Form 2	39	1626	12.2	8.59	16.94
Form 3	45	1578	11.8	8.60	15.91
Form 4	46	1643	12.4	9.41	16.16
Form 5	39	1556	11.5	7.96	16.28
School session					
Morning session	127	5184	9.5	7.11	12.50
Evening session	9	380	9.0	5.61	14.20
Morning and evening session	103	4083	8.7	6.54	11.42
BMI-for-age status (BAZ)					
Thinness (<-2sd)	3	113	1.9	0.59	5.98
Normal (≥-2sd - ≤+1sd)	147	6070	9.3	7.49	11.52
Overweight (>+1sd - ≤+2sd)	30	1154	7.0	4.62	10.34
Obese (>+2sd)	59	2310	12.7	9.22	17.20
Height-for-age status (HAZ)					
Stunting (<-2sd)	15	557	8.2	4.35	15.08
Normal (≥-2sd)	224	9089	9.1	7.44	11.20

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Socio-demographic Characteristics	Prepared at home					School canteen				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	1713	68216	71.1	63.15	77.98	313	12883	13.4	10.08	17.68
Locality of school										
Urban	487	17301	64.4	45.87	79.47	73	2937	10.9	6.16	18.68
Rural	1226	50916	73.7	65.87	80.33	240	9946	14.4	10.41	19.59
Sex										
Boys	965	33920	68.7	61.19	75.36	179	6630	13.4	9.44	18.77
Girls	748	34297	73.7	63.96	81.57	134	6253	13.4	9.96	17.88
Ethnicity										
Malay	1252	50652	68.8	59.46	76.90	249	10245	13.9	10.01	19.04
Chinese	339	12711	79.7	73.41	84.88	40	1670	10.5	7.56	14.35
Indian	98	3851	78.3	70.25	84.69	16	602	12.2	7.87	18.55
Bumiputera Sabah	5	231	56.0	18.42	87.72	3	137	33.2	10.58	67.54
Bumiputera Sarawak	4	130	79.4	41.57	95.41	1	34	20.6	4.59	58.43
Others	15	642	71.7	50.51	86.26	4	196	21.9	8.29	46.46
School level										
Primary school	564	27092	74.6	70.66	78.26	149	6909	19.0	15.07	23.76
Secondary school	1149	41124	69.0	56.45	79.24	164	5974	10.0	6.68	14.77
Class										
Standard 4	181	9029	74.5	65.86	81.60	50	2334	19.3	12.25	28.97
Standard 5	195	8481	70.9	66.64	74.85	55	2406	20.1	14.80	26.74
Standard 6	188	9582	78.4	71.86	83.80	44	2169	17.8	11.90	25.64
Form 1	249	9353	73.6	60.41	83.53	33	1228	9.7	5.04	17.72
Form 2	214	8156	69.9	57.83	79.72	42	1562	13.4	8.29	20.90
Form 3	254	8335	70.9	59.90	79.84	40	1338	11.4	7.09	17.76
Form 4	223	7713	67.2	48.22	81.85	25	867	7.6	3.99	13.85
Form 5	209	7567	63.1	43.53	79.15	24	980	8.2	4.89	13.35
School session										
Morning session	927	36369	73.9	67.55	79.34	175	7148	14.5	9.86	20.87
Evening session	66	2768	72.3	62.43	80.33	9	422	11.0	5.96	19.45
Morning and evening session	718	28998	67.8	55.26	78.23	129	5313	12.4	9.06	16.81
BMI-for-age status (BAZ)										
Thinness (<-2sd)	115	4429	76.6	68.47	83.11	21	813	14.1	8.89	21.54
Normal (≥-2sd - ≤+1sd)	1062	42553	72.4	63.64	79.72	186	7585	12.9	9.52	17.26
Overweight (>+1sd - ≤+2sd)	260	10147	65.9	54.76	75.50	49	2045	13.3	9.22	18.75
Obese (>+2sd)	272	10960	69.6	61.59	76.58	57	2439	15.5	10.73	21.85
Height-for-age status (HAZ)										
Stunting (<-2sd)	96	4017	65.7	51.64	77.50	26	1038	17.0	10.86	25.56
Normal (≥-2sd)	1617	64200	71.5	63.83	78.10	287	11845	13.2	9.91	17.36

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	146	5480	5.7	4.33	7.51	221	7904	8.2	2.70	22.50
Locality of school										
Urban	53	1825	6.8	3.80	11.88	124	4469	16.6	3.63	51.45
Rural	93	3655	5.3	3.97	7.02	97	3435	5.0	1.04	20.72
Sex										
Boys	101	3378	6.8	4.88	9.52	145	4626	9.4	3.19	24.47
Girls	45	2102	4.5	3.20	6.35	76	3278	7.0	1.70	24.91
Ethnicity										
Malay	94	3706	5.0	3.72	6.78	218	7809	10.6	3.51	27.95
Chinese	41	1397	8.8	5.05	14.78	1	36	0.2	0.02	2.02
Indian	8	275	5.6	2.40	12.49	2	60	1.2	0.27	5.33
Bumiputera Sabah	1	45	10.9	1.55	48.66					
Bumiputera Sarawak										
Others	2	58	6.4	1.50	23.65					
School level										
Primary school	35	1645	4.5	3.44	5.95	2	117	0.3	0.09	1.13
Secondary school	111	3835	6.4	4.48	9.15	219	7788	13.1	4.45	32.64
Class										
Standard 4	10	439	3.6	1.87	6.92	1	53	0.4	0.07	2.83
Standard 5	18	783	6.5	4.27	9.91	1	64	0.5	0.07	3.85
Standard 6	7	423	3.5	1.83	6.44					
Form 1	19	679	5.3	2.61	10.61	36	1338	10.5	2.77	32.68
Form 2	21	802	6.9	3.75	12.25	24	943	8.1	2.23	25.34
Form 3	26	813	6.9	3.84	12.13	32	1084	9.2	2.97	25.19
Form 4	20	693	6.0	3.27	10.89	63	2019	17.6	4.82	47.40
Form 5	25	849	7.1	4.48	11.00	64	2402	20.0	6.55	47.23
School session										
Morning session	80	2926	5.9	4.36	8.05	60	2165	4.4	1.35	13.38
Evening session	11	437	11.4	8.11	15.85	2	90	2.3	0.31	15.84
Morning and evening session	55	2117	5.0	3.50	6.96	159	5649	13.2	4.10	35.17
BMI-for-age status (BAZ)										
Thinness (<-2sd)	12	479	8.3	4.53	14.68	2	63	1.1	0.24	4.77
Normal (≥-2sd - ≤+1sd)	71	2666	4.5	3.26	6.28	146	5137	8.7	2.77	24.32
Overweight (>+1sd - ≤+2sd)	31	1162	7.5	5.26	10.71	48	1791	11.6	4.01	29.33
Obese (>+2sd)	32	1173	7.4	4.79	11.40	25	914	5.8	1.91	16.30
Height-for-age status (HAZ)										
Stunting (<-2sd)	5	156	2.6	1.12	5.74	20	776	12.7	3.66	35.77
Normal (≥-2sd)	141	5323	5.9	4.48	7.81	201	7128	7.9	2.62	21.63

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

Socio-demographic Characteristics	Source of food for breakfast				
	Count	Estimated Population	Prevalence (%)	Others	
				95% CI Lower	95% CI Upper
Melaka	36	1421	1.5	0.99	2.21
Locality of school					
Urban	9	321	1.2	0.90	1.58
Rural	27	1100	1.6	0.95	2.65
Sex					
Boys	24	814	1.6	0.99	2.73
Girls	12	607	1.3	0.69	2.45
Ethnicity					
Malay	31	1166	1.6	1.04	2.41
Chinese	3	126	0.8	0.29	2.15
Indian	2	129	2.6	0.58	11.02
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
School level					
Primary school	10	530	1.5	0.61	3.43
Secondary school	26	891	1.5	1.02	2.20
Class					
Standard 4	4	260	2.1	0.66	6.78
Standard 5	5	226	1.9	0.86	4.08
Standard 6	1	44	0.4	0.05	2.36
Form 1	3	118	0.9	0.33	2.57
Form 2	5	206	1.8	0.66	4.65
Form 3	6	191	1.6	0.68	3.83
Form 4	6	184	1.6	0.74	3.44
Form 5	6	192	1.6	0.56	4.50
School session					
Morning session	15	624	1.3	0.69	2.33
Evening session	3	114	3.0	1.30	6.62
Morning and evening session	18	683	1.6	0.94	2.71
BMI-for-age status (BAZ)					
Thinness (<-2sd)					
Normal (≥-2sd - ≤+1sd)	21	834	1.4	0.78	2.57
Overweight (>+1sd - ≤+2sd)	7	255	1.7	0.67	4.03
Obese (>+2sd)	6	260	1.6	0.74	3.66
Height-for-age status (HAZ)					
Stunting (<-2sd)	3	124	2.0	0.65	6.17
Normal (≥-2sd)	33	1297	1.4	0.94	2.22

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	151	5701	9.2	7.40	11.41	659	26776	43.2	39.84	46.71
Locality of school										
Urban	30	1062	7.3	5.46	9.73	156	5873	40.4	35.97	45.06
Rural	121	4639	9.8	7.59	12.53	503	20903	44.1	40.03	48.27
Sex										
Boys	92	3118	10.7	8.28	13.83	337	12039	41.5	37.66	45.40
Girls	59	2583	7.9	5.86	10.45	322	14737	44.8	40.48	49.19
Ethnicity										
Malay	131	4960	9.6	7.49	12.19	551	22574	43.6	40.10	47.23
Chinese	14	491	7.2	3.90	13.01	71	2609	38.4	33.27	43.89
Indian	5	206	8.4	4.30	15.67	29	1192	48.5	36.91	60.16
Bumiputera Sabah	1	45	15.5	2.06	61.48	2	123	42.5	8.37	85.66
Bumiputera Sarawak						1	34	33.9	3.53	87.84
Others						5	244	44.9	25.10	66.50
School level										
Primary school	38	1617	7.3	4.96	10.50	222	10596	47.6	40.60	54.64
Secondary school	113	4084	10.3	8.12	12.99	437	16180	40.8	38.30	43.37
Class										
Standard 4	8	344	4.9	2.42	9.75	82	3923	56.2	49.53	62.59
Standard 5	19	792	10.3	5.30	18.99	77	3460	44.9	35.26	54.88
Standard 6	11	481	6.3	3.09	12.60	63	3213	42.4	34.76	50.41
Form 1	19	716	9.7	4.98	17.98	94	3605	48.8	43.63	53.91
Form 2	16	669	8.7	4.82	15.35	94	3625	47.4	38.28	56.65
Form 3	29	923	12.3	7.35	19.79	82	2750	36.6	30.51	43.12
Form 4	27	957	11.3	8.93	14.18	98	3424	40.4	33.85	47.30
Form 5	22	819	9.5	5.77	15.30	69	2776	32.3	24.94	40.56
School session										
Morning session	73	2671	8.4	6.46	10.78	365	14643	45.9	41.20	50.66
Evening session	17	707	25.6	18.10	34.98	27	1164	42.2	34.50	50.27
Morning and evening session	61	2323	8.5	6.80	10.67	267	10969	40.3	36.50	44.22
BMI-for-age status (BAZ)										
Thinness (<-2sd)	12	447	16.6	9.58	27.13	29	1127	41.7	32.67	51.42
Normal (≥-2sd - ≤+1sd)	100	3711	9.7	7.52	12.47	417	17017	44.6	40.76	48.42
Overweight (>+1sd - ≤+2sd)	14	541	5.9	3.16	10.62	98	3958	43.0	35.04	51.25
Obese (>+2sd)	25	1003	8.5	5.56	12.89	115	4674	39.8	32.54	47.54
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	265	5.8	2.74	11.82	48	2121	46.3	37.24	55.62
Normal (≥-2sd)	143	5436	9.5	7.60	11.77	611	24655	43.0	39.58	46.48

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	551	21937	35.4	32.37	38.61	81	3063	4.9	3.77	6.46
Locality of school										
Urban	156	5819	40.1	36.69	43.52	21	750	5.2	3.25	8.11
Rural	395	16118	34.0	30.56	37.64	60	2313	4.9	3.52	6.73
Sex										
Boys	289	10063	34.7	29.94	39.72	50	1670	5.8	4.30	7.66
Girls	262	11875	36.1	33.01	39.31	31	1393	4.2	3.14	5.70
Ethnicity										
Malay	447	18016	34.8	31.41	38.40	72	2784	5.4	4.08	7.06
Chinese	79	2923	43.1	34.14	52.49	4	113	1.7	0.44	6.08
Indian	16	647	26.3	19.73	34.11	4	136	5.5	2.29	12.77
Bumiputera Sabah	1	47	16.3	3.04	54.54					
Bumiputera Sarawak	2	66	66.1	12.16	96.47					
Others	6	238	43.8	23.84	65.94	1	30	5.5	0.49	40.70
School level										
Primary school	170	8001	35.9	29.55	42.84	21	932	4.2	2.96	5.88
Secondary school	381	13936	35.2	32.12	38.31	60	2131	5.4	3.81	7.54
Class										
Standard 4	41	2088	29.9	21.07	40.51	5	213	3.0	1.02	8.69
Standard 5	63	2592	33.6	24.81	43.74	11	497	6.4	4.11	9.97
Standard 6	66	3321	43.8	37.90	49.94	5	222	2.9	1.54	5.51
Form 1	59	2254	30.5	22.57	39.77	11	406	5.5	3.02	9.80
Form 2	56	2166	28.3	22.04	35.54	13	502	6.6	3.52	11.88
Form 3	80	2734	36.4	29.27	44.10	12	398	5.3	2.99	9.19
Form 4	86	3020	35.6	29.82	41.89	14	465	5.5	3.14	9.41
Form 5	100	3762	43.7	36.52	51.19	10	361	4.2	2.17	7.93
School session										
Morning session	271	10673	33.4	29.28	37.90	41	1580	5.0	3.83	6.38
Evening session	8	341	12.4	7.53	19.65	5	211	7.7	3.36	16.47
Morning and evening session	271	10890	40.0	36.68	43.43	35	1272	4.7	3.18	6.81
BMI-for-age status (BAZ)										
Thinness (<-2sd)	22	925	34.3	23.40	47.06	2	53	2.0	0.47	7.97
Normal (≥-2sd - ≤+1sd)	323	12882	33.7	30.80	36.80	36	1430	3.7	2.74	5.09
Overweight (>+1sd - ≤+2sd)	91	3550	38.5	31.83	45.69	18	692	7.5	4.19	13.11
Obese (>+2sd)	114	4542	38.7	30.82	47.16	25	888	7.6	4.49	12.46
Height-for-age status (HAZ)										
Stunting (<-2sd)	40	1715	37.4	28.93	46.82	2	85	1.9	0.46	7.17
Normal (≥-2sd)	511	20222	35.3	32.01	38.67	79	2978	5.2	3.94	6.82

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	37	1498	2.4	1.41	4.12	79	2942	4.8	3.20	7.01
Locality of school										
Urban	7	250	1.7	0.88	3.33	23	772	5.3	2.84	9.73
Rural	30	1248	2.6	1.41	4.87	56	2170	4.6	2.81	7.37
Sex										
Boys	25	936	3.2	1.79	5.74	39	1197	4.1	2.52	6.69
Girls	12	563	1.7	0.89	3.28	40	1745	5.3	3.37	8.27
Ethnicity										
Malay	29	1170	2.3	1.33	3.82	57	2235	4.3	2.81	6.59
Chinese	3	138	2.0	0.54	7.41	16	512	7.5	4.12	13.41
Indian	4	159	6.5	2.59	15.21	4	120	4.9	1.97	11.60
Bumiputera Sabah						2	75	25.8	4.26	73.08
Bumiputera Sarawak										
Others	1	32	5.8	0.52	42.16					
School level										
Primary school	21	915	4.1	2.17	7.65	5	212	1.0	0.46	1.98
Secondary school	16	583	1.5	0.79	2.74	74	2730	6.9	5.26	8.97
Class										
Standard 4	8	381	5.5	2.14	13.22	1	36	0.5	0.09	3.09
Standard 5	8	336	4.4	1.99	9.28	1	34	0.4	0.06	2.92
Standard 6	5	198	2.6	0.89	7.41	3	142	1.9	0.73	4.70
Form 1	3	120	1.6	0.58	4.46	8	292	3.9	1.70	8.90
Form 2	5	183	2.4	1.02	5.49	12	508	6.6	3.44	12.41
Form 3	4	126	1.7	0.46	5.85	17	587	7.8	5.14	11.70
Form 4	2	57	0.7	0.17	2.72	15	552	6.5	4.09	10.23
Form 5	2	97	1.1	0.35	3.54	22	791	9.2	5.93	13.98
School session										
Morning session	23	943	3.0	1.62	5.35	39	1397	4.4	2.51	7.54
Evening session	3	121	4.4	1.75	10.68	5	214	7.8	4.43	13.23
Morning and evening session	11	433	1.6	0.99	2.55	35	1332	4.9	3.18	7.45
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	62	2.3	0.27	16.82	3	86	3.2	0.93	10.32
Normal (≥-2sd - ≤+1sd)	24	1001	2.6	1.54	4.42	57	2148	5.6	3.72	8.42
Overweight (>+1sd - ≤+2sd)	4	156	1.7	0.63	4.49	8	317	3.4	1.16	9.79
Obese (>+2sd)	7	280	2.4	1.02	5.46	10	358	3.1	1.42	6.41
Height-for-age status (HAZ)										
Stunting (<-2sd)	2	84	1.8	0.40	8.00	8	309	6.7	2.89	14.96
Normal (≥-2sd)	35	1414	2.5	1.40	4.32	71	2633	4.6	3.00	6.96

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	1306	50821	47.9	42.75	53.11	1288	51690	48.7	43.70	53.77
Locality of school										
Urban	444	15708	54.5	45.94	62.77	332	12132	42.1	34.30	50.28
Rural	862	35113	45.4	39.71	51.31	956	39558	51.2	45.56	56.81
Sex										
Boys	743	25161	47.5	41.50	53.66	730	26065	49.2	43.45	55.07
Girls	563	25660	48.3	42.35	54.23	558	25625	48.2	42.07	54.38
Ethnicity										
Malay	939	37297	45.4	40.43	50.48	1048	42216	51.4	46.46	56.30
Chinese	290	10556	62.3	53.66	70.17	148	5753	33.9	27.58	40.93
Indian	61	2330	43.3	32.41	54.97	71	2813	52.3	42.32	62.18
Bumiputera Sabah	5	206	42.2	18.30	70.37	6	282	57.8	29.63	81.70
Bumiputera Sarawak	2	61	30.2	7.08	71.10	3	103	50.7	9.21	91.26
Others	9	372	39.8	15.84	69.92	12	523	56.1	26.31	82.00
School level										
Primary school	319	15480	39.8	36.91	42.68	465	21972	56.4	51.96	60.81
Secondary school	987	35342	52.6	46.28	58.89	823	29717	44.3	38.44	50.22
Class										
Standard 4	94	4812	36.8	31.24	42.75	156	7595	58.1	50.64	65.21
Standard 5	116	5155	40.2	34.91	45.63	171	7406	57.7	51.70	63.45
Standard 6	109	5513	42.3	37.70	47.12	138	6972	53.5	47.22	59.76
Form 1	199	7356	54.0	41.99	65.61	157	5970	43.8	32.73	55.61
Form 2	176	6772	50.6	40.74	60.50	161	6198	46.3	36.63	56.35
Form 3	224	7478	55.6	47.39	63.49	166	5451	40.5	33.24	48.24
Form 4	190	6468	49.0	41.53	56.51	183	6270	47.5	41.10	53.98
Form 5	198	7268	53.8	47.20	60.22	156	5829	43.1	37.39	49.06
School session										
Morning session	693	26905	49.1	42.91	55.29	655	26045	47.5	41.39	53.72
Evening session	44	1755	41.7	30.33	53.96	54	2377	56.5	43.16	68.87
Morning and evening session	568	22113	47.1	41.22	52.99	578	23235	49.4	43.84	55.07
BMI-for-age status (BAZ)										
Thinness (<-2sd)	83	3164	52.8	41.48	63.87	68	2696	45.0	34.03	56.50
Normal (≥-2sd - ≤+1sd)	799	31298	48.0	42.43	53.63	795	31877	48.9	43.28	54.54
Overweight (>+1sd - ≤+2sd)	212	8064	48.6	41.81	55.46	200	7963	48.0	41.01	55.08
Obese (>+2sd)	207	8136	44.9	39.46	50.46	224	9115	50.3	44.71	55.89
Height-for-age status (HAZ)										
Stunting (<-2sd)	71	2902	42.9	32.57	53.99	88	3603	53.3	42.36	63.98
Normal (≥-2sd)	1235	47919	48.2	43.12	53.40	1200	48087	48.4	43.36	53.49

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
Melaka	87	3577	3.4	2.56	4.43
Locality of school					
Urban	27	988	3.4	2.44	4.79
Rural	60	2589	3.4	2.34	4.78
Sex					
Boys	47	1699	3.2	2.37	4.33
Girls	40	1879	3.5	2.45	5.08
Ethnicity					
Malay	64	2627	3.2	2.34	4.36
Chinese	16	642	3.8	2.08	6.81
Indian	5	231	4.3	2.03	8.89
Bumiputera Sabah					
Bumiputera Sarawak	1	39	19.1	2.76	66.20
Others	1	39	4.1	0.66	21.96
School level					
Primary school	28	1479	3.8	2.37	6.05
Secondary school	59	2098	3.1	2.26	4.30
Class					
Standard 4	13	665	5.1	2.83	9.00
Standard 5	6	278	2.2	1.26	3.71
Standard 6	9	536	4.1	1.77	9.30
Form 1	8	290	2.1	1.13	3.96
Form 2	10	403	3.0	1.58	5.65
Form 3	16	524	3.9	2.09	7.14
Form 4	13	463	3.5	2.09	5.81
Form 5	12	419	3.1	1.36	6.92
School session					
Morning session	45	1859	3.4	2.44	4.70
Evening session	2	79	1.9	0.99	3.54
Morning and evening session	40	1639	3.5	2.47	4.90
BMI-for-age status (BAZ)					
Thinness (<-2sd)	4	130	2.2	0.39	11.05
Normal (≥-2sd - ≤+1sd)	47	2016	3.1	2.13	4.48
Overweight (>+1sd - ≤+2sd)	14	562	3.4	1.96	5.80
Obese (>+2sd)	22	869	4.8	3.26	7.00
Height-for-age status (HAZ)					
Stunting (<-2sd)	7	252	3.7	1.81	7.51
Normal (≥-2sd)	80	3325	3.3	2.49	4.49

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1544	61777	60.6	52.59	68.09	564	22968	22.5	18.66	26.95
Locality of school										
Urban	396	14528	52.5	37.64	67.00	121	4395	15.9	10.68	22.99
Rural	1148	47249	63.6	54.67	71.70	443	18573	25.0	20.81	29.72
Sex										
Boys	823	29136	57.2	49.12	64.89	313	11148	21.9	17.90	26.46
Girls	721	32641	64.0	54.69	72.40	251	11821	23.2	18.68	28.40
Ethnicity										
Malay	1165	47082	59.5	50.00	68.31	453	18514	23.4	19.33	28.01
Chinese	269	10266	63.5	50.08	75.03	71	2831	17.5	12.72	23.59
Indian	89	3593	71.0	60.28	79.75	27	1020	20.2	13.04	29.81
Bumiputera Sabah	2	71	14.6	4.46	38.42	8	369	75.7	37.35	94.24
Bumiputera Sarawak	4	130	79.4	41.57	95.41	1	34	20.6	4.59	58.43
Others	15	635	70.9	49.60	85.82	4	200	22.3	8.34	47.51
School level										
Primary school	511	24228	65.2	60.61	69.47	205	9909	26.7	21.83	32.11
Secondary school	1033	37550	58.0	46.02	69.08	359	13059	20.2	15.46	25.87
Class										
Standard 4	149	7279	59.5	50.59	67.85	75	3687	30.1	20.62	41.75
Standard 5	186	8106	65.1	59.85	69.93	74	3311	26.6	20.81	33.26
Standard 6	176	8842	70.8	61.21	78.88	56	2911	23.3	15.19	34.05
Form 1	205	7723	58.4	46.29	69.63	74	2809	21.3	15.12	29.01
Form 2	195	7576	58.7	47.74	68.92	77	2930	22.7	16.62	30.24
Form 3	252	8464	65.9	53.30	76.65	60	1957	15.2	9.81	22.92
Form 4	209	7372	58.0	40.24	73.91	77	2650	20.9	14.73	28.67
Form 5	172	6414	49.0	29.18	69.09	71	2713	20.7	14.51	28.68
School session										
Morning session	854	33767	64.3	58.17	70.03	281	11419	21.8	17.37	26.88
Evening session	63	2658	65.2	51.67	76.63	22	950	23.3	15.44	33.56
Morning and evening session	625	25271	55.8	43.42	67.51	261	10599	23.4	18.80	28.74
BMI-for-age status (BAZ)										
Thinness (<-2sd)	95	3720	63.8	55.92	70.98	34	1336	22.9	17.39	29.56
Normal (≥-2sd - ≤+1sd)	945	38340	61.1	52.18	69.32	349	13993	22.3	18.34	26.82
Overweight (>+1sd - ≤+2sd)	241	9374	58.8	47.43	69.34	84	3531	22.2	16.46	29.14
Obese (>+2sd)	261	10277	59.7	51.21	67.68	97	4108	23.9	17.83	31.19
Height-for-age status (HAZ)										
Stunting (<-2sd)	87	3698	57.6	43.50	70.56	37	1398	21.8	13.56	33.05
Normal (≥-2sd)	1457	58079	60.8	52.89	68.19	527	21571	22.6	18.68	27.04

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	190	6705	6.6	3.95	10.77	228	8278	8.1	2.76	21.56
Locality of school										
Urban	115	3740	13.5	6.35	26.52	127	4608	16.7	3.68	51.16
Rural	75	2965	4.0	3.17	5.02	101	3670	4.9	1.15	18.78
Sex										
Boys	154	5010	9.8	5.50	16.96	142	4541	8.9	3.16	22.67
Girls	36	1696	3.3	2.03	5.40	86	3737	7.3	1.90	24.42
Ethnicity										
Malay	97	3769	4.8	3.37	6.69	224	8149	10.3	3.52	26.54
Chinese	84	2643	16.3	7.05	33.45	1	36	0.2	0.02	1.97
Indian	7	233	4.6	1.70	11.89	3	93	1.8	0.65	5.08
Bumiputera Sabah										
Bumiputera Sarawak										
Others	2	61	6.8	1.27	29.00					
School level										
Primary school	43	1965	5.3	3.13	8.78	4	191	0.5	0.25	1.07
Secondary school	147	4740	7.3	3.68	14.02	224	8087	12.5	4.35	30.93
Class										
Standard 4	15	720	5.9	3.40	10.00	1	64	0.5	0.08	3.44
Standard 5	17	671	5.4	2.45	11.41	3	127	1.0	0.36	2.82
Standard 6	11	574	4.6	2.00	10.21					
Form 1	26	892	6.7	2.85	15.16	42	1567	11.9	3.68	32.13
Form 2	31	1117	8.7	5.64	13.07	25	986	7.6	1.99	25.26
Form 3	33	977	7.6	3.40	16.18	34	1162	9.1	2.91	24.85
Form 4	25	723	5.7	1.68	17.54	55	1787	14.1	3.79	40.47
Form 5	32	1032	7.9	3.83	15.52	68	2585	19.7	6.50	46.51
School session										
Morning session	107	3690	7.0	4.09	11.83	68	2460	4.7	1.59	13.03
Evening session	4	168	4.1	1.43	11.26	3	151	3.7	1.10	11.75
Morning and evening session	79	2848	6.3	3.46	11.15	157	5667	12.5	3.95	33.24
BMI-for-age status (BAZ)										
Thinness (<-2sd)	13	447	7.7	3.50	15.98	2	63	1.1	0.24	4.74
Normal (≥-2sd - ≤+1sd)	110	3796	6.0	3.24	11.02	149	5307	8.5	2.71	23.47
Overweight (>+1sd - ≤+2sd)	29	1028	6.5	4.03	10.18	48	1806	11.3	4.09	27.70
Obese (>+2sd)	37	1404	8.2	4.94	13.19	29	1103	6.4	2.39	16.04
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	315	4.9	2.22	10.47	21	807	12.6	3.65	35.26
Normal (≥-2sd)	182	6390	6.7	3.92	11.19	207	7471	7.8	2.70	20.63

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
Melaka	53	2206	2.2	1.32	3.52
Locality of school					
Urban	12	381	1.4	0.77	2.45
Rural	41	1825	2.5	1.39	4.29
Sex					
Boys	33	1116	2.2	1.52	3.15
Girls	20	1089	2.1	0.98	4.59
Ethnicity					
Malay	39	1633	2.1	1.28	3.32
Chinese	9	402	2.5	0.94	6.42
Indian	4	123	2.4	0.89	6.47
Bumiputera Sabah	1	47	9.7	1.52	42.73
Bumiputera Sarawak					
Others					
School level					
Primary school	15	882	2.4	0.72	7.50
Secondary school	38	1324	2.0	1.64	2.55
Class					
Standard 4	6	481	3.9	0.73	18.64
Standard 5	5	244	2.0	0.59	6.32
Standard 6	4	157	1.3	0.34	4.55
Form 1	6	227	1.7	0.61	4.69
Form 2	7	290	2.2	0.98	5.08
Form 3	8	277	2.2	0.82	5.58
Form 4	6	177	1.4	0.69	2.79
Form 5	11	353	2.7	1.56	4.63
School session					
Morning session	27	1159	2.2	1.14	4.25
Evening session	4	151	3.7	1.85	7.28
Morning and evening session	22	896	2.0	1.17	3.32
BMI-for-age status (BAZ)					
Thinness (<-2sd)	6	266	4.6	1.37	14.13
Normal (≥-2sd - ≤+1sd)	31	1323	2.1	1.47	3.02
Overweight (>+1sd - ≤+2sd)	7	198	1.2	0.49	3.12
Obese (>+2sd)	6	317	1.8	0.62	5.36
Height-for-age status (HAZ)					
Stunting (<-2sd)	4	203	3.2	1.06	9.01
Normal (≥-2sd)	49	2003	2.1	1.33	3.28

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	121	4781	10.0	7.91	12.68	576	23542	49.5	45.38	53.56
Locality of school										
Urban	23	781	6.9	3.82	12.05	126	4802	42.2	34.85	50.00
Rural	98	4000	11.0	8.65	14.00	450	18740	51.7	47.75	55.70
Sex										
Boys	76	2630	10.8	8.26	13.98	307	11190	45.9	41.76	50.13
Girls	45	2151	9.3	6.64	12.79	269	12352	53.2	47.33	58.96
Ethnicity										
Malay	99	3927	9.9	7.38	13.25	499	20301	51.4	47.46	55.26
Chinese	16	641	12.9	7.58	20.95	47	1921	38.5	29.16	48.77
Indian	5	185	8.4	2.82	22.67	19	825	37.6	19.79	59.55
Bumiputera Sabah						3	157	55.7	20.22	86.15
Bumiputera Sarawak	1	27	19.3	1.62	77.59	1	34	23.9	5.87	61.36
Others						7	304	65.5	44.01	82.09
School level										
Primary school	38	1812	9.0	5.53	14.21	232	10991	54.4	49.53	59.12
Secondary school	83	2969	10.8	8.57	13.64	344	12551	45.8	41.16	50.61
Class										
Standard 4	14	749	10.8	4.52	23.82	79	3813	55.2	45.80	64.21
Standard 5	18	756	11.2	7.27	16.99	79	3403	50.6	46.41	54.76
Standard 6	6	306	4.6	2.14	9.81	74	3775	57.4	48.62	65.71
Form 1	12	464	8.4	4.86	14.06	79	3025	54.6	43.74	65.03
Form 2	17	631	11.4	7.31	17.21	83	3174	57.1	46.32	67.27
Form 3	14	408	8.3	3.64	17.99	74	2438	49.9	43.16	56.69
Form 4	24	849	14.3	8.69	22.76	66	2371	40.1	31.37	49.42
Form 5	16	618	11.3	6.43	19.06	42	1543	28.2	20.40	37.53
School session										
Morning session	65	2535	10.4	7.61	14.04	306	12396	50.8	46.88	54.75
Evening session	6	261	12.2	7.50	19.20	19	817	38.2	29.68	47.54
Morning and evening session	50	1985	9.4	6.94	12.72	250	10295	49.0	43.13	54.82
BMI-for-age status (BAZ)										
Thinness (<-2sd)	5	218	9.3	2.81	26.48	39	1558	66.2	50.81	78.79
Normal (≥-2sd - ≤+1sd)	80	3060	10.3	7.98	13.30	360	14723	49.8	45.42	54.10
Overweight (>+1sd - ≤+2sd)	14	558	7.8	4.37	13.49	84	3439	48.0	40.25	55.86
Obese (>+2sd)	22	946	11.2	7.52	16.34	93	3822	45.2	36.65	54.14
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	265	7.7	3.55	15.94	43	1732	50.3	39.03	61.63
Normal (≥-2sd)	113	4516	10.2	8.02	12.96	533	21810	49.4	45.11	53.70

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	244	9630	20.2	17.17	23.69	123	4788	10.1	7.50	13.37
Locality of school										
Urban	87	3106	27.3	20.12	35.96	29	1006	8.8	4.52	16.59
Rural	157	6524	18.0	15.55	20.76	94	3782	10.4	7.53	14.30
Sex										
Boys	154	5476	22.5	18.22	27.38	60	2043	8.4	5.87	11.84
Girls	90	4154	17.9	15.06	21.12	63	2745	11.8	8.52	16.17
Ethnicity										
Malay	187	7505	19.0	16.55	21.70	103	4090	10.4	7.41	14.28
Chinese	37	1273	25.5	15.10	39.72	14	468	9.4	5.43	15.72
Indian	17	708	32.3	14.80	56.67	6	230	10.5	4.45	22.69
Bumiputera Sabah										
Bumiputera Sarawak	1	42	29.5	6.80	70.56					
Others	2	103	22.2	11.57	38.29					
School level										
Primary school	94	4336	21.5	18.75	24.42	24	1155	5.7	3.65	8.83
Secondary school	150	5293	19.3	14.70	25.00	99	3633	13.3	10.67	16.38
Class										
Standard 4	28	1322	19.1	15.87	22.87	6	306	4.4	2.24	8.58
Standard 5	33	1333	19.8	15.02	25.68	12	543	8.1	3.66	16.85
Standard 6	33	1682	25.6	20.65	31.18	6	306	4.7	2.17	9.69
Form 1	26	973	17.6	11.55	25.79	17	663	12.0	8.08	17.38
Form 2	19	737	13.3	8.28	20.58	11	450	8.1	3.84	16.25
Form 3	25	775	15.9	9.13	26.19	20	708	14.5	8.72	23.16
Form 4	29	896	15.1	9.25	23.81	34	1200	20.3	15.86	25.56
Form 5	51	1911	34.9	24.07	47.58	17	611	11.2	5.66	20.82
School session										
Morning session	119	4547	18.6	15.49	22.26	58	2229	9.1	6.85	12.09
Evening session	12	532	24.9	12.34	43.82	10	450	21.0	13.50	31.20
Morning and evening session	113	4550	21.6	17.51	26.44	55	2109	10.0	6.84	14.48
BMI-for-age status (BAZ)										
Thinness (<-2sd)	8	321	13.7	6.57	26.23	2	66	2.8	0.62	11.85
Normal (≥-2sd - ≤+1sd)	152	5977	20.2	16.37	24.67	63	2552	8.6	6.33	11.65
Overweight (>+1sd - ≤+2sd)	42	1642	22.9	17.96	28.77	23	872	12.2	7.03	20.24
Obese (>+2sd)	41	1651	19.5	13.46	27.50	35	1298	15.4	9.16	24.64
Height-for-age status (HAZ)										
Stunting (<-2sd)	21	930	27.0	18.30	38.00	5	220	6.4	2.23	17.01
Normal (≥-2sd)	223	8700	19.7	16.56	23.28	118	4568	10.3	7.73	13.72

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	60	2264	4.8	3.33	6.75	65	2586	5.4	3.74	7.84
Locality of school										
Urban	19	707	6.2	3.08	12.14	26	965	8.5	5.42	13.07
Rural	41	1557	4.3	2.90	6.32	39	1621	4.5	2.84	6.99
Sex										
Boys	46	1643	6.7	4.72	9.54	38	1387	5.7	3.97	8.10
Girls	14	621	2.7	1.66	4.28	27	1199	5.2	3.15	8.36
Ethnicity										
Malay	49	1887	4.8	3.39	6.68	47	1809	4.6	2.80	7.41
Chinese	4	104	2.1	0.35	11.24	13	584	11.7	6.30	20.69
Indian	3	138	6.3	2.31	16.03	3	108	4.9	0.97	21.34
Bumiputera Sabah	2	78	27.6	4.94	73.65	1	47	16.7	2.45	61.68
Bumiputera Sarawak						1	39	27.3	2.41	85.16
Others	2	57	12.3	1.14	63.18					
School level										
Primary school	26	1119	5.5	3.27	9.22	15	802	4.0	2.11	7.35
Secondary school	34	1145	4.2	2.64	6.57	50	1784	6.5	4.21	9.95
Class										
Standard 4	10	451	6.5	3.51	11.82	5	268	3.9	1.40	10.31
Standard 5	11	461	6.9	3.37	13.43	4	231	3.4	1.54	7.47
Standard 6	5	207	3.1	1.44	6.70	6	303	4.6	1.58	12.73
Form 1	4	153	2.8	0.69	10.46	7	262	4.7	2.29	9.52
Form 2	8	297	5.3	2.69	10.33	7	269	4.8	1.75	12.68
Form 3	5	150	3.1	0.92	9.74	12	404	8.3	5.30	12.70
Form 4	6	172	2.9	0.79	10.05	13	430	7.3	3.11	16.06
Form 5	11	373	6.8	3.79	11.96	11	418	7.6	4.81	11.93
School session										
Morning session	36	1395	5.7	3.88	8.34	33	1291	5.3	3.41	8.13
Evening session	1	42	2.0	0.71	5.29	1	37	1.7	0.17	15.38
Morning and evening session	23	828	3.9	2.09	7.28	31	1258	6.0	3.89	9.10
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	86	3.7	1.21	10.51	3	104	4.4	0.97	17.81
Normal (≥-2sd - ≤+1sd)	41	1564	5.3	3.59	7.71	43	1713	5.8	3.78	8.78
Overweight (>+1sd - ≤+2sd)	10	385	5.4	2.10	13.12	7	268	3.7	1.66	8.18
Obese (>+2sd)	6	229	2.7	1.27	5.70	12	501	5.9	3.02	11.33
Height-for-age status (HAZ)										
Stunting (<-2sd)	2	62	1.8	0.45	6.83	6	231	6.7	3.16	13.68
Normal (≥-2sd)	58	2203	5.0	3.48	7.10	59	2355	5.3	3.69	7.66

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1445	55876	52.8	47.00	58.49	1138	46320	43.8	38.60	49.04
Locality of school										
Urban	520	18058	62.9	51.80	72.70	258	9776	34.0	25.47	43.77
Rural	925	37818	49.0	43.26	54.82	880	36544	47.4	42.25	52.57
Sex										
Boys	892	30399	57.7	50.12	64.88	576	20612	39.1	32.48	46.16
Girls	553	25477	47.9	41.80	54.13	562	25708	48.4	43.04	53.73
Ethnicity										
Malay	984	38577	47.0	41.95	52.21	977	39995	48.8	43.97	53.60
Chinese	372	13886	81.8	74.88	87.10	80	3002	17.7	12.67	24.12
Indian	69	2631	50.0	42.17	57.84	62	2480	47.1	38.03	56.43
Bumiputera Sabah	6	239	49.1	23.11	75.54	5	248	50.9	24.46	76.89
Bumiputera Sarawak	5	169	83.3	42.60	97.10	1	34	16.7	2.90	57.40
Others	9	373	39.9	16.55	69.03	13	561	60.1	30.97	83.45
School level										
Primary school	383	18739	48.4	43.18	53.62	398	18780	48.5	43.53	53.46
Secondary school	1062	37137	55.3	47.04	63.32	740	27540	41.0	34.02	48.41
Class										
Standard 4	125	6331	48.4	43.84	53.04	131	6442	49.3	44.27	54.29
Standard 5	128	5680	44.6	39.33	50.00	153	6602	51.8	45.85	57.79
Standard 6	130	6728	52.0	43.76	60.22	114	5736	44.4	37.31	51.67
Form 1	220	8132	59.9	47.79	70.92	127	4843	35.7	26.21	46.41
Form 2	189	7236	54.1	44.34	63.59	146	5664	42.4	34.04	51.13
Form 3	238	7663	57.1	45.42	68.06	153	5296	39.5	29.25	50.70
Form 4	208	6818	51.5	41.65	61.16	166	5906	44.6	36.71	52.73
Form 5	207	7287	53.9	44.60	62.97	148	5831	43.1	34.91	51.78
School session										
Morning session	747	28765	52.6	45.75	59.44	587	23709	43.4	37.21	49.79
Evening session	55	2235	53.6	38.32	68.25	41	1807	43.3	28.24	59.78
Morning and evening session	642	24827	52.9	46.84	58.79	509	20771	44.2	39.00	49.56
BMI-for-age status (BAZ)										
Thinness (<-2sd)	101	3767	63.3	53.91	71.71	50	2069	34.7	26.15	44.44
Normal (≥-2sd - ≤+1sd)	904	35237	54.2	48.29	60.08	684	27873	42.9	37.61	48.38
Overweight (>+1sd - ≤+2sd)	225	8370	50.6	41.57	59.57	179	7359	44.5	35.92	53.38
Obese (>+2sd)	213	8442	46.4	39.05	53.84	221	8881	48.8	42.30	55.29
Height-for-age status (HAZ)										
Stunting (<-2sd)	86	3393	50.5	41.69	59.23	71	3002	44.7	37.35	52.19
Normal (≥-2sd)	1359	52482	52.9	46.98	58.81	1067	43318	43.7	38.29	49.25

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	
Melaka	93	3667	3.5	2.69	4.44
Locality of school					
Urban	23	897	3.1	1.90	5.09
Rural	70	2770	3.6	2.68	4.79
Sex					
Boys	47	1701	3.2	2.28	4.55
Girls	46	1966	3.7	2.57	5.30
Ethnicity					
Malay	86	3424	4.2	3.32	5.24
Chinese	3	93	0.5	0.14	2.11
Indian	4	151	2.9	1.26	6.38
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
School level					
Primary school	27	1215	3.1	2.22	4.41
Secondary school	66	2452	3.7	2.63	5.06
Class					
Standard 4	7	300	2.3	0.80	6.39
Standard 5	10	452	3.6	2.31	5.42
Standard 6	10	462	3.6	1.94	6.50
Form 1	16	600	4.4	2.55	7.53
Form 2	12	472	3.5	2.00	6.16
Form 3	14	459	3.4	2.02	5.76
Form 4	13	525	4.0	1.84	8.33
Form 5	11	397	2.9	1.53	5.55
School session					
Morning session	55	2163	4.0	2.97	5.27
Evening session	3	127	3.0	1.94	4.75
Morning and evening session	35	1377	2.9	1.95	4.39
BMI-for-age status (BAZ)					
Thinness (<-2sd)	3	119	2.0	0.65	5.98
Normal (≥-2sd - ≤+1sd)	48	1849	2.8	1.99	4.05
Overweight (>+1sd - ≤+2sd)	21	815	4.9	3.06	7.85
Obese (>+2sd)	21	884	4.9	2.90	8.04
Height-for-age status (HAZ)					
Stunting (<-2sd)	8	328	4.9	2.10	10.92
Normal (≥-2sd)	85	3340	3.4	2.61	4.34

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
Melaka	2020	80461	79.3	71.03	85.68	231	9303	9.2	7.21	11.60
Locality of school										
Urban	550	19569	70.7	49.71	85.48	72	2709	9.8	5.10	17.96
Rural	1470	60892	82.5	75.17	88.04	159	6594	8.9	7.22	11.01
Sex										
Boys	1101	38295	76.0	67.46	82.87	151	5572	11.1	8.32	14.55
Girls	919	42166	82.5	72.90	89.26	80	3731	7.3	5.43	9.77
Ethnicity										
Malay	1487	60229	77.1	66.87	84.95	171	6982	8.9	6.86	11.57
Chinese	393	14781	88.5	83.74	91.96	42	1481	8.9	5.53	13.91
Indian	108	4180	82.5	73.18	89.08	11	487	9.6	5.35	16.69
Bumiputera Sabah	7	287	58.8	29.39	83.01	4	201	41.2	16.99	70.61
Bumiputera Sarawak	5	175	86.6	34.39	98.75	1	27	13.4	1.25	65.61
Others	20	809	86.7	47.92	97.86	2	125	13.3	2.14	52.08
School level										
Primary school	635	30459	82.3	79.24	84.93	101	4790	12.9	10.40	15.98
Secondary school	1385	50003	77.6	64.43	86.88	130	4513	7.0	5.18	9.40
Class										
Standard 4	206	10254	81.9	79.47	84.10	37	1827	14.6	11.31	18.63
Standard 5	228	9950	81.8	78.13	85.05	39	1727	14.2	11.12	17.97
Standard 6	201	10255	83.0	76.52	88.03	25	1236	10.0	5.47	17.60
Form 1	269	10109	77.9	63.57	87.70	29	1050	8.1	5.29	12.20
Form 2	265	10212	79.6	66.92	88.21	29	1067	8.3	5.66	12.04
Form 3	318	10556	82.2	70.94	89.72	22	749	5.8	3.77	8.92
Form 4	275	9545	75.3	54.99	88.42	29	945	7.5	4.51	12.09
Form 5	258	9581	73.0	51.82	87.21	21	703	5.4	2.60	10.72
School session										
Morning session	1085	42944	82.8	77.84	86.80	136	5253	10.1	8.51	12.01
Evening session	79	3311	82.5	72.32	89.43	5	261	6.5	2.66	15.03
Morning and evening session	854	34124	75.0	61.54	84.92	90	3789	8.3	5.21	13.06
BMI-for-age status (BAZ)										
Thinness (<-2sd)	131	5108	87.5	79.81	92.57	13	509	8.7	4.74	15.49
Normal (≥-2sd - ≤+1sd)	1249	50230	80.2	70.67	87.19	128	5096	8.1	6.30	10.45
Overweight (>+1sd - ≤+2sd)	306	11889	76.2	64.17	85.15	34	1413	9.1	5.03	15.77
Obese (>+2sd)	330	13107	76.2	69.66	81.68	56	2285	13.3	9.67	17.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	112	4492	71.1	53.90	83.80	11	457	7.2	4.11	12.41
Normal (≥-2sd)	1908	75969	79.8	71.85	86.00	220	8847	9.3	7.27	11.81

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	
Melaka	228	8303	8.2	2.91	20.97	84	3402	3.4	2.50	4.48
Locality of school										
Urban	127	4607	16.6	3.77	50.41	24	795	2.9	2.09	3.92
Rural	101	3696	5.0	1.32	17.24	60	2608	3.5	2.45	5.06
Sex										
Boys	146	4718	9.4	3.62	22.15	52	1801	3.6	2.36	5.38
Girls	82	3585	7.0	1.77	24.06	32	1601	3.1	2.07	4.71
Ethnicity										
Malay	221	8028	10.3	3.60	26.04	69	2832	3.6	2.67	4.91
Chinese	2	70	0.4	0.10	1.75	9	375	2.2	1.13	4.42
Indian	5	204	4.0	1.49	10.41	6	195	3.8	1.57	9.14
Bumiputera Sabah										
Bumiputera Sarawak										
Others										
School level										
Primary school	6	323	0.9	0.35	2.14	27	1455	3.9	2.58	5.95
Secondary school	222	7980	12.4	4.42	30.14	57	1947	3.0	2.06	4.41
Class										
Standard 4						7	440	3.5	1.45	8.23
Standard 5	4	206	1.7	0.60	4.65	7	274	2.3	1.13	4.46
Standard 6	2	117	1.0	0.26	3.44	13	742	6.0	3.78	9.42
Form 1	41	1513	11.7	3.69	31.24	8	304	2.3	1.37	3.96
Form 2	26	1045	8.1	2.14	26.40	13	513	4.0	1.98	7.88
Form 3	34	1157	9.0	3.08	23.58	13	380	3.0	1.27	6.73
Form 4	57	1831	14.5	4.13	39.83	11	349	2.8	1.11	6.67
Form 5	64	2434	18.6	6.20	43.97	12	401	3.1	1.52	6.06
School session										
Morning session	65	2320	4.5	1.50	12.55	32	1362	2.6	1.62	4.24
Evening session	6	241	6.0	2.54	13.51	5	203	5.0	3.23	7.79
Morning and evening session	157	5742	12.6	4.28	31.84	47	1837	4.0	2.80	5.80
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	120	2.1	0.72	5.71	3	99	1.7	0.34	8.14
Normal (≥-2sd - ≤+1sd)	148	5318	8.5	2.88	22.51	50	1988	3.2	2.17	4.62
Overweight (>+1sd - ≤+2sd)	47	1806	11.6	4.19	28.16	13	491	3.1	1.61	6.06
Obese (>+2sd)	29	1059	6.2	2.28	15.57	16	751	4.4	2.48	7.59
Height-for-age status (HAZ)										
Stunting (<-2sd)	22	873	13.8	5.32	31.38	10	497	7.9	3.41	17.12
Normal (≥-2sd)	206	7430	7.8	2.72	20.39	74	2906	3.1	2.39	3.90

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	98	3872	8.9	7.92	10.06	553	22685	52.3	48.88	55.79
Locality of school										
Urban	23	849	9.3	7.67	11.16	119	4581	50.0	45.73	54.20
Rural	75	3022	8.8	7.66	10.20	434	18104	53.0	48.83	57.11
Sex										
Boys	64	2333	11.8	9.85	14.01	273	9862	49.8	44.74	54.77
Girls	34	1538	6.5	4.68	9.07	280	12823	54.5	48.95	60.00
Ethnicity										
Malay	85	3364	8.8	7.65	10.17	495	20318	53.3	49.62	57.01
Chinese	7	289	11.3	6.84	17.97	30	1115	43.5	32.02	55.68
Indian	5	175	9.1	4.10	19.02	19	833	43.3	29.68	57.97
Bumiputera Sabah	1	44	17.7	1.87	70.93	2	112	45.2	9.57	86.50
Bumiputera Sarawak										
Others						7	307	61.4	42.88	77.10
School level										
Primary school	39	1754	10.0	9.00	11.16	212	10004	57.2	53.05	61.24
Secondary school	59	2118	8.2	6.83	9.80	341	12681	49.1	45.63	52.52
Class										
Standard 4	21	986	16.4	12.82	20.86	71	3446	57.5	50.93	63.80
Standard 5	14	591	9.6	5.43	16.29	78	3489	56.4	45.67	66.62
Standard 6	4	177	3.3	1.59	6.83	63	3070	57.8	51.80	63.49
Form 1	18	656	13.6	8.34	21.43	63	2380	49.4	41.72	57.02
Form 2	15	580	11.0	6.49	17.90	80	3079	58.2	51.45	64.66
Form 3	11	333	6.9	3.45	13.41	72	2494	51.9	44.10	59.61
Form 4	3	100	1.8	0.58	5.50	75	2671	48.3	40.86	55.75
Form 5	12	449	8.3	4.73	14.24	51	2057	38.1	29.17	48.00
School session										
Morning session	49	1938	8.6	6.47	11.36	297	12070	53.6	49.82	57.33
Evening session	7	280	16.3	9.96	25.62	20	909	53.1	42.46	63.40
Morning and evening session	42	1653	8.7	6.69	11.18	235	9672	50.7	45.32	56.11
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	171	8.6	3.37	20.23	36	1390	69.8	53.05	82.53
Normal (≥-2sd - ≤+1sd)	57	2256	8.9	7.40	10.74	338	13927	55.1	50.57	59.54
Overweight (>+1sd - ≤+2sd)	11	439	5.9	2.76	12.14	89	3715	49.8	42.12	57.54
Obese (>+2sd)	26	1005	11.8	8.18	16.78	90	3652	43.0	35.81	50.43
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	297	9.9	5.36	17.71	36	1566	52.5	41.40	63.34
Normal (≥-2sd)	90	3575	8.9	7.78	10.08	517	21119	52.3	48.56	56.09

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	115	4859	11.2	8.76	14.24	214	8486	19.6	15.13	24.97
Locality of school										
Urban	24	897	9.8	7.10	13.34	51	1861	20.3	15.66	25.88
Rural	91	3962	11.6	8.68	15.32	163	6625	19.4	14.03	26.18
Sex										
Boys	62	2341	11.8	8.46	16.26	101	3479	17.6	13.79	22.08
Girls	53	2518	10.7	8.19	13.88	113	5007	21.3	15.15	29.08
Ethnicity										
Malay	99	4128	10.8	8.34	13.96	184	7405	19.4	14.88	24.98
Chinese	4	174	6.8	2.65	16.28	16	570	22.2	9.94	42.51
Indian	7	334	17.3	9.91	28.57	12	449	23.3	11.94	40.63
Bumiputera Sabah	2	92	37.1	7.31	81.53					
Bumiputera Sarawak										
Others	3	132	26.3	12.54	47.07	2	62	12.3	2.01	48.95
School level										
Primary school	53	2560	14.6	10.99	19.24	37	1793	10.3	7.66	13.58
Secondary school	62	2299	8.9	6.71	11.71	177	6693	25.9	22.37	29.77
Class										
Standard 4	20	993	16.6	13.07	20.79	6	290	4.8	2.75	8.36
Standard 5	17	770	12.4	8.22	18.42	16	735	11.9	6.77	20.05
Standard 6	16	797	15.0	8.46	25.20	15	768	14.5	10.99	18.79
Form 1	19	749	15.5	9.63	24.08	21	827	17.2	11.52	24.77
Form 2	11	421	8.0	4.53	13.61	22	872	16.5	10.79	24.35
Form 3	7	247	5.1	2.34	10.95	32	1127	23.5	16.51	32.19
Form 4	14	472	8.5	4.84	14.59	48	1797	32.5	25.26	40.62
Form 5	11	410	7.6	3.21	16.95	54	2071	38.4	28.62	49.20
School session										
Morning session	61	2470	11.0	7.71	15.38	103	4027	17.9	12.84	24.35
Evening session	4	157	9.2	4.46	17.91	7	304	17.7	8.58	33.07
Morning and evening session	50	2232	11.7	7.91	16.99	104	4156	21.8	17.10	27.35
BMI-for-age status (BAZ)										
Thinness (<-2sd)	6	339	17.0	5.67	41.20					
Normal (≥-2sd - ≤+1sd)	71	2970	11.8	8.54	15.96	107	4205	16.6	12.19	22.29
Overweight (>+1sd - ≤+2sd)	17	718	9.6	6.11	14.83	46	1776	23.8	17.35	31.76
Obese (>+2sd)	20	795	9.4	6.21	13.87	60	2467	29.0	20.74	38.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	12	525	17.6	10.18	28.67	9	339	11.4	5.70	21.42
Normal (≥-2sd)	103	4335	10.7	8.36	13.69	205	8147	20.2	15.62	25.68

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	13	515	1.2	0.71	1.97	75	2919	6.7	5.29	8.54
Locality of school										
Urban	1	26	0.3	0.04	2.03	24	954	10.4	7.73	13.87
Rural	12	489	1.4	0.88	2.33	51	1965	5.8	4.47	7.36
Sex										
Boys	8	288	1.5	0.77	2.72	43	1517	7.7	5.62	10.34
Girls	5	227	1.0	0.42	2.21	32	1402	6.0	3.95	8.90
Ethnicity										
Malay	11	456	1.2	0.64	2.22	62	2428	6.4	4.79	8.44
Chinese	1	26	1.0	0.12	8.14	10	391	15.3	7.77	27.77
Indian	1	34	1.7	0.18	14.74	3	100	5.2	1.03	22.27
Bumiputera Sabah										
Bumiputera Sarawak										
Others										
School level										
Primary school	4	207	1.2	0.41	3.39	26	1173	6.7	4.66	9.55
Secondary school	9	307	1.2	0.75	1.87	49	1746	6.8	4.89	9.26
Class										
Standard 4	1	64	1.1	0.16	6.76	4	215	3.6	1.17	10.48
Standard 5	3	143	2.3	0.92	5.70	12	455	7.4	4.38	12.10
Standard 6						10	503	9.5	6.32	13.93
Form 1	1	39	0.8	0.12	4.99	5	172	3.6	1.30	9.37
Form 2	1	36	0.7	0.09	4.70	8	303	5.7	2.70	11.75
Form 3	5	165	3.4	1.77	6.60	13	439	9.1	4.98	16.13
Form 4	2	68	1.2	0.29	5.02	12	426	7.7	3.57	15.82
Form 5						11	406	7.5	3.81	14.37
School session										
Morning session	9	360	1.6	0.78	3.27	41	1655	7.4	5.39	9.95
Evening session	1	64	3.7	0.37	28.55					
Morning and evening session	3	91	0.5	0.16	1.38	34	1263	6.6	4.67	9.32
BMI-for-age status (BAZ)										
Thinness (<-2sd)	1	26	1.3	0.16	9.92	2	65	3.3	0.71	13.85
Normal (≥-2sd - ≤+1sd)	7	294	1.2	0.58	2.32	43	1624	6.4	4.68	8.76
Overweight (>+1sd - ≤+2sd)	3	110	1.5	0.47	4.59	17	699	9.4	6.12	14.09
Obese (>+2sd)	2	85	1.0	0.23	4.17	12	497	5.8	3.48	9.64
Height-for-age status (HAZ)										
Stunting (<-2sd)						7	257	8.6	3.85	18.13
Normal (≥-2sd)	13	515	1.3	0.77	2.11	68	2662	6.6	5.28	8.21

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1691	68267	64.3	59.17	69.18	898	34650	32.7	28.08	37.58
Locality of school										
Urban	496	17911	62.2	52.03	71.43	264	9619	33.4	24.12	44.20
Rural	1195	50356	65.1	59.20	70.60	634	25031	32.4	27.32	37.87
Sex										
Boys	952	33904	64.0	58.53	69.19	502	17007	32.1	27.28	37.38
Girls	739	34363	64.6	58.58	70.24	396	17643	33.2	27.77	39.08
Ethnicity										
Malay	1274	51927	63.2	57.71	68.40	715	27990	34.1	29.15	39.37
Chinese	315	12153	71.6	61.83	79.64	114	3996	23.5	17.42	30.99
Indian	77	3126	58.2	47.78	67.89	55	2100	39.1	29.29	49.81
Bumiputera Sabah	9	362	74.2	36.62	93.49	2	126	25.8	6.51	63.38
Bumiputera Sarawak	3	103	50.9	14.09	86.80	3	99	49.1	13.20	85.91
Others	13	595	63.7	39.51	82.50	9	339	36.3	17.50	60.49
School level										
Primary school	565	27454	70.5	64.35	76.05	230	10784	27.7	22.45	33.65
Secondary school	1126	40813	60.7	54.60	66.55	668	23866	35.5	29.78	41.70
Class										
Standard 4	187	9579	72.8	59.55	82.94	73	3374	25.6	16.18	38.11
Standard 5	202	8782	68.9	59.25	77.17	82	3689	28.9	20.88	38.61
Standard 6	176	9093	69.8	61.44	77.08	75	3722	28.6	22.48	35.59
Form 1	240	8956	65.8	55.76	74.56	110	4153	30.5	22.27	40.19
Form 2	222	8631	64.5	57.77	70.78	111	4221	31.6	25.67	38.12
Form 3	238	7867	58.7	49.56	67.19	146	4948	36.9	28.81	45.77
Form 4	213	7450	56.2	47.79	64.34	163	5464	41.2	34.36	48.50
Form 5	213	7908	58.4	50.69	65.68	138	5080	37.5	30.38	45.21
School session										
Morning session	920	37027	67.5	61.57	72.97	423	16100	29.4	24.14	35.18
Evening session	62	2613	62.1	53.20	70.18	36	1508	35.8	28.39	43.97
Morning and evening session	707	28545	60.7	55.10	66.11	439	17042	36.3	31.50	41.31
BMI-for-age status (BAZ)										
Thinness (<-2sd)	117	4650	77.6	68.70	84.60	32	1119	18.7	12.42	27.14
Normal (≥-2sd - ≤+1sd)	1036	41895	64.2	58.87	69.29	552	21465	32.9	28.15	38.06
Overweight (>+1sd - ≤+2sd)	254	9998	60.4	53.43	67.00	158	6103	36.9	30.47	43.78
Obese (>+2sd)	280	11589	63.7	57.29	69.57	156	5963	32.8	26.88	39.21
Height-for-age status (HAZ)										
Stunting (<-2sd)	95	3954	58.8	48.28	68.54	64	2567	38.2	29.56	47.59
Normal (≥-2sd)	1596	64313	64.7	59.67	69.43	834	32083	32.3	27.78	37.13

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	
Melaka	92	3203	3.0	2.03	4.47
Locality of school					
Urban	42	1259	4.4	1.99	9.36
Rural	50	1944	2.5	1.74	3.63
Sex					
Boys	66	2036	3.8	2.24	6.53
Girls	26	1167	2.2	1.48	3.25
Ethnicity					
Malay	61	2223	2.7	1.87	3.90
Chinese	26	832	4.9	2.03	11.33
Indian	5	148	2.8	0.77	9.40
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
School level					
Primary school	16	685	1.8	0.93	3.30
Secondary school	76	2518	3.7	2.43	5.74
Class					
Standard 4	5	206	1.6	0.78	3.10
Standard 5	6	273	2.1	1.05	4.32
Standard 6	5	206	1.6	0.41	5.86
Form 1	14	507	3.7	1.97	6.93
Form 2	14	520	3.9	2.54	5.92
Form 3	21	598	4.5	2.06	9.39
Form 4	11	334	2.5	1.01	6.12
Form 5	16	558	4.1	1.80	9.15
School session					
Morning session	50	1707	3.1	2.13	4.53
Evening session	2	90	2.1	0.73	6.04
Morning and evening session	40	1406	3.0	1.65	5.35
BMI-for-age status (BAZ)					
Thinness (<-2sd)	6	220	3.7	1.85	7.14
Normal (≥-2sd - ≤+1sd)	53	1850	2.8	1.89	4.24
Overweight (>+1sd - ≤+2sd)	13	449	2.7	1.43	5.09
Obese (>+2sd)	19	655	3.6	1.77	7.16
Height-for-age status (HAZ)					
Stunting (<-2sd)	6	205	3.0	1.25	7.22
Normal (≥-2sd)	86	2998	3.0	2.01	4.51

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	511	20167	19.7	16.50	23.44	1854	73432	71.9	66.74	76.51
Locality of school										
Urban	184	6482	23.6	15.19	34.82	514	18882	68.8	59.57	76.77
Rural	327	13685	18.3	15.66	21.30	1340	54550	73.0	66.80	78.43
Sex										
Boys	290	10145	20.1	15.66	25.49	1016	35532	70.5	64.68	75.73
Girls	221	10022	19.4	15.57	23.82	838	37900	73.2	66.89	78.72
Ethnicity										
Malay	327	13257	16.7	13.78	20.09	1493	59860	75.4	70.51	79.70
Chinese	143	5136	32.1	24.02	41.51	244	8976	56.2	49.04	63.05
Indian	35	1506	28.8	17.72	43.19	86	3312	63.4	50.16	74.86
Bumiputera Sabah						11	488	100.0	100.00	100.00
Bumiputera Sarawak	1	27	16.9	1.62	71.60	4	134	83.1	28.40	98.38
Others	5	240	26.7	12.34	48.39	16	662	73.3	51.61	87.66
School level										
Primary school	179	8270	21.8	19.27	24.51	560	26533	69.9	62.01	76.70
Secondary school	332	11896	18.5	13.96	24.20	1294	46899	73.1	66.33	78.90
Class										
Standard 4	66	3145	24.6	19.14	31.11	166	8009	62.7	50.84	73.28
Standard 5	72	3123	25.1	20.57	30.26	196	8411	67.6	55.20	77.95
Standard 6	41	2002	15.7	13.07	18.69	198	10113	79.2	74.68	83.05
Form 1	77	2917	22.4	15.40	31.48	250	9381	72.1	63.47	79.40
Form 2	59	2241	17.7	12.13	24.97	252	9791	77.1	69.15	83.53
Form 3	69	2193	17.3	12.13	23.96	291	9849	77.5	69.94	83.58
Form 4	59	2077	16.2	10.33	24.53	269	9280	72.4	62.77	80.38
Form 5	68	2467	19.0	11.30	30.27	232	8598	66.4	54.53	76.43
School session										
Morning session	284	10976	20.8	17.17	24.99	969	38115	72.3	66.38	77.48
Evening session	11	473	11.7	6.39	20.44	74	3158	78.1	61.84	88.74
Morning and evening session	215	8670	19.1	15.00	24.10	810	32125	70.9	64.69	76.45
BMI-for-age status (BAZ)										
Thinness (<-2sd)	34	1206	20.9	13.46	31.01	104	4020	69.7	57.29	79.74
Normal (≥-2sd - ≤+1sd)	304	12072	19.2	15.63	23.30	1146	45528	72.3	66.89	77.14
Overweight (>+1sd - ≤+2sd)	80	3130	19.7	14.36	26.33	294	11594	72.8	66.26	78.55
Obese (>+2sd)	91	3691	21.2	17.45	25.62	309	12252	70.5	64.15	76.20
Height-for-age status (HAZ)										
Stunting (<-2sd)	28	1076	16.6	11.62	23.14	118	4907	75.7	69.87	80.71
Normal (≥-2sd)	483	19091	20.0	16.74	23.61	1736	68525	71.6	66.29	76.41

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	52	2037	2.0	1.38	2.88	92	3354	3.3	0.96	10.66
Locality of school										
Urban	22	802	2.9	1.57	5.39	19	643	2.3	0.72	7.41
Rural	30	1234	1.7	1.11	2.46	73	2711	3.6	0.81	14.83
Sex										
Boys	31	1130	2.2	1.35	3.71	70	2256	4.5	1.21	15.21
Girls	21	907	1.8	1.05	2.90	22	1098	2.1	0.67	6.48
Ethnicity										
Malay	28	1219	1.5	0.97	2.42	85	2969	3.7	0.94	13.69
Chinese	20	693	4.3	2.58	7.21	3	209	1.3	0.25	6.41
Indian	4	124	2.4	0.59	9.08	4	177	3.4	1.15	9.56
Bumiputera Sabah										
Bumiputera Sarawak										
Others										
School level										
Primary school	15	681	1.8	0.83	3.84	5	362	1.0	0.17	5.06
Secondary school	37	1355	2.1	1.42	3.12	87	2992	4.7	1.22	16.18
Class										
Standard 4	7	307	2.4	1.21	4.73	1	41	0.3	0.04	2.55
Standard 5	4	157	1.3	0.35	4.42	2	147	1.2	0.16	8.31
Standard 6	4	217	1.7	0.56	5.04	2	173	1.4	0.19	9.16
Form 1	6	212	1.6	0.73	3.61	10	362	2.8	1.12	6.76
Form 2	11	407	3.2	1.42	7.08	6	222	1.8	0.65	4.64
Form 3	11	370	2.9	1.54	5.46	4	113	0.9	0.33	2.35
Form 4	4	161	1.3	0.39	3.92	31	967	7.5	1.38	32.28
Form 5	5	206	1.6	0.57	4.36	36	1328	10.2	2.43	34.34
School session										
Morning session	33	1248	2.4	1.63	3.42	14	560	1.1	0.48	2.33
Evening session	5	199	4.9	2.32	10.08	2	90	2.2	0.29	14.86
Morning and evening session	14	590	1.3	0.58	2.92	76	2704	6.0	1.49	21.01
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	140	2.4	0.90	6.37	2	104	1.8	0.36	8.63
Normal (≥-2sd - ≤+1sd)	30	1190	1.9	1.29	2.75	61	2217	3.5	1.02	11.47
Overweight (>+1sd - ≤+2sd)	8	307	1.9	0.97	3.82	19	675	4.2	1.45	11.77
Obese (>+2sd)	10	399	2.3	0.91	5.67	10	359	2.1	0.30	13.00
Height-for-age status (HAZ)										
Stunting (<-2sd)	2	83	1.3	0.32	4.98	8	281	4.3	1.26	13.90
Normal (≥-2sd)	50	1954	2.0	1.40	2.97	84	3073	3.2	0.93	10.54

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
Melaka	60	3169	3.1	1.11	8.35
Locality of school					
Urban	18	629	2.3	1.26	4.12
Rural	42	2540	3.4	0.96	11.36
Sex					
Boys	33	1334	2.6	1.20	5.72
Girls	27	1836	3.5	1.03	11.45
Ethnicity					
Malay	42	2097	2.6	1.16	5.90
Chinese	15	966	6.0	1.19	25.53
Indian	3	107	2.0	0.76	5.36
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
School level					
Primary school	30	2132	5.6	1.32	20.90
Secondary school	30	1038	1.6	0.98	2.66
Class					
Standard 4	16	1262	9.9	1.60	42.48
Standard 5	9	602	4.8	1.06	19.45
Standard 6	5	268	2.1	0.69	6.16
Form 1	4	134	1.0	0.32	3.26
Form 2	1	34	0.3	0.03	2.07
Form 3	6	185	1.5	0.73	2.87
Form 4	10	326	2.5	1.14	5.56
Form 5	9	359	2.8	1.23	6.15
School session					
Morning session	33	1841	3.5	1.04	11.02
Evening session	4	123	3.0	0.60	13.98
Morning and evening session	23	1206	2.7	1.05	6.58
BMI-for-age status (BAZ)					
Thinness (<-2sd)	5	299	5.2	0.98	23.17
Normal (≥-2sd - ≤+1sd)	37	1960	3.1	1.22	7.72
Overweight (>+1sd - ≤+2sd)	6	210	1.3	0.60	2.89
Obese (>+2sd)	11	670	3.9	0.95	14.33
Height-for-age status (HAZ)					
Stunting (<-2sd)	2	136	2.1	0.46	8.92
Normal (≥-2sd)	58	3034	3.2	1.15	8.45

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	617	24322	23.0	20.51	25.63	1665	66209	62.5	59.50	65.45
Locality of school										
Urban	164	5811	20.2	16.51	24.52	488	17774	61.9	57.16	66.33
Rural	453	18511	24.0	21.15	27.08	1177	48435	62.8	59.00	66.39
Sex										
Boys	385	13423	25.3	22.58	28.33	932	32863	62.1	58.27	65.71
Girls	232	10899	20.6	16.88	24.86	733	33346	63.0	59.13	66.68
Ethnicity										
Malay	479	19003	23.2	20.38	26.24	1320	53093	64.8	61.25	68.14
Chinese	88	3390	20.0	14.81	26.35	233	8611	50.7	46.68	54.72
Indian	39	1512	28.4	22.85	34.71	88	3473	65.2	56.97	72.69
Bumiputera Sabah	4	168	34.5	16.21	58.90	7	320	65.5	41.10	83.79
Bumiputera Sarawak	3	108	53.3	18.07	85.53	2	61	30.1	8.16	67.70
Others	4	141	15.1	5.03	37.51	15	653	69.9	40.10	88.93
School level										
Primary school	220	10476	27.0	24.22	30.00	517	24545	63.3	57.84	68.41
Secondary school	397	13846	20.6	18.01	23.52	1148	41665	62.1	58.48	65.54
Class										
Standard 4	70	3525	27.0	18.83	37.15	177	8717	66.8	57.56	74.96
Standard 5	83	3586	28.1	23.26	33.54	179	7775	61.0	56.79	64.96
Standard 6	67	3365	25.9	23.33	28.68	161	8052	62.0	55.05	68.53
Form 1	83	3066	22.7	18.24	27.78	224	8436	62.3	54.10	69.90
Form 2	76	2907	21.7	17.59	26.55	212	8163	61.0	56.07	65.79
Form 3	98	3112	23.1	18.52	28.49	243	8199	60.9	54.33	67.19
Form 4	73	2407	18.2	13.17	24.65	234	8045	60.9	54.75	66.71
Form 5	67	2355	17.4	11.77	24.92	235	8822	65.1	57.01	72.44
School session										
Morning session	307	12166	22.2	18.82	26.10	880	34829	63.7	59.91	67.30
Evening session	27	1094	26.0	18.37	35.36	66	2822	67.0	58.62	74.43
Morning and evening session	283	11062	23.6	20.31	27.19	718	28510	60.8	56.48	64.89
BMI-for-age status (BAZ)										
Thinness (<-2sd)	47	1777	30.0	23.08	37.94	87	3394	57.3	48.80	65.36
Normal (≥-2sd - ≤+1sd)	373	14716	22.6	19.78	25.77	1054	41907	64.5	60.07	68.60
Overweight (>+1sd - ≤+2sd)	90	3502	21.2	17.75	25.03	262	10408	62.9	56.97	68.45
Obese (>+2sd)	106	4291	23.6	18.90	28.98	259	10397	57.1	52.37	61.72
Height-for-age status (HAZ)										
Stunting (<-2sd)	20	766	11.3	6.52	18.97	43	1598	23.6	16.36	32.90
Normal (≥-2sd)	376	14602	14.7	12.14	17.75	574	22725	22.9	20.44	25.61

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	
Melaka	396	15368	14.5	11.94	17.53
Locality of school					
Urban	149	5152	17.9	13.30	23.73
Rural	247	10216	13.2	10.52	16.54
Sex					
Boys	204	6668	12.6	9.51	16.48
Girls	192	8700	16.4	13.20	20.27
Ethnicity					
Malay	249	9876	12.0	9.82	14.71
Chinese	134	4981	29.3	24.84	34.26
Indian	9	338	6.3	2.51	15.14
Bumiputera Sabah					
Bumiputera Sarawak	1	33	16.5	1.57	71.18
Others	3	140	15.0	3.25	48.06
School level					
Primary school	73	3761	9.7	6.45	14.33
Secondary school	323	11606	17.3	14.96	19.90
Class					
Standard 4	16	801	6.1	4.55	8.24
Standard 5	30	1394	10.9	7.45	15.75
Standard 6	27	1567	12.1	6.03	22.70
Form 1	55	2032	15.0	9.13	23.72
Form 2	59	2303	17.2	12.28	23.61
Form 3	65	2142	15.9	12.08	20.70
Form 4	79	2760	20.9	16.67	25.84
Form 5	65	2370	17.5	13.62	22.18
School session					
Morning session	203	7693	14.1	10.79	18.14
Evening session	7	296	7.0	4.57	10.63
Morning and evening session	185	7346	15.7	12.72	19.12
BMI-for-age status (BAZ)					
Thinness (<-2sd)	20	754	12.7	7.63	20.49
Normal (≥-2sd - ≤+1sd)	211	8396	12.9	10.06	16.43
Overweight (>+1sd - ≤+2sd)	73	2639	15.9	11.58	21.55
Obese (>+2sd)	90	3518	19.3	15.75	23.48
Height-for-age status (HAZ)					
Stunting (<-2sd)	103	4394	65.0	55.85	73.22
Normal (≥-2sd)	1562	61815	62.3	59.03	65.55

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1565	62608	69.5	61.88	76.17	275	11769	13.1	9.42	17.84
Locality of school										
Urban	393	14361	61.1	42.21	77.22	35	1362	5.8	2.86	11.42
Rural	1172	48247	72.4	65.31	78.57	240	10407	15.6	11.59	20.73
Sex										
Boys	863	30394	66.1	58.96	72.49	154	6041	13.1	9.35	18.12
Girls	702	32214	73.1	63.80	80.70	121	5728	13.0	8.70	18.96
Ethnicity										
Malay	1214	48979	68.3	59.31	76.03	232	9824	13.7	9.81	18.79
Chinese	225	8709	73.2	63.22	81.25	19	840	7.1	3.76	12.85
Indian	101	3933	78.9	68.47	86.55	17	732	14.7	8.34	24.59
Bumiputera Sabah	7	272	55.9	21.41	85.45	4	215	44.1	14.55	78.59
Bumiputera Sarawak	3	108	63.9	25.00	90.37	1	34	20.0	3.71	61.92
Others	15	606	76.4	49.02	91.56	2	125	15.7	2.64	56.11
School level										
Primary school	517	24687	70.8	68.04	73.50	157	7428	21.3	17.53	25.67
Secondary school	1048	37921	68.6	56.12	78.92	118	4342	7.9	5.38	11.34
Class										
Standard 4	163	8057	66.0	55.86	74.88	66	3240	26.5	18.94	35.85
Standard 5	180	7851	69.4	64.50	73.87	54	2383	21.1	17.65	24.93
Standard 6	174	8778	77.5	71.01	82.93	37	1805	15.9	9.53	25.45
Form 1	199	7499	65.5	53.26	75.93	41	1587	13.9	7.13	25.20
Form 2	187	7214	65.9	54.83	75.42	37	1428	13.0	8.87	18.75
Form 3	263	8837	78.6	65.02	87.86	14	421	3.7	1.70	8.02
Form 4	209	7318	70.2	49.76	84.87	16	504	4.8	2.07	10.85
Form 5	190	7053	63.1	43.06	79.46	10	403	3.6	0.70	16.48
School session										
Morning session	867	34501	73.8	67.64	79.16	139	5938	12.7	7.96	19.66
Evening session	51	2188	55.9	45.29	65.98	29	1216	31.0	19.85	45.01
Morning and evening session	646	25870	65.7	52.87	76.55	107	4616	11.7	8.18	16.51
BMI-for-age status (BAZ)										
Thinness (<-2sd)	101	3912	76.5	65.39	84.84	19	729	14.3	7.74	24.77
Normal (≥-2sd - ≤+1sd)	982	39620	70.2	61.49	77.69	161	6862	12.2	8.65	16.84
Overweight (>+1sd - ≤+2sd)	241	9492	68.6	57.25	78.08	35	1550	11.2	6.99	17.47
Obese (>+2sd)	239	9518	65.3	59.42	70.70	60	2629	18.0	12.80	24.79
Height-for-age status (HAZ)										
Stunting (<-2sd)	96	3961	66.7	51.92	78.82	17	755	12.7	6.94	22.15
Normal (≥-2sd)	1469	58647	69.7	62.25	76.21	258	11015	13.1	9.43	17.88

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	172	6317	7.0	5.05	9.66	202	7272	8.1	2.74	21.51
Locality of school										
Urban	79	2687	11.4	6.38	19.68	126	4539	19.3	4.54	54.69
Rural	93	3630	5.4	4.23	6.99	76	2733	4.1	1.03	14.96
Sex										
Boys	120	3947	8.6	5.72	12.67	131	4223	9.2	3.38	22.58
Girls	52	2370	5.4	3.78	7.59	71	3049	6.9	1.63	25.02
Ethnicity										
Malay	111	4401	6.1	4.92	7.62	197	7098	9.9	3.31	26.06
Chinese	55	1699	14.3	6.50	28.50	1	44	0.4	0.04	3.33
Indian	4	162	3.3	1.29	8.00	4	130	2.6	1.04	6.36
Bumiputera Sabah										
Bumiputera Sarawak	1	27	16.1	1.36	72.73					
Others	1	28	3.5	0.58	18.15					
School level										
Primary school	41	1862	5.3	3.18	8.84	4	194	0.6	0.23	1.35
Secondary school	131	4454	8.1	5.44	11.78	198	7078	12.8	4.45	31.65
Class										
Standard 4	12	638	5.2	3.25	8.30	1	36	0.3	0.04	2.03
Standard 5	21	823	7.3	3.96	13.00	1	64	0.6	0.07	4.25
Standard 6	8	402	3.5	1.32	9.20	2	94	0.8	0.24	2.84
Form 1	20	683	6.0	2.27	14.71	37	1360	11.9	3.47	33.57
Form 2	23	830	7.6	4.33	12.95	26	1037	9.5	2.45	30.32
Form 3	21	635	5.6	2.96	10.49	35	1180	10.5	3.41	27.99
Form 4	27	896	8.6	4.81	14.89	49	1560	15.0	4.08	42.16
Form 5	40	1411	12.6	8.03	19.30	51	1941	17.4	6.26	39.78
School session										
Morning session	90	3201	6.8	4.55	10.18	58	2054	4.4	1.39	13.00
Evening session	6	237	6.0	3.14	11.32	3	134	3.4	0.58	17.60
Morning and evening session	76	2880	7.3	4.98	10.61	141	5084	12.9	4.19	33.45
BMI-for-age status (BAZ)										
Thinness (<-2sd)	7	255	5.0	2.08	11.46	2	63	1.2	0.26	5.46
Normal (≥-2sd - ≤+1sd)	109	3887	6.9	4.61	10.17	134	4754	8.4	2.71	23.34
Overweight (>+1sd - ≤+2sd)	23	939	6.8	4.52	10.08	44	1634	11.8	4.16	29.21
Obese (>+2sd)	33	1236	8.5	5.47	12.91	22	822	5.6	2.16	13.91
Height-for-age status (HAZ)										
Stunting (<-2sd)	7	269	4.5	2.11	9.50	20	773	13.0	3.96	35.25
Normal (≥-2sd)	165	6047	7.2	5.14	9.95	182	6499	7.7	2.64	20.55

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
Melaka	57	2130	2.4	1.74	3.21
Locality of school					
Urban	17	539	2.3	0.97	5.32
Rural	40	1591	2.4	1.78	3.19
Sex					
Boys	42	1412	3.1	2.16	4.34
Girls	15	718	1.6	1.09	2.44
Ethnicity					
Malay	37	1458	2.0	1.40	2.95
Chinese	18	609	5.1	3.15	8.20
Indian	1	28	0.6	0.07	4.16
Bumiputera Sabah					
Bumiputera Sarawak					
Others	1	35	4.5	0.43	33.24
School level					
Primary school	14	673	1.9	1.23	3.03
Secondary school	43	1457	2.6	1.80	3.85
Class					
Standard 4	4	235	1.9	0.84	4.34
Standard 5	5	194	1.7	0.58	5.00
Standard 6	5	244	2.2	1.20	3.84
Form 1	9	326	2.8	1.27	6.23
Form 2	12	443	4.0	2.48	6.54
Form 3	6	173	1.5	0.59	3.97
Form 4	5	145	1.4	0.28	6.56
Form 5	11	369	3.3	1.65	6.52
School session					
Morning session	27	1051	2.2	1.73	2.92
Evening session	4	141	3.6	1.75	7.28
Morning and evening session	26	937	2.4	1.43	3.93
BMI-for-age status (BAZ)					
Thinness (<-2sd)	4	156	3.1	1.09	8.26
Normal (≥-2sd - ≤+1sd)	36	1301	2.3	1.47	3.61
Overweight (>+1sd - ≤+2sd)	7	224	1.6	0.58	4.38
Obese (>+2sd)	8	377	2.6	1.29	5.12
Height-for-age status (HAZ)					
Stunting (<-2sd)	5	178	3.0	1.25	7.08
Normal (≥-2sd)	52	1951	2.3	1.70	3.15

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	141	5219	4.9	3.94	6.14	1835	72684	68.6	65.36	71.65
Locality of school										
Urban	39	1418	4.9	3.16	7.66	508	18299	63.9	59.49	68.00
Rural	102	3801	4.9	3.80	6.33	1327	54386	70.3	66.68	73.76
Sex										
Boys	101	3479	6.6	5.34	8.11	1070	37504	71.0	67.02	74.74
Girls	40	1740	3.3	2.29	4.65	765	35180	66.2	62.30	69.82
Ethnicity										
Malay	118	4436	5.4	4.42	6.60	1483	59193	72.1	69.86	74.25
Chinese	14	474	2.8	1.52	5.07	237	8805	51.9	46.66	57.00
Indian	7	235	4.5	1.84	10.39	92	3706	70.2	58.45	79.82
Bumiputera Sabah						7	341	70.0	32.26	91.93
Bumiputera Sarawak						4	136	67.3	13.85	96.33
Others	2	75	8.0	2.01	26.81	12	503	53.8	39.16	67.87
School level										
Primary school	42	1792	4.6	3.11	6.80	591	27981	72.1	68.08	75.82
Secondary school	99	3427	5.1	3.91	6.64	1244	44703	66.6	62.56	70.32
Class										
Standard 4	20	866	6.6	3.96	10.86	204	10080	77.1	71.14	82.17
Standard 5	15	609	4.8	2.77	8.12	198	8351	65.5	56.85	73.23
Standard 6	7	317	2.4	0.94	6.20	189	9550	73.6	68.04	78.42
Form 1	16	592	4.4	2.38	7.82	246	9312	68.4	61.05	74.91
Form 2	26	977	7.3	4.74	11.11	236	9047	67.7	61.45	73.30
Form 3	18	543	4.0	2.29	7.01	268	8920	66.3	58.93	72.96
Form 4	20	650	4.9	2.89	8.27	253	8594	65.0	56.54	72.70
Form 5	19	664	4.9	3.11	7.69	241	8831	65.3	57.33	72.55
School session										
Morning session	72	2606	4.8	3.47	6.50	917	36285	66.3	62.38	70.00
Evening session	6	259	6.2	3.93	9.67	77	3270	78.5	68.55	85.95
Morning and evening session	63	2355	5.0	3.71	6.74	840	33080	70.4	66.09	74.37
BMI-for-age status (BAZ)										
Thinness (<-2sd)	16	583	9.7	5.50	16.67	100	3823	63.8	53.64	72.90
Normal (≥-2sd - ≤+1sd)	87	3195	4.9	3.74	6.42	1145	45463	69.9	66.22	73.30
Overweight (>+1sd - ≤+2sd)	20	764	4.6	2.93	7.21	283	11160	67.4	61.08	73.18
Obese (>+2sd)	18	677	3.7	2.40	5.75	302	12070	66.4	61.79	70.78
Height-for-age status (HAZ)										
Stunting (<-2sd)	7	257	3.8	2.08	6.85	120	4917	72.8	64.86	79.44
Normal (≥-2sd)	134	4962	5.0	3.98	6.26	1715	67768	68.3	65.01	71.42

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	
Melaka	702	28069	26.5	23.10	30.17
Locality of school					
Urban	252	8940	31.2	25.99	36.93
Rural	450	19129	24.7	20.97	28.94
Sex					
Boys	346	11815	22.4	18.39	26.94
Girls	356	16254	30.6	26.58	34.87
Ethnicity					
Malay	448	18461	22.5	20.39	24.74
Chinese	204	7703	45.4	40.30	50.51
Indian	36	1336	25.3	15.92	37.78
Bumiputera Sabah	4	147	30.0	8.07	67.74
Bumiputera Sarawak	2	66	32.7	3.67	86.15
Others	8	357	38.2	25.00	53.37
School level					
Primary school	176	9030	23.3	18.65	28.64
Secondary school	526	19039	28.3	24.19	32.91
Class					
Standard 4	39	2125	16.3	10.83	23.68
Standard 5	78	3790	29.7	20.80	40.51
Standard 6	59	3116	24.0	20.67	27.68
Form 1	102	3712	27.3	20.12	35.80
Form 2	85	3348	25.0	19.32	31.78
Form 3	120	3990	29.7	22.84	37.51
Form 4	113	3967	30.0	22.13	39.32
Form 5	106	4023	29.8	21.66	39.36
School session					
Morning session	402	15842	28.9	25.38	32.79
Evening session	16	637	15.3	8.09	27.02
Morning and evening session	283	11557	24.6	20.06	29.76
BMI-for-age status (BAZ)					
Thinness (<-2sd)	39	1584	26.4	16.59	39.38
Normal (≥-2sd - ≤+1sd)	406	16404	25.2	21.59	29.21
Overweight (>+1sd - ≤+2sd)	122	4629	28.0	21.84	35.03
Obese (>+2sd)	134	5422	29.8	25.56	34.51
Height-for-age status (HAZ)					
Stunting (<-2sd)	39	1584	23.4	17.15	31.16
Normal (≥-2sd)	663	26486	26.7	23.22	30.48

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1092	43786	57.3	53.50	61.03	624	24376	31.9	27.42	36.74
Locality of school										
Urban	305	10966	56.6	49.30	63.65	163	5869	30.3	20.57	42.18
Rural	787	32820	57.5	53.09	61.87	461	18507	32.4	27.67	37.62
Sex										
Boys	595	20680	51.6	47.65	55.46	394	14094	35.1	30.08	40.57
Girls	497	23106	63.6	57.82	69.09	230	10282	28.3	22.31	35.21
Ethnicity										
Malay	869	35135	56.2	52.14	60.26	504	19965	32.0	26.92	37.46
Chinese	159	5968	66.1	57.40	73.91	71	2474	27.4	18.90	37.99
Indian	50	2109	54.6	42.06	66.65	41	1577	40.8	28.34	54.64
Bumiputera Sabah	5	249	73.0	35.71	92.93					
Bumiputera Sarawak	2	75	55.4	8.19	94.55	2	61	44.6	5.45	91.81
Others	7	249	43.2	17.74	72.83	6	299	51.8	21.33	81.03
School level										
Primary school	343	16589	57.6	51.74	63.23	236	10655	37.0	31.36	43.00
Secondary school	749	27197	57.1	52.14	61.98	388	13720	28.8	23.48	34.82
Class										
Standard 4	127	6174	59.8	53.34	65.94	74	3594	34.8	27.80	42.54
Standard 5	100	4344	50.2	46.88	53.56	91	3728	43.1	39.10	47.17
Standard 6	116	6071	61.7	50.48	71.88	71	3334	33.9	25.51	43.47
Form 1	148	5615	58.0	49.28	66.22	75	2843	29.4	23.00	36.64
Form 2	159	6106	61.6	54.91	67.85	76	2887	29.1	22.31	37.00
Form 3	168	5682	60.7	52.55	68.27	86	2752	29.4	23.01	36.70
Form 4	139	4791	52.0	43.92	60.07	81	2769	30.1	21.45	40.42
Form 5	135	5003	53.0	44.26	61.60	70	2469	26.2	15.26	41.09
School session										
Morning session	535	21262	56.1	52.75	59.37	350	13614	35.9	32.59	39.38
Evening session	51	2104	60.2	48.35	70.95	24	1103	31.6	22.99	41.60
Morning and evening session	505	20372	58.3	51.85	64.44	250	9658	27.6	21.46	34.78
BMI-for-age status (BAZ)										
Thinness (<-2sd)	68	2602	60.7	49.03	71.32	36	1377	32.1	20.74	46.16
Normal (≥-2sd - ≤+1sd)	675	27291	57.0	52.30	61.53	393	15351	32.0	27.44	37.03
Overweight (>+1sd - ≤+2sd)	157	6243	53.5	45.85	60.92	102	4031	34.5	25.46	44.87
Obese (>+2sd)	189	7553	61.0	55.65	66.14	91	3545	28.6	23.48	34.42
Height-for-age status (HAZ)										
Stunting (<-2sd)	70	2946	57.5	47.52	66.85	38	1492	29.1	19.84	40.51
Normal (≥-2sd)	1022	40840	57.3	53.25	61.25	586	22883	32.1	27.50	37.08

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	112	3907	5.1	1.91	12.98	112	4340	5.7	4.47	7.20
Locality of school										
Urban	39	1357	7.0	2.13	20.64	31	1180	6.1	4.19	8.77
Rural	73	2551	4.5	1.15	15.90	81	3160	5.5	4.12	7.42
Sex										
Boys	81	2550	6.4	2.28	16.50	79	2781	6.9	5.53	8.66
Girls	31	1357	3.7	1.31	10.19	33	1559	4.3	2.78	6.58
Ethnicity										
Malay	109	3820	6.1	2.28	15.38	91	3551	5.7	4.44	7.25
Chinese						15	581	6.4	3.20	12.51
Indian	3	87	2.3	0.48	9.91	3	87	2.3	0.84	5.97
Bumiputera Sabah						2	92	27.0	7.07	64.29
Bumiputera Sarawak										
Others						1	29	5.0	0.80	25.28
School level										
Primary school	2	76	0.3	0.04	1.83	31	1486	5.2	3.91	6.79
Secondary school	110	3831	8.0	3.20	18.84	81	2854	6.0	4.32	8.27
Class										
Standard 4						11	557	5.4	2.68	10.57
Standard 5	1	39	0.5	0.06	3.13	13	540	6.2	4.25	9.07
Standard 6	1	37	0.4	0.06	2.32	7	390	4.0	1.44	10.46
Form 1	17	626	6.5	2.13	18.01	16	600	6.2	3.22	11.61
Form 2	11	431	4.3	1.46	12.19	13	492	5.0	3.10	7.85
Form 3	15	483	5.2	2.39	10.80	14	446	4.8	2.74	8.16
Form 4	34	1061	11.5	3.81	29.98	18	583	6.3	3.41	11.49
Form 5	33	1231	13.0	3.47	38.48	20	733	7.8	4.42	13.28
School session										
Morning session	35	1235	3.3	1.35	7.63	46	1798	4.7	3.54	6.32
Evening session	1	28	0.8	0.07	8.39	6	261	7.5	3.77	14.21
Morning and evening session	76	2645	7.6	2.28	22.28	60	2282	6.5	4.63	9.13
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	120	2.8	0.99	7.64	5	185	4.3	1.78	10.13
Normal (≥-2sd - ≤+1sd)	69	2351	4.9	1.56	14.40	77	2908	6.1	4.76	7.72
Overweight (>+1sd - ≤+2sd)	21	794	6.8	2.88	15.20	16	609	5.2	3.37	7.98
Obese (>+2sd)	18	642	5.2	1.85	13.73	14	638	5.2	2.32	11.04
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	432	8.4	3.04	21.29	7	256	5.0	2.76	8.87
Normal (≥-2sd)	101	3475	4.9	1.76	12.79	105	4084	5.7	4.40	7.43

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	48	1809	1.7	1.15	2.52	2218	88375	83.3	80.12	86.04
Locality of school										
Urban	14	529	1.8	0.88	3.80	616	22414	77.8	70.44	83.67
Rural	34	1280	1.7	1.04	2.62	1602	65961	85.4	82.63	87.71
Sex										
Boys	37	1353	2.6	1.77	3.68	1245	43727	82.5	77.82	86.44
Girls	11	456	0.9	0.38	1.91	973	44647	84.0	80.38	87.10
Ethnicity										
Malay	42	1587	1.9	1.31	2.84	1781	71667	87.2	85.06	89.11
Chinese	4	146	0.9	0.35	2.11	292	10960	64.5	60.86	68.06
Indian	1	34	0.6	0.07	5.68	117	4623	86.7	77.52	92.44
Bumiputera Sabah			0.0	0.00	0.00	8	369	75.6	38.88	93.81
Bumiputera Sarawak	1	42	20.6	3.39	65.63	4	127	62.9	24.33	89.92
Others			0.0	0.00	0.00	16	628	67.3	35.96	88.26
School level										
Primary school	21	872	2.2	1.19	4.16	706	33690	86.5	83.27	89.19
Secondary school	27	936	1.4	0.90	2.15	1512	54685	81.4	77.16	85.05
Class										
Standard 4	9	375	2.9	1.25	6.41	231	11482	87.5	84.95	89.66
Standard 5	9	362	2.8	1.28	6.13	251	10851	84.7	75.79	90.78
Standard 6	3	135	1.0	0.38	2.79	224	11357	87.2	82.33	90.91
Form 1	7	255	1.9	0.97	3.58	289	10919	80.2	72.12	86.37
Form 2	6	234	1.8	0.92	3.31	290	11157	83.7	78.79	87.62
Form 3	7	215	1.6	0.87	2.93	322	10742	79.8	73.21	85.17
Form 4	4	124	0.9	0.30	2.89	314	10806	81.8	77.10	85.71
Form 5	3	108	0.8	0.22	2.82	297	11061	81.6	72.63	88.18
School session										
Morning session	28	1016	1.9	1.15	2.97	1136	45159	82.3	77.99	85.95
Evening session	3	118	2.8	1.24	6.16	88	3701	87.9	80.35	92.79
Morning and evening session	17	675	1.4	0.75	2.75	992	39433	84.0	80.41	87.00
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	71	1.2	0.29	4.81	130	5019	83.8	73.36	90.66
Normal (≥-2sd - ≤+1sd)	32	1200	1.8	1.21	2.80	1366	54608	83.8	80.69	86.50
Overweight (>+1sd - ≤+2sd)	9	336	2.0	1.02	4.00	347	13667	82.4	76.38	87.12
Obese (>+2sd)	5	201	1.1	0.48	2.53	371	14942	82.2	78.26	85.62
Height-for-age status (HAZ)										
Stunting (<-2sd)	4	154	2.3	0.89	5.72	139	5574	82.5	74.79	88.21
Normal (≥-2sd)	44	1654	1.7	1.10	2.51	2079	82800	83.3	80.12	86.13

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

Characteristics	Frequency of fast food consumption per week				
	Did not ate fast food				
	Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
Melaka	415	15925	15.0	12.09	18.48
Locality of school					
Urban	173	5885	20.4	14.11	28.61
Rural	242	10040	13.0	10.40	16.12
Sex					
Boys	239	7893	14.9	10.80	20.20
Girls	176	8032	15.1	12.01	18.86
Ethnicity					
Malay	228	8913	10.8	8.97	13.07
Chinese	159	5875	34.6	31.21	38.15
Indian	18	679	12.7	7.07	21.83
Bumiputera Sabah	3	119	24.4	6.19	61.12
Bumiputera Sarawak	1	33	16.5	1.57	71.18
Others	6	306	32.7	11.74	64.04
School level					
Primary school	85	4387	11.3	7.80	15.99
Secondary school	330	11538	17.2	13.62	21.44
Class					
Standard 4	24	1266	9.6	7.93	11.69
Standard 5	32	1592	12.4	6.06	23.82
Standard 6	29	1529	11.7	7.57	17.77
Form 1	68	2442	17.9	12.00	25.93
Form 2	50	1942	14.6	10.58	19.72
Form 3	77	2496	18.6	13.39	25.12
Form 4	68	2281	17.3	13.26	22.16
Form 5	67	2378	17.6	11.20	26.44
School session					
Morning session	230	8684	15.8	12.10	20.44
Evening session	9	393	9.3	4.41	18.62
Morning and evening session	176	6849	14.6	11.32	18.59
BMI-for-age status (BAZ)					
Thinness (<-2sd)	23	900	15.0	8.23	25.82
Normal (≥-2sd - ≤+1sd)	242	9353	14.4	11.49	17.79
Overweight (>+1sd - ≤+2sd)	70	2586	15.6	10.80	21.97
Obese (>+2sd)	78	3027	16.7	13.10	20.96
Height-for-age status (HAZ)					
Stunting (<-2sd)	23	1029	15.2	9.98	22.55
Normal (≥-2sd)	392	14896	15.0	12.02	18.55

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

Table 3.4.17 : Practice of bringing 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	
Melaka	275	11221	10.6	8.23	13.48	1413	56752	53.5	49.33	57.55
Locality of school										
Urban	117	4126	14.3	10.54	19.15	404	14699	51.0	44.60	57.34
Rural	158	7096	9.2	6.62	12.58	1009	42053	54.4	49.34	59.34
Sex										
Boys	159	5722	10.8	8.35	13.85	728	25529	48.2	42.84	53.53
Girls	116	5499	10.3	7.67	13.82	685	31223	58.7	54.07	63.27
Ethnicity										
Malay	163	6607	8.0	6.51	9.90	1082	44291	53.9	48.71	59.01
Chinese	83	3348	19.7	15.37	24.93	242	8990	52.9	47.94	57.88
Indian	25	1087	20.2	12.34	31.34	75	2936	54.6	47.48	61.59
Bumiputera Sabah	1	78	16.1	1.79	66.82	4	139	28.5	8.30	63.69
Bumiputera Sarawak	1	27	13.4	1.25	65.61	1	42	20.6	3.39	65.63
Others	2	74	7.9	1.54	32.04	9	354	38.0	13.43	70.69
School level										
Primary school	85	4455	11.4	7.60	16.89	499	23356	60.0	52.59	67.00
Secondary school	190	6766	10.1	7.37	13.60	914	33396	49.7	46.63	52.71
Class										
Standard 4	34	1696	12.9	10.52	15.79	159	7653	58.3	50.24	66.00
Standard 5	30	1513	11.8	6.50	20.61	182	7763	60.8	51.99	68.87
Standard 6	21	1246	9.6	4.29	20.02	158	7940	61.0	53.21	68.23
Form 1	44	1612	11.8	7.60	17.97	186	7023	51.6	47.73	55.41
Form 2	34	1281	9.6	6.85	13.25	150	5747	43.0	36.75	49.43
Form 3	41	1331	9.9	6.33	15.14	196	6551	48.7	45.16	52.24
Form 4	37	1334	10.1	6.94	14.39	189	6639	50.1	42.95	57.26
Form 5	34	1208	8.9	3.53	20.76	193	7436	54.9	47.73	61.85
School session										
Morning session	142	5604	10.2	8.18	12.69	761	30157	55.0	50.08	59.77
Evening session	5	186	4.4	1.44	12.75	44	1877	44.6	32.79	57.02
Morning and evening session	127	5384	11.5	7.80	16.52	607	24685	52.5	47.26	57.71
BMI-for-age status (BAZ)										
Thinness (<-2sd)	22	865	14.4	8.78	22.85	84	3354	56.0	44.42	66.97
Normal (≥-2sd - ≤+1sd)	169	7010	10.8	8.10	14.13	867	34984	53.6	49.35	57.89
Overweight (>+1sd - ≤+2sd)	43	1605	9.7	6.69	13.78	224	8842	53.3	48.13	58.40
Obese (>+2sd)	40	1711	9.4	6.03	14.42	236	9496	52.3	45.61	58.85
Height-for-age status (HAZ)										
Stunting (<-2sd)	17	673	10.0	6.22	15.57	93	3930	58.2	48.69	67.07
Normal (≥-2sd)	258	10548	10.6	8.28	13.50	1320	52822	53.1	48.83	57.41

Table 3.4.17 : Practice of bringing 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
Melaka	995	38182	36.0	31.78	40.39
Locality of school					
Urban	282	10003	34.7	27.15	43.11
Rural	713	28179	36.4	31.50	41.69
Sex					
Boys	635	21753	41.0	34.99	47.37
Girls	360	16429	30.9	26.48	35.72
Ethnicity					
Malay	807	31277	38.1	32.95	43.45
Chinese	130	4643	27.3	23.94	31.03
Indian	37	1352	25.2	18.82	32.76
Bumiputera Sabah	6	270	55.4	22.44	84.24
Bumiputera Sarawak	4	134	66.0	27.19	90.98
Others	11	506	54.1	22.16	83.04
School level					
Primary school	228	11108	28.5	24.78	32.62
Secondary school	767	27074	40.3	35.81	44.89
Class					
Standard 4	71	3771	28.7	21.15	37.75
Standard 5	80	3503	27.4	23.28	31.97
Standard 6	77	3834	29.4	24.17	35.34
Form 1	134	4981	36.6	29.83	43.91
Form 2	163	6344	47.4	39.48	55.53
Form 3	169	5571	41.4	35.28	47.81
Form 4	161	5276	39.8	30.75	49.65
Form 5	140	4902	36.2	27.42	45.98
School session					
Morning session	491	19097	34.8	30.53	39.36
Evening session	51	2148	51.0	35.99	65.84
Morning and evening session	453	16937	36.0	29.99	42.55
BMI-for-age status (BAZ)					
Thinness (<-2sd)	49	1770	29.5	21.64	38.91
Normal (\geq -2sd - \leq +1sd)	606	23216	35.6	30.51	41.04
Overweight (>+1sd - \leq +2sd)	159	6143	37.0	31.71	42.68
Obese (>+2sd)	178	6960	38.3	33.94	42.87
Height-for-age status (HAZ)					
Stunting (<-2sd)	56	2154	31.9	23.61	41.47
Normal (\geq -2sd)	939	36028	36.2	31.96	40.76

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	675	27239	40.8	36.99	44.82	342	13960	20.9	18.66	23.40
Locality of school										
Urban	180	6426	34.5	27.01	42.90	103	3755	20.2	16.92	23.88
Rural	495	20813	43.3	39.83	46.82	239	10205	21.2	18.41	24.35
Sex										
Boys	371	13070	43.0	37.07	49.16	154	5459	18.0	15.25	21.04
Girls	304	14169	39.0	34.95	43.29	188	8501	23.4	19.89	27.38
Ethnicity										
Malay	552	22192	44.5	40.80	48.28	266	11179	22.4	20.40	24.59
Chinese	94	3857	31.4	23.89	40.13	54	1902	15.5	10.75	21.85
Indian	24	964	24.8	15.82	36.72	21	842	21.7	12.55	34.80
Bumiputera Sabah	2	112	51.6	9.68	91.38					
Bumiputera Sarawak										
Others	3	113	26.4	5.26	69.86	1	37	8.6	0.94	48.08
School level										
Primary school	248	11680	42.8	37.93	47.76	125	5861	21.5	17.30	26.32
Secondary school	427	15558	39.5	34.22	45.05	217	8099	20.6	18.22	23.14
Class										
Standard 4	73	3523	38.5	31.47	46.00	39	1819	19.9	14.22	27.04
Standard 5	92	3942	43.2	35.48	51.27	48	2052	22.5	16.70	29.60
Standard 6	83	4216	46.7	37.78	55.86	38	1990	22.1	17.24	27.76
Form 1	89	3356	39.5	33.49	45.94	43	1589	18.7	13.73	25.01
Form 2	66	2476	36.3	27.66	46.02	39	1573	23.1	17.13	30.38
Form 3	84	2848	37.4	30.22	45.23	46	1576	20.7	14.67	28.41
Form 4	95	3304	41.8	31.66	52.70	44	1546	19.6	14.33	26.12
Form 5	93	3573	41.7	31.77	52.38	45	1815	21.2	14.88	29.24
School session										
Morning session	356	14057	40.1	35.38	44.97	191	7712	22.0	19.35	24.88
Evening session	19	846	41.0	27.77	55.70	6	264	12.8	6.00	25.27
Morning and evening session	300	12335	41.8	37.57	46.18	145	5984	20.3	17.20	23.77
BMI-for-age status (BAZ)										
Thinness (<-2sd)	42	1692	40.5	28.14	54.12	20	749	17.9	10.12	29.70
Normal (≥-2sd - ≤+1sd)	420	17010	41.4	36.87	46.05	202	8284	20.2	17.51	23.09
Overweight (>+1sd - ≤+2sd)	93	3711	36.0	29.90	42.65	60	2510	24.4	17.83	32.36
Obese (>+2sd)	119	4788	43.5	39.15	48.05	59	2387	21.7	16.62	27.84
Height-for-age status (HAZ)										
Stunting (<-2sd)	47	1921	42.2	32.60	52.40	24	1081	23.7	17.66	31.12
Normal (≥-2sd)	628	25318	40.7	36.75	44.88	318	12879	20.7	18.37	23.31

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	
Melaka	536	20960	31.4	25.54	37.99	177	7376	11.1	8.68	14.00
Locality of school										
Urban	218	7556	40.6	28.35	54.14	47	1949	10.5	5.27	19.73
Rural	318	13404	27.9	22.42	34.10	130	5427	11.3	9.01	14.06
Sex										
Boys	264	8833	29.1	22.03	37.27	91	3371	11.1	7.62	15.87
Girls	272	12127	33.4	27.30	40.14	86	4005	11.0	8.12	14.83
Ethnicity										
Malay	289	11724	23.5	20.28	27.09	158	6682	13.4	10.76	16.57
Chinese	201	7472	60.9	51.07	69.96	9	282	2.3	1.09	4.79
Indian	38	1447	37.2	27.42	48.23	9	379	9.7	4.32	20.51
Bumiputera Sabah	2	75	34.7	8.30	75.70	1	34	15.5	1.46	69.27
Bumiputera Sarawak	1	27	100.0	100.00	100.00			0.0	0.00	0.00
Others	5	214	49.9	18.30	81.57			0.0	0.00	0.00
School level										
Primary school	133	6516	23.9	19.55	28.79	75	3564	13.1	9.16	18.27
Secondary school	403	14444	36.7	28.98	45.13	102	3812	9.7	7.15	12.98
Class										
Standard 4	40	1918	21.0	13.30	31.41	22	1092	11.9	7.06	19.45
Standard 5	48	2264	24.8	17.31	34.23	29	1223	13.4	9.58	18.43
Standard 6	45	2333	25.9	21.26	31.05	24	1249	13.8	8.35	22.06
Form 1	80	2977	35.1	24.68	47.12	27	1035	12.2	6.76	21.01
Form 2	64	2422	35.5	25.49	47.06	13	481	7.1	4.22	11.60
Form 3	92	3082	40.5	32.40	49.12	24	788	10.4	6.62	15.83
Form 4	79	2755	34.9	25.60	45.43	26	1009	12.8	6.44	23.75
Form 5	88	3208	37.5	22.73	54.94	12	499	5.8	3.31	10.05
School session										
Morning session	300	11626	33.1	26.66	40.35	93	3824	10.9	8.09	14.54
Evening session	13	537	26.0	18.46	35.38	5	199	9.6	3.70	22.81
Morning and evening session	223	8797	29.8	23.38	37.17	79	3353	11.4	8.84	14.50
BMI-for-age status (BAZ)										
Thinness (<-2sd)	35	1314	31.4	19.68	46.16	11	448	10.7	5.04	21.35
Normal (≥-2sd - ≤+1sd)	347	13689	33.3	26.75	40.59	108	4642	11.3	8.86	14.29
Overweight (>+1sd - ≤+2sd)	89	3331	32.3	26.37	38.95	26	1012	9.8	7.35	13.02
Obese (>+2sd)	64	2587	23.5	18.62	29.25	32	1273	11.6	7.03	18.50
Height-for-age status (HAZ)										
Stunting (<-2sd)	33	1370	30.1	23.21	38.00	13	488	10.7	6.96	16.18
Normal (≥-2sd)	503	19590	31.5	25.44	38.33	164	6888	11.1	8.59	14.20

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									
	Biscuit					Fruits				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
Melaka	159	6332	9.5	6.36	13.95	51	2413	3.6	2.12	6.11
Locality of school										
Urban	70	2709	14.6	6.97	27.90	13	559	3.0	1.15	7.61
Rural	89	3623	7.5	5.21	10.79	38	1854	3.9	2.05	7.13
Sex										
Boys	65	2223	7.3	5.22	10.16	24	1024	3.4	1.83	6.12
Girls	94	4109	11.3	6.91	18.00	27	1389	3.8	2.16	6.69
Ethnicity										
Malay	113	4573	9.2	5.42	15.10	40	1819	3.6	2.21	5.97
Chinese	36	1354	11.0	7.14	16.69	7	354	2.9	1.17	6.97
Indian	9	377	9.7	6.02	15.27	3	203	5.2	1.73	14.71
Bumiputera Sabah			0.0	0.00	0.00			0.0	0.00	0.00
Bumiputera Sarawak			0.0	0.00	0.00			0.0	0.00	0.00
Others	1	28	6.5	0.70	40.44	1	37	8.7	0.95	48.30
School level										
Primary school	35	1602	5.9	3.83	8.89	31	1688	6.2	3.47	10.79
Secondary school	124	4730	12.0	7.46	18.79	20	725	1.8	1.03	3.26
Class										
Standard 4	14	670	7.3	3.85	13.49	13	732	8.0	3.93	15.61
Standard 5	12	532	5.8	3.53	9.48	12	613	6.7	3.48	12.57
Standard 6	9	400	4.4	1.93	9.83	6	343	3.8	2.04	6.99
Form 1	23	859	10.1	5.71	17.32	6	229	2.7	1.16	6.14
Form 2	14	570	8.4	2.77	22.69	2	66	1.0	0.25	3.73
Form 3	16	561	7.4	3.56	14.64	3	111	1.5	0.45	4.63
Form 4	37	1365	17.3	9.97	28.25	3	95	1.2	0.37	3.80
Form 5	34	1375	16.0	10.19	24.36	6	224	2.6	1.21	5.57
School session										
Morning session	75	2962	8.4	6.12	11.54	29	1354	3.9	2.13	6.91
Evening session	4	140	6.8	1.24	29.57	1	40	1.9	0.18	17.70
Morning and evening session	80	3231	11.0	6.29	18.39	21	1020	3.5	1.92	6.15
BMI-for-age status (BAZ)										
Thinness (<-2sd)	9	354	8.5	3.59	18.70	8	354	8.5	4.21	16.34
Normal (≥-2sd - ≤+1sd)	89	3510	8.5	5.35	13.37	33	1575	3.8	2.07	6.98
Overweight (>+1sd - ≤+2sd)	35	1411	13.7	8.33	21.70	4	175	1.7	0.67	4.27
Obese (>+2sd)	26	1056	9.6	5.74	15.65	6	309	2.8	0.86	8.75
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	342	7.5	3.40	15.81	4	164	3.6	1.09	11.19
Normal (≥-2sd)	151	5989	9.6	6.41	14.24	47	2250	3.6	2.05	6.32

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
Melaka	112	4270	6.4	4.99	8.19
Locality of school					
Urban	32	1093	5.9	3.66	9.31
Rural	80	3177	6.6	4.94	8.78
Sex					
Boys	71	2447	8.1	5.64	11.37
Girls	41	1823	5.0	3.28	7.62
Ethnicity					
Malay	77	2901	5.8	4.20	8.00
Chinese	27	1112	9.1	5.73	14.05
Indian	7	228	5.9	3.05	11.00
Bumiputera Sabah	1	30	13.7	2.17	53.33
Bumiputera Sarawak			0.0	0.00	0.00
Others			0.0	0.00	0.00
School level					
Primary school	34	1551	5.7	3.09	10.20
Secondary school	78	2719	6.9	5.79	8.22
Class					
Standard 4	16	753	8.2	4.09	15.84
Standard 5	11	396	4.3	2.05	8.96
Standard 6	7	402	4.5	1.51	12.43
Form 1	16	570	6.7	4.38	10.17
Form 2	14	557	8.2	5.68	11.62
Form 3	18	536	7.0	4.61	10.64
Form 4	15	553	7.0	5.36	9.08
Form 5	15	503	5.9	3.30	10.24
School session					
Morning session	58	2153	6.1	4.51	8.30
Evening session	5	190	9.2	3.90	20.28
Morning and evening session	48	1878	6.4	4.61	8.74
BMI-for-age status (BAZ)					
Thinness (<-2sd)	10	371	8.9	4.96	15.39
Normal (\geq -2sd - \leq +1sd)	60	2277	5.5	4.36	7.01
Overweight ($>$ +1sd - \leq +2sd)	18	602	5.8	3.49	9.62
Obese ($>$ +2sd)	24	1020	9.3	5.86	14.39
Height-for-age status (HAZ)					
Stunting (<-2sd)	8	290	6.4	2.54	15.08
Normal (\geq -2sd)	104	3980	6.4	4.96	8.23

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1445	58219	54.9	49.45	60.15	796	31397	29.6	25.46	34.07
Locality of school										
Urban	478	17432	60.5	56.00	64.77	189	6825	23.7	17.67	30.96
Rural	967	40786	52.8	45.91	59.51	607	24571	31.8	27.20	36.76
Sex										
Boys	729	25753	48.6	40.93	56.32	469	16400	30.9	25.69	36.73
Girls	716	32466	61.1	55.44	66.49	327	14996	28.2	23.68	33.26
Ethnicity										
Malay	1011	41899	50.9	45.42	56.45	715	28155	34.2	30.97	37.66
Chinese	311	11400	67.5	57.34	76.19	50	2007	11.9	9.34	14.99
Indian	100	3958	73.6	68.35	78.33	22	849	15.8	11.46	21.39
Bumiputera Sabah	7	317	65.0	36.90	85.55	3	126	25.7	7.87	58.45
Bumiputera Sarawak	3	102	50.6	15.84	84.74					
Others	13	543	58.2	30.19	81.71	6	259	27.8	9.33	58.95
School level										
Primary school	457	21967	56.5	51.70	61.13	270	12425	31.9	26.49	37.95
Secondary school	988	36252	53.9	45.92	61.72	526	18972	28.2	22.84	34.30
Class										
Standard 4	151	7531	57.4	49.61	64.83	82	3718	28.3	19.21	39.67
Standard 5	163	6927	54.3	46.31	62.09	97	4349	34.1	30.67	37.70
Standard 6	143	7509	57.7	48.57	66.28	91	4357	33.5	24.54	43.75
Form 1	192	7181	52.7	44.07	61.25	111	4232	31.1	23.22	40.21
Form 2	161	6216	46.5	35.90	57.40	105	4118	30.8	24.02	38.52
Form 3	231	7717	57.4	45.66	68.31	107	3636	27.0	19.88	35.61
Form 4	206	7493	56.6	46.14	66.42	107	3449	26.0	21.75	30.83
Form 5	198	7644	56.4	39.96	71.60	96	3536	26.1	16.93	37.97
School session										
Morning session	777	30995	56.5	51.38	61.49	402	15667	28.6	23.85	33.79
Evening session	42	1676	39.8	22.10	60.66	39	1741	41.3	27.30	56.95
Morning and evening session	624	25465	54.2	46.76	61.46	355	13989	29.8	25.52	34.41
BMI-for-age status (BAZ)										
Thinness (<-2sd)	81	3233	54.0	45.63	62.12	52	1976	33.0	24.24	43.12
Normal (≥-2sd - ≤+1sd)	852	34593	53.1	46.93	59.11	496	19714	30.2	25.31	35.68
Overweight (>+1sd - ≤+2sd)	241	9487	57.2	50.79	63.36	122	4770	28.8	23.72	34.37
Obese (>+2sd)	267	10776	59.3	53.16	65.19	125	4898	27.0	22.45	32.00
Height-for-age status (HAZ)										
Stunting (<-2sd)	78	3318	49.1	41.73	56.52	65	2525	37.4	29.13	46.41
Normal (≥-2sd)	1367	54901	55.2	49.66	60.70	731	28871	29.1	24.86	33.64

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

Characteristics	Bring drinks to school practices				
	Count	Estimated Population	Never Prevalence (%)	95% CI	
				Lower	Upper
Melaka	442	16517	15.6	12.29	19.51
Locality of school					
Urban	136	4570	15.9	11.19	21.99
Rural	306	11947	15.5	11.46	20.52
Sex					
Boys	324	10851	20.5	15.49	26.56
Girls	118	5666	10.7	7.82	14.39
Ethnicity					
Malay	327	12182	14.8	11.41	19.02
Chinese	93	3491	20.7	13.48	30.33
Indian	15	567	10.6	6.26	17.27
Bumiputera Sabah	1	45	9.2	1.21	45.65
Bumiputera Sarawak	3	100	49.4	15.26	84.16
Others	3	131	14.1	5.64	30.99
School level					
Primary school	85	4505	11.6	7.35	17.78
Secondary school	357	12012	17.9	14.06	22.44
Class					
Standard 4	31	1871	14.3	7.47	25.54
Standard 5	32	1479	11.6	7.70	17.10
Standard 6	22	1154	8.9	6.46	12.06
Form 1	61	2203	16.2	11.37	22.51
Form 2	81	3038	22.7	16.25	30.81
Form 3	68	2099	15.6	10.96	21.72
Form 4	74	2307	17.4	11.43	25.61
Form 5	73	2366	17.5	11.21	26.18
School session					
Morning session	215	8195	14.9	11.44	19.27
Evening session	19	794	18.8	13.15	26.27
Morning and evening session	208	7529	16.0	11.79	21.41
BMI-for-age status (BAZ)					
Thinness (<-2sd)	22	780	13.0	8.19	20.06
Normal (≥-2sd - ≤+1sd)	294	10881	16.7	13.28	20.78
Overweight (>+1sd - ≤+2sd)	63	2332	14.1	10.18	19.10
Obese (>+2sd)	62	2494	13.7	9.53	19.37
Height-for-age status (HAZ)					
Stunting (<-2sd)	23	914	13.5	7.75	22.57
Normal (≥-2sd)	419	15603	15.7	12.29	19.84

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
Melaka	2079	83414	93.1	91.14	94.70	154	6132	6.8	5.46	8.55
Locality of school										
Urban	622	22677	93.7	90.13	96.01	52	1886	7.8	5.01	11.93
Rural	1457	60737	92.9	90.43	94.81	102	4246	6.5	5.01	8.38
Sex										
Boys	1091	38445	91.3	88.59	93.43	83	2880	6.8	5.31	8.77
Girls	988	44969	94.7	92.34	96.43	71	3252	6.9	5.10	9.14
Ethnicity										
Malay	1598	65143	93.1	90.85	94.77	122	4822	6.9	5.36	8.81
Chinese	342	12628	94.2	90.08	96.66	24	1043	7.8	5.10	11.70
Indian	108	4340	90.3	79.11	95.80	8	266	5.5	2.36	12.44
Bumiputera Sabah	9	398	89.8	45.72	98.94					
Bumiputera Sarawak	3	102	100.0	0.00	100.00					
Others	19	802	100.0	0.00	100.00					
School level										
Primary school	666	31664	92.2	90.94	93.31	61	2822	8.2	6.44	10.44
Secondary school	1413	51750	93.7	90.44	95.91	93	3309	6.0	4.32	8.26
Class										
Standard 4	206	9974	89.1	85.63	91.77	20	940	8.4	5.24	13.18
Standard 5	232	10060	89.2	82.69	93.47	30	1427	12.7	6.59	22.93
Standard 6	228	11631	98.0	94.24	99.34	11	455	3.8	1.78	8.07
Form 1	280	10593	92.8	85.16	96.67	21	783	6.9	4.48	10.36
Form 2	245	9501	91.9	85.00	95.82	19	759	7.3	3.52	14.69
Form 3	312	10577	93.2	88.67	95.94	25	808	7.1	5.12	9.82
Form 4	295	10365	94.7	87.68	97.85	19	638	5.8	3.31	10.08
Form 5	281	10715	95.8	92.68	97.66	9	320	2.9	1.50	5.41
School session										
Morning session	1097	43499	93.3	91.44	94.82	89	3355	7.2	5.31	9.68
Evening session	71	2969	86.9	73.74	93.99	5	214	6.3	3.51	10.93
Morning and evening session	909	36864	93.4	89.97	95.76	60	2563	6.5	4.50	9.28
BMI-for-age status (BAZ)										
Thinness (<-2sd)	121	4833	92.8	85.12	96.64	14	525	10.1	5.38	18.08
Normal (≥-2sd - ≤+1sd)	1244	50278	92.6	90.30	94.36	92	3689	6.8	5.30	8.67
Overweight (>+1sd - ≤+2sd)	344	13540	95.3	90.92	97.64	22	834	5.9	3.84	8.88
Obese (>+2sd)	366	14633	93.4	90.05	95.62	26	1084	6.9	5.10	9.31
Height-for-age status (HAZ)										
Stunting (<-2sd)	133	5498	94.1	88.99	96.92	14	506	8.7	5.06	14.40
Normal (≥-2sd)	1946	77916	93.1	91.04	94.66	140	5626	6.7	5.31	8.47

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									
	Carbonated drink					Milk/ cultured drink				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
Melaka	21	765	0.9	0.50	1.47	75	3095	3.5	2.56	4.66
Locality of school										
Urban	7	233	1.0	0.26	3.44	19	730	3.0	1.89	4.77
Rural	14	532	0.8	0.47	1.39	56	2366	3.6	2.51	5.19
Sex										
Boys	16	554	1.3	0.65	2.63	37	1303	3.1	2.15	4.43
Girls	5	211	0.4	0.19	1.03	38	1792	3.8	2.49	5.69
Ethnicity										
Malay	16	566	0.8	0.46	1.43	59	2399	3.4	2.38	4.91
Chinese	1	26	0.2	0.02	1.63	13	589	4.4	2.88	6.64
Indian	3	95	2.0	0.51	7.35	3	107	2.2	0.46	10.15
Bumiputera Sabah										
Bumiputera Sarawak										
Others	1	78	9.8	1.07	51.96					
School level										
Primary school	8	327	1.0	0.46	1.96	33	1486	4.3	2.66	6.96
Secondary school	13	438	0.8	0.36	1.72	42	1609	2.9	2.11	4.00
Class										
Standard 4	2	75	0.7	0.21	2.08	9	426	3.8	3.16	4.58
Standard 5	4	132	1.2	0.28	4.85	20	892	7.9	4.22	14.34
Standard 6	2	120	1.0	0.25	3.96	4	168	1.4	0.37	5.18
Form 1	2	67	0.6	0.07	4.69	9	315	2.8	1.47	5.12
Form 2	3	118	1.1	0.39	3.31	6	263	2.5	1.08	5.89
Form 3	6	173	1.5	0.58	3.91	7	209	1.8	0.91	3.70
Form 4			0.0	0.00	0.00	11	425	3.9	2.04	7.25
Form 5	2	80	0.7	0.19	2.68	9	397	3.6	1.74	7.10
School session										
Morning session	9	353	0.8	0.37	1.57	43	1720	3.7	2.45	5.53
Evening session	1	28	0.8	0.07	8.52	5	250	7.3	2.77	17.95
Morning and evening session	11	384	1.0	0.46	2.03	27	1125	2.9	2.05	3.95
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	69	1.3	0.32	5.29	3	111	2.1	0.61	7.14
Normal (≥-2sd - ≤+1sd)	12	462	0.9	0.49	1.49	55	2263	4.2	3.11	5.56
Overweight (>+1sd - ≤+2sd)	4	146	1.0	0.37	2.78	8	334	2.3	0.85	6.29
Obese (>+2sd)	3	88	0.6	0.18	1.74	9	387	2.5	1.39	4.36
Height-for-age status (HAZ)										
Stunting (<-2sd)	2	80	1.4	0.33	5.49	6	242	4.2	2.00	8.40
Normal (≥-2sd)	19	685	0.8	0.46	1.44	69	2853	3.4	2.50	4.64

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
Melaka	24	938	1.0	0.68	1.61
Locality of school					
Urban	7	251	1.0	0.62	1.71
Rural	17	687	1.1	0.60	1.84
Sex					
Boys	19	677	1.6	1.02	2.52
Girls	5	261	0.6	0.23	1.29
Ethnicity					
Malay	18	632	0.9	0.53	1.54
Chinese	2	158	1.2	0.16	8.26
Indian	2	73	1.5	0.38	5.85
Bumiputera Sabah	1	45	10.2	1.06	54.28
Bumiputera Sarawak					
Others	1	30	3.7	0.39	27.69
School level					
Primary school	10	479	1.4	0.72	2.69
Secondary school	14	459	0.8	0.52	1.34
Class					
Standard 4	2	75	0.7	0.21	2.08
Standard 5	5	229	2.0	0.90	4.52
Standard 6	3	175	1.5	0.52	4.15
Form 1	4	146	1.3	0.52	3.11
Form 2			0.0	0.00	0.00
Form 3	6	187	1.6	0.84	3.23
Form 4	3	98	0.9	0.30	2.60
Form 5	1	28	0.3	0.03	2.11
School session					
Morning session	5	221	0.5	0.20	1.10
Evening session	2	69	2.0	0.80	5.09
Morning and evening session	17	648	1.6	1.06	2.53
BMI-for-age status (BAZ)					
Thinness (<-2sd)	1	28	0.5	0.06	4.35
Normal (≥-2sd - ≤+1sd)	11	450	0.8	0.45	1.53
Overweight (>+1sd - ≤+2sd)	3	123	0.9	0.23	3.23
Obese (>+2sd)	9	338	2.2	1.17	3.93
Height-for-age status (HAZ)					
Stunting (<-2sd)					
Normal (≥-2sd)	24	938	1.1	0.72	1.74

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1638	64492	62.3	59.42	65.05	79	3074	3.0	2.11	4.17
Locality of school										
Urban	476	17123	60.8	57.29	64.18	30	1096	3.9	2.15	6.95
Rural	1162	47369	62.8	59.16	66.36	49	1977	2.6	1.77	3.87
Sex										
Boys	922	32076	61.8	58.64	64.95	49	1714	3.3	2.27	4.78
Girls	716	32416	62.7	58.63	66.61	30	1359	2.6	1.65	4.16
Ethnicity										
Malay	1324	53047	65.8	63.10	68.39	49	1927	2.4	1.56	3.65
Chinese	227	8014	49.5	41.94	57.17	16	564	3.5	2.35	5.13
Indian	64	2466	47.6	37.28	58.19	14	583	11.3	5.77	20.79
Bumiputera Sabah	10	454	93.1	56.47	99.29					
Bumiputera Sarawak	2	61	30.4	14.62	52.63					
Others	11	449	50.1	33.49	66.77					
School level										
Primary school	498	23334	61.3	55.36	66.86	29	1359	3.6	2.32	5.46
Secondary school	1140	41158	62.9	59.95	65.69	50	1714	2.6	1.60	4.27
Class										
Standard 4	150	7367	57.3	52.03	62.34	8	382	3.0	1.35	6.40
Standard 5	185	7787	62.4	50.56	72.93	16	719	5.8	4.13	7.98
Standard 6	163	8180	64.2	55.91	71.71	5	257	2.0	1.22	3.34
Form 1	213	8043	60.9	54.41	66.99	15	526	4.0	1.51	10.13
Form 2	228	8893	68.5	61.95	74.41	11	411	3.2	1.85	5.36
Form 3	268	8924	68.3	62.58	73.58	8	235	1.8	0.80	3.99
Form 4	225	7617	58.6	55.61	61.57	10	334	2.6	0.93	6.89
Form 5	206	7682	58.1	50.55	65.20	6	208	1.6	0.68	3.62
School session										
Morning session	851	33265	62.0	58.64	65.33	37	1426	2.7	1.65	4.27
Evening session	72	3054	73.2	60.21	83.14	3	122	2.9	0.95	8.63
Morning and evening session	714	28139	61.5	58.26	64.68	39	1526	3.3	2.21	5.01
BMI-for-age status (BAZ)										
Thinness (<-2sd)	93	3577	63.3	54.25	71.57	1	53	0.9	0.11	7.59
Normal (≥-2sd - ≤+1sd)	1037	40898	64.1	61.12	67.07	55	2105	3.3	2.20	4.94
Overweight (>+1sd - ≤+2sd)	256	9973	61.4	56.71	65.94	8	296	1.8	0.87	3.80
Obese (>+2sd)	250	9978	56.2	50.25	61.95	14	581	3.3	1.78	5.92
Height-for-age status (HAZ)										
Stunting (<-2sd)	115	4654	70.8	64.20	76.55	2	84	1.3	0.28	5.55
Normal (≥-2sd)	1523	59838	61.7	58.48	64.81	77	2990	3.1	2.20	4.31

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									
	Count	Estimated Population	Saving			Count	Estimated Population	Others		
			Prevalence (%)	95% CI				Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	787	31631	30.5	28.17	33.03	115	4365	4.2	3.34	5.30
Locality of school										
Urban	235	8498	30.2	28.38	32.02	42	1452	5.2	3.69	7.15
Rural	552	23133	30.7	27.52	34.04	73	2914	3.9	2.89	5.15
Sex										
Boys	446	15828	30.5	28.12	33.03	70	2246	4.3	3.17	5.90
Girls	341	15803	30.6	27.46	33.87	45	2120	4.1	3.00	5.58
Ethnicity										
Malay	570	22991	28.5	26.29	30.85	69	2658	3.3	2.45	4.43
Chinese	159	6271	38.8	31.60	46.46	35	1327	8.2	6.90	9.73
Indian	45	1844	35.6	25.84	46.75	9	285	5.5	2.23	12.92
Bumiputera Sabah	1	34	6.9	0.71	43.53					
Bumiputera Sarawak	4	141	69.6	47.37	85.38					
Others	8	351	39.2	21.65	59.98	2	96	10.7	3.15	30.57
School level										
Primary school	247	12254	32.2	27.60	37.12	22	1139	3.0	1.71	5.19
Secondary school	540	19376	29.6	27.18	32.13	93	3226	4.9	4.07	5.95
Class										
Standard 4	90	4461	34.7	29.92	39.76	11	655	5.1	2.24	11.16
Standard 5	78	3708	29.7	20.04	41.63	6	265	2.1	0.98	4.55
Standard 6	79	4086	32.1	24.61	40.57	5	220	1.7	0.67	4.37
Form 1	109	4054	30.7	25.92	35.91	16	587	4.4	2.96	6.62
Form 2	82	3104	23.9	18.29	30.63	16	571	4.4	2.82	6.81
Form 3	104	3401	26.0	21.03	31.78	14	499	3.8	2.06	6.97
Form 4	122	4313	33.2	29.69	36.89	23	730	5.6	3.91	8.00
Form 5	123	4504	34.0	27.90	40.76	24	839	6.3	4.07	9.76
School session										
Morning session	404	16151	30.1	27.52	32.86	69	2773	5.2	3.79	7.03
Evening session	20	845	20.2	13.44	29.32	4	152	3.6	1.43	8.93
Morning and evening session	363	14635	32.0	29.13	35.00	42	1440	3.1	1.92	5.12
BMI-for-age status (BAZ)										
Thinness (<-2sd)	45	1766	31.3	23.21	40.66	8	251	4.4	1.97	9.72
Normal (≥-2sd - ≤+1sd)	457	18395	28.9	26.48	31.35	58	2356	3.7	2.59	5.25
Overweight (>+1sd - ≤+2sd)	128	5059	31.2	27.25	35.36	25	908	5.6	3.65	8.46
Obese (>+2sd)	155	6350	35.8	30.60	41.26	24	851	4.8	3.12	7.29
Height-for-age status (HAZ)	100									
Stunting (<-2sd)	39	1563	23.8	17.97	30.74	6	276	4.2	1.40	11.90
Normal (≥-2sd)	748	30067	31.0	28.45	33.67	109	4089	4.2	3.26	5.43

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	95	3636	3.4	2.41	4.87	319	12567	11.9	9.58	14.63
Locality of school										
Urban	34	1206	4.2	1.97	8.68	117	4117	14.3	9.20	21.58
Rural	61	2430	3.2	2.18	4.55	202	8451	11.0	8.75	13.67
Sex										
Boys	74	2569	4.9	3.31	7.08	209	7459	14.1	11.19	17.62
Girls	21	1067	2.0	1.09	3.71	110	5108	9.7	7.24	12.77
Ethnicity										
Malay	69	2746	3.4	2.32	4.82	242	9888	12.1	9.81	14.76
Chinese	23	752	4.4	2.03	9.45	52	1694	10.0	4.76	19.83
Indian	3	138	2.6	0.72	8.89	19	719	13.5	8.16	21.54
Bumiputera Sabah						2	85	17.5	4.52	48.71
Bumiputera Sarawak						1	27	13.4	1.25	65.61
Others						3	154	16.5	3.65	50.71
School level										
Primary school	47	2090	5.4	4.33	6.72	133	6266	16.2	13.42	19.43
Secondary school	48	1546	2.3	1.29	4.07	186	6301	9.4	7.19	12.17
Class										
Standard 4	15	735	5.7	4.37	7.31	60	2999	23.1	19.70	26.89
Standard 5	23	971	7.6	5.52	10.36	47	1991	15.6	9.21	25.13
Standard 6	9	384	3.0	1.55	5.62	26	1276	9.9	6.46	14.83
Form 1	11	390	2.9	1.34	6.04	42	1570	11.6	8.08	16.28
Form 2	11	386	2.9	1.51	5.45	28	1067	8.0	5.87	10.76
Form 3	6	166	1.2	0.24	6.05	40	1259	9.4	5.95	14.50
Form 4	11	298	2.3	0.88	5.65	39	1198	9.1	5.61	14.32
Form 5	9	306	2.3	1.31	3.86	37	1207	8.9	6.30	12.47
School session										
Morning session	58	2226	4.1	2.68	6.16	182	7201	13.2	10.50	16.45
Evening session	2	92	2.2	0.75	6.19	13	541	12.8	7.58	20.96
Morning and evening session	35	1318	2.8	1.84	4.27	124	4825	10.3	7.86	13.34
BMI-for-age status (BAZ)										
Thinness (<-2sd)	7	274	4.6	1.76	11.32	16	542	9.0	4.54	17.24
Normal (≥-2sd - ≤+1sd)	62	2372	3.7	2.37	5.59	196	7672	11.8	9.49	14.60
Overweight (>+1sd - ≤+2sd)	7	265	1.6	0.50	5.00	53	2112	12.8	8.42	19.01
Obese (>+2sd)	17	662	3.6	2.19	6.00	54	2241	12.3	9.01	16.66
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	325	4.8	2.03	11.00	22	922	13.6	8.45	21.30
Normal (≥-2sd)	87	3311	3.3	2.32	4.79	297	11645	11.8	9.46	14.52

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Melaka	1978	78117	73.8	71.67	75.89	284	11484	10.9	8.66	13.52
Locality of school										
Urban	580	20944	72.8	66.95	77.93	71	2510	8.7	5.54	13.47
Rural	1398	57173	74.2	72.16	76.19	213	8974	11.7	9.04	14.89
Sex										
Boys	1103	38337	72.5	69.05	75.65	134	4533	8.6	6.56	11.12
Girls	875	39780	75.2	72.18	77.97	150	6951	13.1	9.62	17.69
Ethnicity										
Malay	1538	61412	75.0	72.62	77.14	198	7891	9.6	7.70	11.99
Chinese	317	11809	69.8	63.93	75.06	62	2666	15.8	9.50	25.01
Indian	95	3761	70.7	61.32	78.54	19	704	13.2	7.35	22.69
Bumiputera Sabah	8	355	72.8	33.08	93.56	1	47	9.7	1.52	42.73
Bumiputera Sarawak	5	175	86.6	34.39	98.75					
Others	15	604	64.7	35.33	86.03	4	176	18.8	9.88	32.83
School level										
Primary school	577	27625	71.4	67.93	74.67	51	2700	7.0	4.00	11.89
Secondary school	1401	50492	75.2	72.83	77.47	233	8784	13.1	11.19	15.25
Class										
Standard 4	174	8492	65.4	60.89	69.68	13	756	5.8	3.00	10.99
Standard 5	199	8715	68.2	60.30	75.17	23	1103	8.6	4.92	14.70
Standard 6	204	10417	80.6	76.52	84.17	15	842	6.5	3.37	12.24
Form 1	272	10196	75.1	69.52	79.93	38	1423	10.5	8.00	13.62
Form 2	266	10197	76.3	73.23	79.03	42	1722	12.9	8.96	18.17
Form 3	306	10126	75.5	70.65	79.76	53	1863	13.9	10.26	18.53
Form 4	283	9855	74.6	68.10	80.15	53	1861	14.1	10.33	18.91
Form 5	274	10118	74.7	70.26	78.67	47	1915	14.1	10.69	18.47
School session										
Morning session	1013	39812	72.9	69.98	75.71	136	5344	9.8	7.68	12.40
Evening session	75	3156	75.0	68.86	80.21	10	421	10.0	6.96	14.18
Morning and evening session	888	35066	74.7	72.17	77.11	138	5719	12.2	9.34	15.76
BMI-for-age status (BAZ)										
Thinness (<-2sd)	119	4745	79.2	70.81	85.71	13	429	7.2	4.19	11.97
Normal (≥-2sd - ≤+1sd)	1207	47795	73.6	70.93	76.07	172	7121	11.0	8.57	13.92
Overweight (>+1sd - ≤+2sd)	318	12293	74.6	68.14	80.05	46	1818	11.0	7.77	15.42
Obese (>+2sd)	332	13217	72.7	68.38	76.72	51	2048	11.3	8.47	14.84
Height-for-age status (HAZ)										
Stunting (<-2sd)	122	4846	71.7	61.80	79.89	14	664	9.8	5.33	17.43
Normal (≥-2sd)	1856	73271	74.0	71.98	75.88	270	10820	10.9	8.68	13.66

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
Melaka	164	6249	5.9	4.79	7.28	584	23094.0213	21.8	19.66	24.19
Locality of school										
Urban	58	2080	7.3	4.44	11.64	183	6690.71592	23.3	18.98	28.35
Rural	106	4168	5.4	4.51	6.47	401	16403.3053	21.3	18.89	23.89
Sex										
Boys	108	3647	6.9	5.54	8.59	324	11425.794	21.6	19.38	24.09
Girls	56	2601	4.9	3.30	7.27	260	11668.227	22.0	18.80	25.67
Ethnicity										
Malay	129	5041	6.2	4.89	7.74	461	18353.003	22.4	20.07	24.99
Chinese	24	735	4.3	2.45	7.53	96	3614.007	21.3	17.11	26.14
Indian	9	397	7.4	3.49	14.95	17	682.739	12.7	8.45	18.66
Bumiputera Sabah			0.0	0.00	0.00	3	125.021	28.2	9.60	59.29
Bumiputera Sarawak			0.0	0.00	0.00	1	41.639	20.6	3.39	65.63
Others	2	76	8.2	1.49	34.30	6	277.612	29.7	14.55	51.23
School level										
Primary school	51	2326	6.0	4.81	7.45	179	8256.807	21.3	17.75	25.30
Secondary school	113	3923	5.9	4.30	7.94	405	14837.214	22.2	19.48	25.11
Class										
Standard 4	19	836	6.4	4.72	8.59	66	3249.758	24.8	19.52	31.02
Standard 5	17	739	5.8	3.24	10.25	61	2527.415	19.9	15.30	25.49
Standard 6	15	750	5.8	3.77	8.71	52	2479.633	19.0	16.19	22.27
Form 1	24	883	6.5	4.54	9.29	72	2741.664	20.2	15.69	25.73
Form 2	14	539	4.1	2.04	7.90	80	3060.958	23.0	18.97	27.65
Form 3	28	934	7.0	4.80	10.10	61	2065.693	15.5	12.40	19.18
Form 4	20	669	5.1	3.50	7.29	88	3084.512	23.3	18.94	28.43
Form 5	27	896	6.6	4.17	10.33	104	3884.388	28.7	24.98	32.68
School session										
Morning session	90	3317	6.1	4.73	7.78	296	11668.607	21.4	18.39	24.75
Evening session	5	217	5.2	2.75	9.45	20	839.409	19.9	13.40	28.60
Morning and evening session	69	2715	5.8	4.26	7.82	268	10586.005	22.6	19.63	25.81
BMI-for-age status (BAZ)										
Thinness (<-2sd)	9	332	5.6	2.63	11.57	44	1673.871	28.3	20.93	36.98
Normal (≥-2sd - ≤+1sd)	100	3893	6.0	4.87	7.33	382	15300.947	23.5	21.19	26.04
Overweight (>+1sd - ≤+2sd)	25	930	5.6	3.26	9.49	95	3665.495	22.1	16.96	28.26
Obese (>+2sd)	28	1024	5.7	4.09	7.88	63	2453.708	13.6	9.71	18.83
Height-for-age status (HAZ)										
Stunting (<-2sd)	10	354	5.3	2.92	9.34	27	1034.432	15.4	10.95	21.22
Normal (≥-2sd)	154	5894	6.0	4.82	7.33	557	22059.590	22.3	20.11	24.61

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

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	
Melaka	1845	73422	69.4	66.83	71.93	78	2973	2.8	2.16	3.66
Locality of school										
Urban	531	19058	66.5	59.44	72.86	27	836	2.9	1.49	5.64
Rural	1314	54363	70.5	68.31	72.67	51	2136	2.8	2.14	3.58
Sex										
Boys	1035	36142	68.5	65.44	71.32	49	1582	3.0	2.03	4.40
Girls	810	37280	70.4	66.87	73.74	29	1390	2.6	1.77	3.88
Ethnicity										
Malay	1406	56617	69.2	66.18	72.08	45	1792	2.2	1.64	2.92
Chinese	305	11615	68.4	63.98	72.50	30	1018	6.0	4.32	8.25
Indian	108	4132	76.9	68.65	83.48	3	163	3.0	0.92	9.50
Bumiputera Sabah	7	318	71.8	40.71	90.40					
Bumiputera Sarawak	5	161	79.4	34.37	96.61					
Others	14	580	62.1	38.75	80.96					
School level										
Primary school	555	27094	69.8	66.33	73.10	23	1128	2.9	2.02	4.16
Secondary school	1290	46328	69.2	65.60	72.61	55	1845	2.8	1.92	3.95
Class										
Standard 4	171	8691	66.4	58.92	73.13	7	314	2.4	1.17	4.86
Standard 5	200	8929	70.3	66.20	74.18	11	497	3.9	2.08	7.26
Standard 6	184	9474	72.8	70.88	74.56	5	317	2.4	0.91	6.37
Form 1	258	9637	71.2	64.95	76.68	8	278	2.1	0.93	4.49
Form 2	241	9306	70.0	64.18	75.22	10	391	2.9	1.74	4.93
Form 3	301	9957	74.7	70.82	78.14	13	380	2.9	1.36	5.89
Form 4	262	8920	67.5	61.35	73.14	16	537	4.1	2.39	6.83
Form 5	228	8508	62.8	56.76	68.47	8	258	1.9	0.85	4.21
School session										
Morning session	952	37876	69.5	65.68	72.98	47	1675	3.1	2.37	3.97
Evening session	73	3079	73.1	61.70	82.12	2	76	1.8	0.63	4.98
Morning and evening session	818	32385	69.0	65.83	72.07	29	1222	2.6	1.44	4.67
BMI-for-age status (BAZ)										
Thinness (<-2sd)	95	3730	63.0	53.62	71.48	5	185	3.1	1.46	6.56
Normal (≥-2sd - ≤+1sd)	1110	44118	67.8	65.26	70.30	45	1727	2.7	1.70	4.12
Overweight (>+1sd - ≤+2sd)	294	11554	69.6	61.94	76.39	12	439	2.6	1.51	4.61
Obese (>+2sd)	343	13920	77.4	71.65	82.24	15	591	3.3	1.82	5.87
Height-for-age status (HAZ)	100									
Stunting (<-2sd)	120	4995	74.3	66.99	80.54	8	335	5.0	2.20	10.90
Normal (≥-2sd)	1725	68427	69.1	66.67	71.44	70	2638	2.7	1.96	3.61

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									
	Bread/ bun/ sandwich					French fries				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
Melaka	1017	39155	36.9	32.40	41.67	402	16128	15.2	13.08	17.61
Locality of school										
Urban	317	11091	38.5	31.63	45.81	109	3889	13.5	9.66	18.53
Rural	700	28064	36.3	30.80	42.25	293	12238	15.8	13.49	18.52
Sex										
Boys	578	19406	36.7	31.33	42.46	239	8562	16.2	13.61	19.17
Girls	439	19749	37.1	32.73	41.72	163	7566	14.2	11.86	16.96
Ethnicity										
Malay	763	29729	36.2	31.56	41.15	318	12988	15.8	13.23	18.81
Chinese	182	6691	39.4	33.29	45.87	66	2483	14.6	11.98	17.73
Indian	55	2077	38.6	26.86	51.94	14	519	9.7	5.70	15.89
Bumiputera Sabah	3	115	23.5	5.43	62.16	1	34	6.9	0.71	43.53
Bumiputera Sarawak	3	89	43.8	23.79	66.07	2	75	37.1	10.08	75.67
Others	11	454	48.6	28.36	69.38	1	30	3.2	0.32	25.14
School level										
Primary school	236	11314	29.1	25.91	32.44	152	7155	18.4	16.24	20.73
Secondary school	781	27842	41.5	36.34	46.78	250	8973	13.4	10.90	16.29
Class										
Standard 4	74	3721	28.5	25.72	31.39	56	2739	21.0	18.09	24.16
Standard 5	83	3549	27.6	21.11	35.30	44	1850	14.4	12.45	16.61
Standard 6	79	4044	31.1	23.97	39.16	52	2566	19.7	14.68	25.94
Form 1	130	4905	36.0	28.26	44.59	56	2115	15.5	12.14	19.67
Form 2	131	5006	37.5	30.85	44.72	47	1756	13.2	9.99	17.16
Form 3	166	5499	40.9	33.10	49.15	48	1582	11.8	8.33	16.35
Form 4	174	5897	44.5	38.97	50.19	54	1853	14.0	10.70	18.08
Form 5	180	6535	48.5	37.93	59.12	45	1667	12.4	8.47	17.70
School session										
Morning session	519	20043	36.6	31.79	41.67	213	8530	15.6	13.37	18.06
Evening session	44	1808	42.9	24.93	63.01	9	376	8.9	6.10	12.91
Morning and evening session	453	17256	36.7	31.39	42.38	180	7222	15.4	12.25	19.10
BMI-for-age status (BAZ)										
Thinness (<-2sd)	59	2189	36.6	27.18	47.07	20	798	13.3	8.68	19.94
Normal (≥-2sd - ≤+1sd)	632	24546	37.7	32.65	42.98	246	9802	15.0	12.55	17.93
Overweight (>+1sd - ≤+2sd)	161	6132	37.0	31.99	42.38	67	2711	16.4	12.32	21.43
Obese (>+2sd)	163	6221	34.2	28.35	40.67	69	2817	15.5	12.70	18.79
Height-for-age status (HAZ)										
Stunting (<-2sd)	63	2587	38.5	31.07	46.46	23	907	13.5	8.78	20.15
Normal (≥-2sd)	954	36568	36.8	32.09	41.80	379	15221	15.3	13.10	17.85

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									
	Biscuit					Fruits				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	619	24009	22.6	18.17	27.83	461	18731	17.7	15.68	19.83
Locality of school										
Urban	230	8164	28.3	16.70	43.77	142	5034	17.5	14.12	21.40
Rural	389	15846	20.5	17.25	24.21	319	13697	17.7	15.37	20.38
Sex										
Boys	321	10627	20.1	16.38	24.43	227	7788	14.7	12.63	17.12
Girls	298	13382	25.1	18.80	32.78	234	10943	20.6	17.73	23.72
Ethnicity										
Malay	461	18299	22.3	16.80	28.95	328	13426	16.4	13.91	19.14
Chinese	121	4404	25.9	21.58	30.81	104	3996	23.5	20.09	27.36
Indian	33	1141	21.2	14.73	29.63	25	1101	20.5	14.04	28.89
Bumiputera Sabah	2	108	22.2	4.26	64.67					
Bumiputera Sarawak	1	27	13.4	1.25	65.61					
Others	1	30	3.2	0.32	25.14	4	208	22.3	8.68	46.49
School level										
Primary school	122	5980	15.4	12.58	18.64	157	7711	19.8	16.60	23.46
Secondary school	497	18029	26.9	21.33	33.20	304	11020	16.4	14.29	18.78
Class										
Standard 4	36	1806	13.8	10.78	17.54	55	2817	21.6	17.50	26.26
Standard 5	48	2204	17.2	13.47	21.63	57	2616	20.4	16.53	24.85
Standard 6	38	1970	15.1	10.45	21.41	45	2277	17.5	14.24	21.30
Form 1	83	3068	22.5	16.58	29.85	64	2408	17.7	15.29	20.36
Form 2	73	2891	21.7	15.27	29.82	62	2400	18.0	14.48	22.15
Form 3	118	3944	29.3	22.05	37.83	68	2312	17.2	14.46	20.31
Form 4	121	4239	32.0	25.51	39.26	53	1812	13.7	9.85	18.68
Form 5	102	3887	28.8	22.21	36.49	57	2087	15.5	9.60	24.00
School session										
Morning session	297	11567	21.1	17.47	25.29	259	10532	19.2	16.55	22.23
Evening session	12	481	11.4	7.47	17.05	20	860	20.4	13.16	30.28
Morning and evening session	310	11962	25.4	19.14	32.99	181	7305	15.5	13.08	18.38
BMI-for-age status (BAZ)										
Thinness (<-2sd)	34	1230	20.5	13.68	29.65	26	1063	17.8	12.30	24.93
Normal (≥-2sd - ≤+1sd)	395	15328	23.5	18.81	29.00	272	11218	17.2	14.95	19.75
Overweight (>+1sd - ≤+2sd)	105	4049	24.5	17.52	33.03	74	2901	17.5	13.37	22.61
Obese (>+2sd)	84	3372	18.6	14.31	23.72	89	3548	19.5	15.67	24.07
Height-for-age status (HAZ)										
Stunting (<-2sd)	38	1527	22.7	13.73	35.17	25	969	14.4	10.07	20.19
Normal (≥-2sd)	581	22482	22.6	18.33	27.60	436	17762	17.9	15.78	20.20

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	
Melaka	85	3229	3.0	2.26	4.09	459	17954	16.9	15.10	18.92
Locality of school										
Urban	25	920	3.2	1.82	5.54	142	5292	18.4	14.61	22.80
Rural	60	2309	3.0	2.11	4.23	317	12662	16.4	14.48	18.50
Sex										
Boys	51	1759	3.3	2.56	4.32	275	9597	18.2	15.17	21.58
Girls	34	1470	2.8	1.56	4.85	184	8357	15.7	13.89	17.71
Ethnicity										
Malay	65	2550	3.1	2.39	4.03	367	14306	17.4	15.40	19.66
Chinese	11	369	2.2	0.69	6.61	67	2575	15.2	10.75	20.97
Indian	9	310	5.8	3.03	10.72	17	764	14.2	8.33	23.20
Bumiputera Sabah						4	168	34.4	13.30	64.17
Bumiputera Sarawak						1	39	19.1	2.76	66.20
Others						3	103	11.1	3.32	31.07
School level										
Primary school	26	1104	2.8	1.68	4.75	134	6365	16.4	13.54	19.61
Secondary school	59	2125	3.2	2.21	4.51	325	11589	17.3	14.97	19.82
Class										
Standard 4	3	124	0.9	0.13	6.43	37	1833	14.0	9.46	20.30
Standard 5	11	431	3.4	1.88	5.91	47	2046	15.9	12.27	20.43
Standard 6	12	550	4.2	2.58	6.85	50	2486	19.1	16.80	21.61
Form 1	11	394	2.9	1.77	4.69	53	1956	14.4	10.84	18.79
Form 2	5	202	1.5	0.71	3.19	62	2415	18.1	12.94	24.75
Form 3	17	555	4.1	1.67	9.87	67	2236	16.6	13.15	20.79
Form 4	11	360	2.7	1.74	4.22	81	2734	20.6	16.73	25.18
Form 5	15	614	4.6	2.98	6.90	62	2249	16.7	10.74	24.98
School session										
Morning session	48	1785	3.3	2.24	4.72	225	8725	15.9	14.10	17.94
Evening session	4	169	4.0	1.40	11.00	9	402	9.5	5.40	16.29
Morning and evening session	33	1275	2.7	1.76	4.17	225	8828	18.8	15.80	22.17
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	122	2.0	0.71	5.74	33	1277	21.3	15.29	28.93
Normal (≥-2sd - ≤+1sd)	50	1862	2.9	2.02	4.03	290	11463	17.6	15.28	20.18
Overweight (>+1sd - ≤+2sd)	13	489	3.0	1.76	4.92	65	2502	15.1	11.95	18.93
Obese (>+2sd)	19	756	4.2	2.51	6.81	70	2673	14.7	11.84	18.14
Height-for-age status (HAZ)										
Stunting (<-2sd)	6	233	3.5	1.05	10.88	30	1193	17.7	12.50	24.58
Normal (≥-2sd)	79	2996	3.0	2.25	4.04	429	16761	16.9	15.11	18.79

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
Melaka	385	16346	15.4	12.77	18.48
Locality of school					
Urban	111	4243	14.7	10.81	19.73
Rural	274	12103	15.7	12.46	19.53
Sex					
Boys	193	7281	13.8	10.59	17.73
Girls	192	9066	17.0	14.00	20.58
Ethnicity					
Malay	294	12639	15.4	12.44	18.90
Chinese	71	2911	17.1	12.11	23.71
Indian	16	632	11.8	7.61	17.74
Bumiputera Sabah	2	87	17.8	4.55	49.51
Bumiputera Sarawak					
Others	2	77	8.3	1.25	39.03
School level					
Primary school	156	7754	19.9	15.51	25.21
Secondary school	229	8592	12.8	10.82	15.08
Class					
Standard 4	42	2150	16.5	9.85	26.19
Standard 5	64	2919	22.7	17.77	28.60
Standard 6	50	2685	20.6	14.81	27.96
Form 1	61	2272	16.7	13.00	21.17
Form 2	42	1644	12.3	8.66	17.26
Form 3	40	1404	10.4	7.14	15.00
Form 4	47	1662	12.5	8.97	17.28
Form 5	39	1610	11.9	7.73	17.99
School session					
Morning session	198	8039	14.7	12.13	17.66
Evening session	17	734	17.4	11.19	26.12
Morning and evening session	170	7573	16.1	11.92	21.43
BMI-for-age status (BAZ)					
Thinness (<-2sd)	23	1010	16.9	10.35	26.29
Normal ($\geq-2sd$ - $\leq+1sd$)	244	10366	15.9	13.22	19.03
Overweight ($>+1sd$ - $\leq+2sd$)	54	2213	13.4	9.52	18.45
Obese ($>+2sd$)	64	2757	15.2	11.66	19.52
Height-for-age status (HAZ)					
Stunting (<-2sd)	23	906	13.47	8.33	21.06
Normal ($\geq-2sd$)	362	15440	15.54	12.73	18.84

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	
Melaka	224	8604	8.1	6.25	10.45	1716	68358	64.4	59.19	69.33
Locality of school										
Urban	65	2203	7.7	4.54	12.67	498	17881	62.3	50.15	73.01
Rural	159	6401	8.3	6.14	11.06	1218	50478	65.2	59.66	70.41
Sex										
Boys	147	5129	9.7	7.11	13.04	974	34205	64.5	60.06	68.73
Girls	77	3475	6.5	4.73	8.99	742	34154	64.3	57.10	70.96
Ethnicity										
Malay	170	6845	8.3	6.27	10.99	1306	52727	64.2	58.02	69.90
Chinese	48	1540	9.1	5.03	15.87	285	10803	63.7	56.78	70.12
Indian	6	219	4.1	1.39	11.33	97	3751	69.8	54.41	81.73
Bumiputera Sabah						10	443	90.8	54.35	98.79
Bumiputera Sarawak						5	164	80.9	33.80	97.24
Others						13	471	50.4	25.27	75.35
School level										
Primary school	90	3897	10.0	7.35	13.47	567	27081	69.5	65.98	72.76
Secondary school	134	4707	7.0	4.86	10.01	1149	41277	61.5	54.13	68.36
Class										
Standard 4	36	1694	12.9	9.72	16.86	179	8775	66.7	60.07	72.71
Standard 5	39	1538	12.0	7.12	19.57	189	8416	65.7	61.61	69.66
Standard 6	15	665	5.1	2.34	10.82	199	9890	76.0	67.34	82.88
Form 1	35	1332	9.8	5.32	17.32	225	8358	61.4	51.67	70.27
Form 2	28	1040	7.8	5.40	11.15	225	8635	64.8	57.77	71.20
Form 3	34	1087	8.1	5.20	12.47	249	8238	61.5	52.90	69.49
Form 4	25	742	5.6	2.73	11.17	242	8327	62.9	50.57	73.67
Form 5	12	505	3.7	1.68	8.08	208	7719	57.0	44.47	68.66
School session										
Morning session	134	5125	9.3	7.00	12.38	895	35457	64.7	59.69	69.34
Evening session	8	309	7.3	3.68	14.09	64	2644	62.8	57.08	68.14
Morning and evening session	82	3170	6.7	4.71	9.58	756	30224	64.3	56.49	71.46
BMI-for-age status (BAZ)										
Thinness (<-2sd)	14	464	7.7	3.92	14.70	111	4386	73.2	64.91	80.18
Normal (≥-2sd - ≤+1sd)	132	5071	7.8	5.63	10.65	1082	43222	66.3	60.77	71.34
Overweight (>+1sd - ≤+2sd)	37	1442	8.7	6.33	11.89	255	9950	60.1	54.04	65.91
Obese (>+2sd)	41	1627	9.0	6.01	13.17	265	10691	58.9	52.47	65.10
Height-for-age status (HAZ)										
Stunting (<-2sd)	10	376	5.6	2.61	11.49	116	4681	69.3	61.47	76.10
Normal (≥-2sd)	214	8228	8.3	6.47	10.55	1600	63678	64.1	58.71	69.14

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

Characteristics	snack food and/ or drinks usually bought out of school area in a week				
	Count	Estimated Population	Never Prevalence (%)	95% CI	
				Lower	Upper
Melaka	741	29146	27.5	21.59	34.24
Locality of school					
Urban	237	8638	30.1	18.12	45.53
Rural	504	20508	26.5	20.21	33.91
Sex					
Boys	401	13683	25.8	20.20	32.35
Girls	340	15463	29.1	21.81	37.72
Ethnicity					
Malay	575	22583	27.5	20.51	35.77
Chinese	121	4613	27.2	20.08	35.73
Indian	34	1405	26.1	15.18	41.15
Bumiputera Sabah	1	45	9.2	1.21	45.65
Bumiputera Sarawak	1	39	19.1	2.76	66.20
Others	9	463	49.6	24.65	74.73
School level					
Primary school	156	8000	20.5	15.36	26.88
Secondary school	585	21146	31.5	23.71	40.49
Class					
Standard 4	50	2690	20.4	14.02	28.82
Standard 5	64	2846	22.2	17.08	28.41
Standard 6	42	2465	18.9	11.05	30.49
Form 1	104	3926	28.8	19.63	40.19
Form 2	93	3655	27.4	20.59	35.51
Form 3	121	4062	30.3	21.13	41.46
Form 4	120	4179	31.5	20.29	45.48
Form 5	147	5323	39.3	27.35	52.67
School session	100				
Morning session	364	14249	26.0	20.56	32.26
Evening session	28	1259	29.9	24.65	35.71
Morning and evening session	348	13591	28.9	20.79	38.69
BMI-for-age status (BAZ)					
Thinness (<-2sd)	30	1139	19.0	13.10	26.81
Normal (≥-2sd - ≤+1sd)	428	16936	26.0	19.92	33.08
Overweight (>+1sd - ≤+2sd)	133	5157	31.2	24.56	38.63
Obese (>+2sd)	147	5823	32.1	25.22	39.86
Height-for-age status (HAZ)					
Stunting (<-2sd)	40	1700	25.2	18.20	33.69
Normal (≥-2sd)	701	27446	27.6	21.66	34.51

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	
Melaka	356	14507	13.7	10.51	17.64	461	17795	16.8	12.45	22.25
Locality of school										
Urban	109	4418	15.4	7.98	27.62	155	5328	18.6	10.32	31.08
Rural	247	10088	13.1	10.20	16.55	306	12467	16.1	11.40	22.32
Sex										
Boys	195	7156	13.6	8.87	20.16	245	8201	15.5	11.63	20.44
Girls	161	7351	13.8	10.70	17.66	216	9594	18.0	12.44	25.41
Ethnicity										
Malay	285	11681	14.2	10.88	18.41	309	12345	15.0	11.53	19.39
Chinese	36	1459	8.6	4.93	14.60	113	3927	23.2	14.21	35.43
Indian	30	1166	21.7	15.16	30.03	31	1233	22.9	12.33	38.67
Bumiputera Sabah	3	135	27.6	8.74	60.28	3	122	25.0	3.12	77.58
Bumiputera Sarawak						2	67	33.3	9.00	71.49
Others	2	67	7.2	1.11	35.04	3	100	10.7	2.51	35.75
School level										
Primary school	137	6594	17.0	11.67	24.04	77	3583	9.2	7.15	11.83
Secondary school	219	7913	11.8	8.39	16.30	384	14211	21.2	15.80	27.73
Class										
Standard 4	46	2353	17.9	12.24	25.37	34	1701	12.9	10.83	15.36
Standard 5	40	1680	13.2	8.91	19.05	25	1014	8.0	5.27	11.85
Standard 6	51	2561	19.8	12.48	29.97	18	868	6.7	4.39	10.13
Form 1	46	1704	12.5	8.65	17.78	65	2479	18.2	13.40	24.25
Form 2	29	1124	8.4	5.52	12.67	72	2725	20.4	14.73	27.62
Form 3	53	1795	13.4	8.22	21.01	91	3104	23.1	15.74	32.62
Form 4	47	1643	12.4	8.76	17.27	80	2916	22.0	14.76	31.50
Form 5	44	1646	12.2	6.37	21.95	76	2988	22.1	12.87	35.15
School session										
Morning session	173	7169	13.1	9.62	17.64	242	9455	17.3	13.58	21.78
Evening session	16	639	15.2	10.39	21.66	16	680	16.2	12.52	20.60
Morning and evening session	167	6698	14.2	10.13	19.63	203	7660	16.3	10.13	25.11
BMI-for-age status (BAZ)										
Thinness (<-2sd)	18	811	13.5	7.69	22.72	26	950	15.9	10.24	23.75
Normal (≥-2sd - ≤+1sd)	224	9164	14.1	10.68	18.34	290	11311	17.4	12.49	23.66
Overweight (>+1sd - ≤+2sd)	56	2236	13.5	9.33	19.23	73	2877	17.4	12.77	23.29
Obese (>+2sd)	57	2259	12.4	8.38	18.00	72	2657	14.6	10.52	19.89
Height-for-age status (HAZ)										
Stunting (<-2sd)	31	1272	18.8	10.74	30.88	28	1105	16.4	10.37	24.84
Normal (≥-2sd)	325	13235	13.3	10.44	16.88	433	16690	16.8	12.44	22.34

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	
Melaka	589	22674	21.4	18.47	24.63	55	2362	2.2	1.46	3.39
Locality of school										
Urban	176	5818	20.3	13.87	28.63	12	393	1.4	0.50	3.71
Rural	413	16856	21.8	18.81	25.13	43	1969	2.5	1.64	3.94
Sex										
Boys	380	12863	24.4	20.61	28.55	31	1106	2.1	1.26	3.46
Girls	209	9811	18.4	14.94	22.53	24	1256	2.4	1.31	4.22
Ethnicity										
Malay	477	18578	22.6	18.95	26.82	41	1714	2.1	1.30	3.33
Chinese	80	2917	17.2	12.15	23.80	10	521	3.1	1.11	8.23
Indian	25	902	16.8	11.09	24.61	3	99	1.8	0.69	4.82
Bumiputera Sabah	4	164	33.6	14.44	60.35					
Bumiputera Sarawak	1	33	16.5	1.57	71.18					
Others	2	79	8.4	2.26	26.94	1	28	3.0	0.48	16.31
School level										
Primary school	153	7359	19.0	15.62	22.81	23	1238	3.2	1.81	5.56
Secondary school	436	15314	22.8	18.90	27.23	32	1125	1.7	0.98	2.83
Class										
Standard 4	42	2031	15.4	12.34	19.14	12	624	4.7	2.99	7.46
Standard 5	52	2299	18.0	13.66	23.42	7	366	2.9	0.63	12.06
Standard 6	59	3029	23.4	17.57	30.53	4	247	1.9	0.92	3.92
Form 1	90	3367	24.7	18.95	31.57	8	294	2.2	1.14	4.07
Form 2	86	3395	25.5	19.49	32.51	7	271	2.0	0.90	4.52
Form 3	93	2980	22.2	15.62	30.54	9	294	2.2	0.83	5.63
Form 4	97	3144	23.7	18.04	30.56	3	100	0.8	0.27	2.08
Form 5	70	2428	17.9	13.94	22.75	5	166	1.2	0.64	2.34
School session										
Morning session	295	11066	20.2	17.05	23.88	31	1393	2.5	1.54	4.19
Evening session	28	1157	27.5	21.63	34.23	6	220	5.2	2.40	10.99
Morning and evening session	266	10450	22.2	18.16	26.86	18	750	1.6	0.97	2.60
BMI-for-age status (BAZ)										
Thinness (<-2sd)	32	1158	19.3	12.86	28.03	4	147	2.5	0.66	8.65
Normal (≥-2sd - ≤+1sd)	358	13967	21.5	18.42	24.85	29	1317	2.0	1.25	3.27
Overweight (>+1sd - ≤+2sd)	99	3693	22.3	17.54	28.02	12	511	3.1	1.34	6.98
Obese (>+2sd)	100	3855	21.2	16.95	26.12	9	347	1.9	0.90	3.99
Height-for-age status (HAZ)										
Stunting (<-2sd)	32	1222	18.1	12.21	25.94	4	154	2.3	0.63	7.89
Normal (≥-2sd)	557	21452	21.6	18.69	24.85	51	2208	2.2	1.41	3.48

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	
Melaka	241	9328	8.8	6.78	11.34	233	9220	8.7	7.09	10.63
Locality of school										
Urban	81	2866	10.0	6.02	16.09	72	2771	9.6	6.90	13.34
Rural	160	6462	8.4	6.20	11.18	161	6450	8.3	6.49	10.66
Sex										
Boys	139	4730	9.0	7.20	11.10	138	4946	9.4	6.97	12.48
Girls	102	4598	8.6	6.01	12.28	95	4274	8.0	5.91	10.84
Ethnicity										
Malay	135	5229	6.4	4.89	8.27	196	7822	9.5	7.73	11.70
Chinese	89	3575	21.1	15.68	27.74	23	821	4.8	2.90	7.98
Indian	12	364	6.8	3.17	13.89	11	421	7.8	4.08	14.55
Bumiputera Sabah	1	30	6.1	0.76	35.57	1	78	16.1	1.79	66.82
Bumiputera Sarawak	2	55	27.1	6.43	66.78					
Others	2	75	8.0	2.02	26.98	2	77	8.3	1.26	39.13
School level										
Primary school	46	2408	6.2	3.83	9.89	82	3861	9.9	7.74	12.68
Secondary school	195	6920	10.3	7.87	13.37	151	5359	8.0	5.97	10.59
Class										
Standard 4	13	669	5.1	3.57	7.19	23	1248	9.5	6.22	14.21
Standard 5	20	1026	8.1	3.94	15.76	32	1342	10.5	6.50	16.61
Standard 6	13	713	5.5	3.04	9.80	27	1271	9.8	5.45	17.10
Form 1	31	1160	8.5	4.11	16.85	28	1030	7.6	3.92	14.09
Form 2	39	1439	10.8	7.16	15.95	25	947	7.1	5.32	9.41
Form 3	52	1716	12.8	9.73	16.60	36	1166	8.7	6.14	12.13
Form 4	35	1154	8.7	4.78	15.34	35	1180	8.9	5.32	14.55
Form 5	38	1451	10.7	6.62	16.86	27	1037	7.7	5.25	11.03
School session										
Morning session	146	5621	10.3	8.14	12.92	125	5004	9.2	7.33	11.37
Evening session	6	222	5.3	1.99	13.26	6	230	5.5	2.79	10.44
Morning and evening session	89	3485	7.4	4.97	10.90	102	3986	8.5	6.51	10.95
BMI-for-age status (BAZ)										
Thinness (<-2sd)	14	498	8.3	4.28	15.51	17	669	11.2	6.72	17.98
Normal (≥-2sd - ≤+1sd)	164	6437	9.9	7.78	12.49	155	6037	9.3	7.27	11.77
Overweight (>+1sd - ≤+2sd)	41	1503	9.1	6.14	13.28	30	1152	7.0	4.53	10.58
Obese (>+2sd)	22	891	4.9	3.21	7.38	31	1363	7.5	5.14	10.80
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	399	5.9	3.39	10.09	24	990	14.6	10.05	20.85
Normal (≥-2sd)	230	8929	9.0	6.89	11.66	209	8231	8.3	6.62	10.34

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

Characteristics	Type of snack foods				
	Count	Estimated Population	Ice cream Percentage (%)	95% CI	
				Lower	Upper
Melaka	390	16488	15.6	10.29	22.83
Locality of school					
Urban	99	3724	13.0	8.27	19.76
Rural	291	12764	16.5	9.88	26.30
Sex					
Boys	194	7162	13.6	9.05	19.85
Girls	196	9326	17.5	11.36	26.06
Ethnicity					
Malay	321	13717	16.7	10.54	25.48
Chinese	50	1939	11.4	5.64	21.82
Indian	16	716	13.3	7.39	22.82
Bumiputera Sabah	2	87	17.8	4.55	49.51
Bumiputera Sarawak					
Others	1	30	3.2	0.32	25.14
School level					
Primary school	239	10999	28.3	21.14	36.81
Secondary school	151	5489	8.2	5.35	12.28
Class					
Standard 4	71	3182	24.2	15.30	36.03
Standard 5	84	3666	28.8	21.76	36.94
Standard 6	84	4151	32.1	20.44	46.56
Form 1	49	1799	13.2	7.57	22.07
Form 2	24	896	6.7	3.70	11.90
Form 3	19	653	4.9	3.29	7.13
Form 4	26	861	6.5	3.20	12.76
Form 5	33	1279	9.4	4.75	17.90
School session					
Morning session	214	8860	16.2	10.70	23.80
Evening session	3	121	2.9	1.04	7.67
Morning and evening session	172	7474	15.9	10.17	23.93
BMI-for-age status (BAZ)					
Thinness (<-2sd)	23	927	15.5	8.95	25.42
Normal (≥-2sd - ≤+1sd)	245	10415	16.0	10.82	23.01
Overweight (>+1sd - ≤+2sd)	50	2111	12.8	7.42	21.11
Obese (>+2sd)	72	3035	16.7	10.42	25.60
Height-for-age status (HAZ)					
Stunting (<-2sd)	20	798	11.8	4.23	28.86
Normal (≥-2sd)	370	15690	15.8	10.65	22.83

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	
Melaka	968	38309	36.1	32.99	39.41	973	39147	36.9	32.54	41.54
Locality of school										
Urban	283	10175	35.3	29.19	42.03	256	9715	33.7	23.66	45.57
Rural	685	28135	36.4	32.81	40.21	717	29432	38.1	33.75	42.67
Sex										
Boys	517	17592	33.2	30.18	36.44	575	20804	39.3	33.37	45.57
Girls	451	20717	39.0	35.32	42.87	398	18343	34.6	30.40	38.96
Ethnicity										
Malay	787	31419	38.3	34.68	42.02	834	33613	41.0	37.74	44.26
Chinese	138	5189	30.6	26.57	34.85	90	3480	20.5	16.37	25.34
Indian	36	1353	25.3	17.08	35.88	39	1636	30.7	22.78	39.84
Bumiputera Sabah	4	207	42.5	14.62	76.08	4	168	34.4	8.24	75.36
Bumiputera Sarawak	1	28	13.7	2.13	53.54	2	75	37.3	4.52	88.18
Others	2	113	12.1	2.07	47.45	4	174	18.6	8.58	35.90
School level										
Primary school	259	12404	31.9	28.17	35.84	356	16873	43.4	38.11	48.79
Secondary school	709	25905	38.6	34.94	42.39	617	22274	33.2	28.24	38.54
Class										
Standard 4	91	4744	36.3	29.43	43.71	106	5232	40.0	35.43	44.75
Standard 5	86	3588	27.9	20.27	37.17	135	5941	46.3	41.65	50.97
Standard 6	82	4073	31.4	27.51	35.50	115	5700	43.9	35.02	53.18
Form 1	110	4240	31.1	23.62	39.82	136	5112	37.5	31.61	43.87
Form 2	110	4253	32.0	28.06	36.19	101	3915	29.4	23.07	36.75
Form 3	140	4717	35.1	30.59	39.81	113	3808	28.3	22.35	35.13
Form 4	169	5898	44.5	37.76	51.48	142	4828	36.4	30.87	42.41
Form 5	180	6798	50.3	45.85	54.84	125	4611	34.2	25.43	44.10
School session										
Morning session	507	20214	36.9	32.57	41.45	504	20382	37.2	31.93	42.81
Evening session	29	1270	30.2	23.82	37.36	29	1233	29.3	22.16	37.59
Morning and evening session	431	16777	35.7	31.27	40.47	440	17531	37.3	32.56	42.40
BMI-for-age status (BAZ)										
Thinness (<-2sd)	45	1809	30.4	21.12	41.66	50	2139	36.0	27.97	44.85
Normal (≥-2sd - ≤+1sd)	618	24515	37.7	33.34	42.21	585	23495	36.1	31.34	41.16
Overweight (>+1sd - ≤+2sd)	146	5733	34.6	30.57	38.78	162	6463	39.0	32.65	45.65
Obese (>+2sd)	157	6185	34.0	30.02	38.16	174	6984	38.4	32.48	44.60
Height-for-age status (HAZ)										
Stunting (<-2sd)	67	2636	39.2	29.54	49.83	65	2631	39.1	29.80	49.36
Normal (≥-2sd)	901	35674	35.9	32.96	39.00	908	36516	36.8	32.38	41.41

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									
	Radio					Printed media				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
Melaka	66	2605	2.5	1.79	3.36	146	5689	5.4	4.01	7.14
Locality of school										
Urban	16	580	2.0	1.34	3.02	60	2196	7.6	4.12	13.70
Rural	50	2025	2.6	1.80	3.81	86	3493	4.5	3.76	5.43
Sex										
Boys	43	1619	3.1	2.11	4.41	77	2699	5.1	4.06	6.38
Girls	23	986	1.9	1.18	2.91	69	2990	5.6	3.51	8.92
Ethnicity										
Malay	48	2003	2.4	1.62	3.66	106	4202	5.1	3.44	7.56
Chinese	10	341	2.0	0.89	4.49	26	941	5.1	3.44	7.56
Indian	7	227	4.3	1.47	11.71	11	443	8.3	4.59	14.53
Bumiputera Sabah	1	34	6.9	0.71	43.53					
Bumiputera Sarawak										
Others						3	104	11.1	3.45	30.37
School level										
Primary school	34	1494	3.8	3.00	4.90	33	1594	4.1	3.18	5.27
Secondary school	32	1111	1.7	1.11	2.47	113	4094	6.1	4.22	8.75
Class										
Standard 4	19	857	6.6	4.85	8.81	7	363	2.8	1.17	6.45
Standard 5	10	413	3.2	2.01	5.11	13	624	4.9	2.92	8.00
Standard 6	5	223	1.7	0.43	6.58	13	608	4.7	2.84	7.62
Form 1	11	406	3.0	1.62	5.42	22	809	5.9	3.52	9.85
Form 2	6	222	1.7	0.62	4.43	12	458	3.4	1.93	6.08
Form 3	7	214	1.6	0.46	5.29	29	1031	7.7	4.85	11.91
Form 4	5	170	1.3	0.49	3.32	34	1157	8.7	5.73	13.09
Form 5	3	100	0.7	0.21	2.52	16	640	4.7	2.72	8.14
School session										
Morning session	44	1761	0.7	0.21	2.52	79	3054	5.6	4.17	7.41
Evening session	4	142	3.4	0.96	11.11	7	280	5.6	4.17	7.41
Morning and evening session	18	702	1.5	0.82	2.70	60	2355	5.6	4.17	7.41
BMI-for-age status (BAZ)										
Thinness (<-2sd)	8	258	4.3	1.58	11.33	7	243	5.6	4.17	7.41
Normal (≥-2sd - ≤+1sd)	43	1721	2.6	1.88	3.72	88	3411	5.2	3.81	7.17
Overweight (>+1sd - ≤+2sd)	9	397	2.6	1.88	3.72	26	1077	5.2	3.81	7.17
Obese (>+2sd)	6	230	1.3	0.58	2.75	24	918	5.0	2.76	9.02
Height-for-age status (HAZ)										
Stunting (<-2sd)	5	203	3.0	1.31	6.84	7	295	4.4	2.10	8.93
Normal (≥-2sd)	61	2402	2.4	1.73	3.37	139	5394	5.4	4.10	7.16

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
Melaka	879	33888	32.0	27.93	36.29
Locality of school					
Urban	310	10539	36.6	26.12	48.55
Rural	569	23349	30.2	26.83	33.87
Sex					
Boys	504	16776	31.7	25.58	38.51
Girls	375	17112	32.2	28.90	35.77
Ethnicity					
Malay	560	22068	26.9	24.50	29.41
Chinese	244	8912	52.5	47.70	57.22
Indian	55	2115	39.6	29.65	50.53
Bumiputera Sabah	3	113	23.1	5.66	60.19
Bumiputera Sarawak	3	99	49.1	13.20	85.91
Others	14	581	62.3	41.76	79.14
School level					
Primary school	210	10370	26.7	22.37	31.43
Secondary school	669	23519	35.0	29.99	40.45
Class					
Standard 4	61	3032	23.2	19.03	27.93
Standard 5	79	3545	27.6	21.94	34.11
Standard 6	70	3792	29.2	22.27	37.27
Form 1	133	4860	35.7	28.03	44.16
Form 2	140	5397	40.6	33.60	47.99
Form 3	162	5249	39.0	32.72	45.71
Form 4	126	4275	32.3	25.77	39.53
Form 5	108	3738	27.7	21.17	35.30
School session					
Morning session	440	16544	30.2	24.92	36.07
Evening session	37	1503	35.7	27.75	44.49
Morning and evening session	401	15808	32.0	23.10	42.40
BMI-for-age status (BAZ)					
Thinness (<-2sd)	54	1902	32.0	23.10	42.40
Normal (≥-2sd - ≤+1sd)	530	20706	31.8	27.28	36.73
Overweight (>+1sd - ≤+2sd)	140	5121	30.9	24.33	38.28
Obese (>+2sd)	153	6097	33.5	28.33	39.07
Height-for-age status (HAZ)					
Stunting (<-2sd)	46	1909	28.4	19.66	39.13
Normal (≥-2sd)	833	31980	32.2	28.01	36.71

3.5 Physical activity among adolescents (Primary 4 to Secondary 5) in Melaka

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

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 be more than two hours a day and children and adolescents should not be sedentary for more than 60 minutes at a time.

3.5.2 Objectives

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

- To determine the physical activity level.
- To evaluate the five most 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 mean score for the physical activity level for adolescents in Melaka was 2.31 (95% CI: 2.20, 2.41) (**Table 3.5.1**). Overall prevalence of being physically active among adolescents was 44.7% (95% CI: 37.22, 52.46) and the prevalence of being physically inactive was 55.3% (95% CI: 47.54, 62.78). In terms of school locality, there was no significant difference of being physically active between students studying in urban area [(46.3% (95% CI: 33.23, 59.87))] and students from rural areas (44.1%; 95% CI: 35.17, 53.74). Boys showed higher prevalence of being physically active [56.8% (95% CI: 49.08, 64.25)] compared to girls, 33.0% (95% CI: 24.08, 43.23). Primary students [63.2% (95% CI: 56.36, 69.57)] were significantly more active than secondary students [34.8% (95% CI: 30.74, 39.03)]. In term of BMI-for-age status, there was no significant difference among adolescents with thinness [50.3% (95% CI: 37.62, 63.00)], normal weight [44.4% (95% CI: 37.13, 51.89)], overweight [44.3% (95% CI: 34.88, 54.18)] and obese 44.3% (95% CI: 34.07, 55.01) (**Table 3.5.2**).

The most popular spare-time physical activity according to percentage of adolescents in Melaka were walking for exercise [83.7% (95% CI: 81.75, 85.56)] (**Table 3.5.3**). About 12.9% (95% CI: 10.51, 15.67) of adolescents reported they do not attend/very rarely participated in PE class (**Table 3.5.4**). A total of 45.5% (95% CI: 38.60, 52.51) of the adolescents reported watching television, using computer and playing video games more than 2 hours per day over the weekend and another 28.6% (95% CI: 24.96, 32.51) engaged in these screen activities more than 2 hours during school days (**Table 3.5.5** and **Table 3.5.6**).

3.5.5 Discussion

The prevalence of being physically active among adolescents in Melaka (44.7%) was almost the same with national prevalence (44.6%). Boys and primary level students had significantly higher prevalence of being physically active than girls and secondary students. There was no significant difference in terms of school locality and BMI-for-age status of the respondents. The prevalence of adolescents that engaged in 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), 55.3% of children and adolescents in Melaka were physically inactive. Although it remains high, the prevalence of being physically inactive among Malaysian adolescents was slightly lower as compared to the Malaysian School-Based Nutrition Survey (2012). 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. Policies and campaigns to promote physical activity among children and adolescents should be enhanced and health promotion activities to increase physical activity should be promoted. A comprehensive surveillance system for monitoring physical activity should be developed to ensure compliance with physical activity recommendations 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 techniques for physical activity assessment should be applied in future studies. Adolescents should be encouraged to get physically active in their daily life. Formulating specific programs and intensifying health campaigns 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 and limit the amount of sedentary and screen time behaviour as for their children. Improving techniques for physical activity assessment is also necessary.

References

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

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

Characteristic	Mean total scores in PAQ-C		
	Mean	95% CI	
		Lower	Upper
MELAKA	2.31	2.20	2.41
Locality of school			
Urban	2.32	2.14	2.49
Rural	2.30	2.17	2.43
Sex			
Boys	2.46	2.36	2.56
Girls	2.16	2.02	2.30
Class			
Standard 4	2.58	2.45	2.70
Standard 5	2.53	2.43	2.64
Standard 6	2.58	2.47	2.69
Form 1	2.31	2.22	2.40
Form 2	2.17	2.05	2.29
Form 3	2.13	2.04	2.23
Form 4	2.13	2.00	2.25
Form 5	2.10	2.01	2.18
Ethnicity			
Malay	2.35	2.23	2.46
Chinese	2.10	1.98	2.22
Indian	2.37	2.21	2.52
Bumiputera Sabah	2.09	1.78	2.41
Bumiputera Sarawak	2.00	1.74	2.26
Others	2.20	1.93	2.47
School Category			
Primary	2.56	2.50	2.63
Secondary	2.17	2.11	2.23
BMI-for-age status (BAZ)			
Thinness (<-2sd)	2.35	2.18	2.51
Normal (≥-2sd - ≤+1sd)	2.31	2.20	2.42
Overweight (>+1sd - ≤+2sd)	2.29	2.17	2.41
Obese (>+2sd)	2.28	2.15	2.41
Height-for-age status (HAZ)			
Stunting (<-2sd)	2.24	2.06	2.43
Normal (≥-2sd)	2.31	2.21	2.41

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)

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
MELAKA	1122	44667	44.7	37.22	52.46	1411	55226	55.3	47.54	62.78
Locality of School										
Urban	345	12642	46.3	33.23	59.87	421	14670	53.7	40.13	66.77
Rural	777	32025	44.1	35.17	53.47	990	40556	55.9	46.53	64.83
Sex										
Boys	776	27969	56.8	49.08	64.25	649	21252	43.2	35.75	50.92
Girls	346	16698	33.0	24.08	43.23	762	33974	67.0	56.77	75.92
Class										
Standard 4	144	7354	66.5	55.10	76.29	77	3700	33.5	23.71	44.90
Standard 5	163	7218	61.2	51.93	69.76	104	4573	38.8	30.24	48.07
Standard 6	151	7508	62.1	56.20	67.73	87	4575	37.9	32.27	43.80
Form 1	150	5576	43.1	37.03	49.36	196	7365	56.9	50.64	62.97
Form 2	116	4373	34.1	26.24	42.91	217	8458	65.9	57.09	73.76
Form 3	136	4317	33.2	26.94	40.20	256	8669	66.8	59.80	73.06
Form 4	139	4351	33.5	25.41	42.78	239	8621	66.5	57.22	74.59
Form 5	123	3970	30.0	23.92	36.87	235	9265	70.0	63.13	76.08
Ethnicity										
Malay	901	36063	47.0	38.83	55.26	1022	40727	53.0	44.74	61.17
Chinese	135	5178	31.4	22.96	41.19	308	11332	68.6	58.81	77.04
Indian	70	2804	55.5	43.43	66.91	60	2250	44.5	33.09	56.57
Bumiputera Sabah	4	174	43.2	20.45	69.30	5	228	56.8	30.70	79.55
Bumiputera Sarawak	1	33	16.5	1.57	71.18	5	169	83.5	28.82	98.43
Others	11	415	44.4	19.27	72.83	11	519	55.6	27.17	80.73
School Category										
Primary	458	22080	63.2	56.36	69.57	268	12848	36.8	30.43	43.64
Secondary	664	22586	34.8	30.74	39.03	1143	42377	65.2	60.97	69.26
BMI-for-age status (BAZ)										
Thinness (<-2sd)	70	2914	50.3	37.62	63.00	79	2875	49.7	37.00	62.38
Normal (≥-2sd - ≤+1sd)	688	27175	44.4	37.13	51.89	858	34051	55.6	48.11	62.87
Overweight (>+1sd - ≤+2sd)	179	6924	44.3	34.88	54.16	225	8705	55.7	45.84	65.12
Obese (>+2sd)	182	7550	44.3	34.07	55.01	246	9498	55.7	44.99	65.93
Height-for-age status (HAZ)										
Stunting (<-2sd)	57	2205	34.3	23.98	46.40	102	4220	65.7	53.60	76.02
Normal (≥-2sd)	1065	42462	45.4	37.89	53.19	1309	51006	54.6	46.81	62.11

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	2226	83.7	81.75	85.56
Jogging/Running	2045	77.3	74.07	80.30
Tagging	1709	67.1	59.94	73.46
Badminton	1706	65.3	57.86	72.08
Cycling	1583	60.7	51.15	69.54

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	357	13645	12.9	10.51	15.67	1563	62100	58.6	55.37	61.69
Locality of school										
Urban	103	3607	12.5	10.45	14.92	415	15140	52.5	45.72	59.22
Rural	254	10038	13.0	9.93	16.84	1148	46960	60.8	58.08	63.50
Sex										
Boys	205	6996	13.2	11.09	15.69	833	28879	54.6	50.43	58.68
Girls	152	6649	12.5	9.28	16.67	730	33221	62.5	59.02	65.91
Class										
Standard 4	36	1644	12.6	8.59	18.02	142	7159	54.7	49.52	59.80
Standard 5	35	1523	11.9	7.90	17.54	163	6930	54.2	46.81	61.33
Standard 6	18	892	6.9	2.65	16.56	159	7933	60.9	52.37	68.86
Form 1	43	1579	11.6	7.92	16.75	198	7567	55.7	47.49	63.65
Form 2	62	2376	17.8	12.34	24.90	196	7658	57.3	49.54	64.65
Form 3	71	2396	17.8	11.41	26.74	223	7421	55.2	48.69	61.46
Form 4	44	1450	11.0	7.27	16.25	245	8518	64.5	56.90	71.42
Form 5	48	1785	13.2	8.96	19.05	237	8914	66.0	60.14	71.32
Ethnicity										
Malay	252	9781	11.9	9.63	14.63	1227	49249	59.9	56.62	63.17
Chinese	69	2505	14.8	10.18	21.16	249	9378	55.6	48.82	62.15
Indian	32	1192	22.2	14.41	32.52	60	2367	44.0	38.36	49.89
Bumiputera Sabah	-	-	-	-	-	9	412	84.5	58.40	95.52
Bumiputera Sarawak	-	-	-	-	-	4	134	66.0	27.19	90.98
Others	4	167	17.9	9.09	32.20	14	559	59.9	39.66	77.22
School level										
Primary	89	4059	10.4	7.07	15.14	464	22022	56.6	51.80	61.29
Secondary	268	9586	14.3	11.57	17.50	1099	40078	59.7	55.65	63.62
BMI-for-age status (BAZ)										
Thinness (<-2sd)	25	845	14.2	9.35	20.91	86	3379	56.7	50.06	63.13
Normal (≥-2sd - ≤+1sd)	209	8100	12.4	10.17	15.14	942	37542	57.7	54.02	61.27
Overweight (>+1sd - ≤+2sd)	56	2129	12.8	9.65	16.87	254	9914	59.8	51.91	67.14
Obese (>+2sd)	66	2532	13.9	10.45	18.28	277	11135	61.2	56.56	65.57
Height-for-age status (HAZ)										
Stunting (<-2sd)	32	1270	18.8	13.52	25.52	92	3710	54.9	44.99	64.43
Normal (≥-2sd)	325	12375	12.5	10.14	15.23	1471	58390	58.8	55.55	62.00

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	760	30289	28.6	24.71	32.76
Locality of school					
Urban	285	10081	35.0	28.28	42.31
Rural	475	20208	26.2	22.06	30.76
Sex					
Boys	482	17028	32.2	27.62	37.12
Girls	278	13261	25.0	20.74	29.71
Class					
Standard 4	86	4283	32.7	26.22	39.98
Standard 5	94	4344	33.9	26.64	42.09
Standard 6	79	4195	32.2	24.48	41.08
Form 1	122	4435	32.7	23.89	42.83
Form 2	89	3339	25.0	17.59	34.17
Form 3	112	3635	27.0	20.20	35.13
Form 4	97	3241	24.5	18.28	32.08
Form 5	81	2817	20.8	15.59	27.29
Ethnicity					
Malay	572	23132	28.2	24.37	32.27
Chinese	135	4989	29.6	21.11	39.71
Indian	45	1815	33.8	25.04	43.80
Bumiputera Sabah	2	75	15.5	4.48	41.60
Bumiputera Sarawak	2	69	34.0	9.02	72.81
Others	4	208	22.2	8.36	47.25
School level					
Primary	259	12822	33.0	27.87	38.48
Secondary	501	17467	26.0	21.46	31.16
BMI-for-age status (BAZ)					
Thinness (<-2sd)	43	1735	29.1	20.63	39.37
Normal (≥-2sd - ≤+1sd)	488	19438	29.9	25.34	34.83
Overweight (>+1sd - ≤+2sd)	116	4547	27.4	21.33	34.46
Obese (>+2sd)	112	4539	24.9	21.21	29.07
Height-for-age status (HAZ)					
Stunting (<-2sd)	42	1777	26.3	17.33	37.80
Normal (≥-2sd)	718	28512	28.7	24.90	32.87

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 hours					More than 2 hours				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
MELAKA	1409	57927	54.5	47.49	61.40	1275	48294	45.5	38.60	52.51
Locality of school										
Urban	359	13547	47.0	33.41	61.03	444	15281	53.0	38.97	66.59
Rural	1050	44380	57.3	49.82	64.55	831	33012	42.7	35.45	50.18
Sex										
Boys	768	27895	52.6	44.60	60.51	754	25114	47.4	39.49	55.40
Girls	641	30032	56.4	47.83	64.68	521	23180	43.6	35.32	52.17
Class										
Standard 4	200	10018	76.1	70.20	81.20	65	3141	23.9	18.80	29.80
Standard 5	201	9005	70.1	65.82	74.12	92	3834	29.9	25.88	34.18
Standard 6	154	7892	60.6	57.09	64.03	102	5129	39.4	35.97	42.91
Form 1	201	7641	56.1	47.19	64.66	163	5975	43.9	35.34	52.81
Form 2	176	6836	51.3	40.79	61.60	170	6502	48.7	38.40	59.21
Form 3	190	6284	46.7	37.79	55.85	216	7169	53.3	44.15	62.21
Form 4	161	5498	41.5	34.38	49.00	226	7750	58.5	51.00	65.62
Form 5	126	4753	35.1	28.92	41.80	241	8794	64.9	58.20	71.08
Ethnicity										
Malay	1121	46210	56.2	49.17	62.93	933	36065	43.8	37.07	50.83
Chinese	162	6599	38.9	28.74	50.04	293	10382	61.1	49.96	71.26
Indian	98	3946	73.9	60.81	83.78	38	1394	26.1	16.22	39.19
Bumiputera Sabah	7	306	62.8	31.17	86.31	4	181	37.2	13.69	68.83
Bumiputera Sarawak	6	202	100.0	0.00	100.00	-	-	-	-	-
Others	15	663	71.0	54.15	83.50	7	271	29.0	16.50	45.85
School level										
Primary	555	26914	69.0	65.95	71.86	259	12104	31.0	28.14	34.05
Secondary	854	31012	46.1	39.69	52.74	1016	36190	53.9	47.26	60.31
BMI-for-age status (BAZ)										
Thinness (<-2sd)	83	3319	55.4	45.95	64.52	72	2670	44.6	35.48	54.05
Normal (≥-2sd - ≤+1sd)	868	35908	55.0	47.91	61.97	774	29329	45.0	38.03	52.09
Overweight (>+1sd - ≤+2sd)	211	8453	51.0	42.21	59.63	215	8136	49.0	40.37	57.79
Obese (>+2sd)	245	10181	55.9	47.73	63.80	210	8026	44.1	36.20	52.27
Height-for-age status (HAZ)										
Stunting (<-2sd)	99	4101	60.7	51.32	69.33	67	2656	39.3	30.67	48.68
Normal (≥-2sd)	1310	53826	54.1	46.94	61.13	1208	45637	45.9	38.87	53.06

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
MELAKA	1883	75631	71.42	67.49	75.05	793	30267	28.58	24.95	32.51
Locality of school										
Urban	560	20484	71.27	62.98	78.35	241	8257	28.73	21.65	37.02
Rural	1323	55146	71.47	66.96	75.60	552	22010	28.53	24.40	33.04
Sex										
Boys	1025	36043	68.19	64.32	71.83	493	16810	31.81	28.17	35.68
Girls	858	39587	74.63	68.96	79.57	300	13457	25.37	20.43	31.04
Class										
Standard 4	205	10226	77.92	72.34	82.64	59	2898	22.08	17.36	27.66
Standard 5	217	9740	75.86	68.29	82.10	76	3099	24.14	17.90	31.71
Standard 6	194	9849	75.97	67.65	82.70	61	3115	24.03	17.30	32.35
Form 1	269	10120	74.55	69.72	78.85	94	3455	25.45	21.15	30.28
Form 2	230	8897	66.70	58.69	73.85	116	4442	33.30	26.15	41.31
Form 3	271	9029	67.45	62.57	71.98	133	4357	32.55	28.02	37.43
Form 4	249	8613	65.21	55.81	73.56	137	4595	34.79	26.44	44.19
Form 5	248	9157	68.01	58.92	75.91	117	4308	31.99	24.09	41.08
Ethnicity										
Malay	1478	59966	73.13	69.37	76.58	569	22037	26.87	23.42	30.63
Chinese	266	10213	60.14	53.04	66.84	189	6769	39.86	33.16	46.96
Indian	112	4337	81.40	72.30	88.01	24	991	18.60	11.99	27.70
Bumiputera Sabah	6	262	53.79	25.16	80.12	5	225	46.21	19.88	74.84
Bumiputera Sarawak	5	164	100.00	0.00	100.00	-	-	-	-	-
Others	16	689	26.22	9.33	55.11	6	245	26.22	9.33	55.11
School level										
Primary	616	29816	76.59	73.63	79.31	196	9112	23.41	20.69	26.37
Secondary	1267	45815	68.41	63.44	72.99	597	21156	31.59	27.01	36.56
BMI-for-age status (BAZ)										
Thinness (<-2sd)	107	4172	69.66	60.21	77.71	48	1817	30.34	22.29	39.79
Normal (≥-2sd - ≤+1sd)	1162	46761	71.96	67.44	76.07	474	18221	28.04	23.93	32.56
Overweight (>+1sd - ≤+2sd)	296	11641	70.30	64.42	75.57	129	4919	29.70	24.43	35.58
Obese (>+2sd)	313	12887	70.94	65.28	76.01	141	5280	29.06	23.99	34.72
Height-for-age status (HAZ)										
Stunting (<-2sd)	125	5067	75.41	67.36	82.00	40	1652	24.59	18.00	32.64
Normal (≥-2sd)	1758	70564	71.15	67.09	74.90	753	28615	28.85	25.10	32.91

3.6. Supplements intake among adolescents (10 to 17 years old) in Melaka

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

3.6.1 Introduction

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

3.6.2 Objectives

General objective

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

Specific objective

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

3.6.3 Findings

The prevalence of vitamin/minerals and food supplements intake among adolescence in Melaka was 43.2% (95% CI: 35.34, 51.48) (**Table 3.6.1**) and 29.7% (95% CI: 23.79, 36.28) (**Table 3.6.5**). There was no significant difference of vitamin/mineral and food supplement intakes between boys and girls, ethnicity, school classes and localities (**Table 3.6.1** and **Table 3.6.5**). In average, the vitamin/mineral were consumed everyday by 15.5% (95% CI 12.41, 19.23) of adolescents (**Table 3.6.4**) and 9.1% (95% CI: 7.24, 11.30) for food supplements (**Table 3.6.8**). The most commonly consumed vitamin/minerals and food supplements were Vitamin C, 30.4% (95% CI: 24.50, 37.06) (**Table 3.6.2**) and Bee Product, 16.5% (95% CI: 12.33, 21.63) (**Table 3.6.6**). The main reason for taking vitamin / minerals and food supplements was due to parent's advised 43.4% (95% CI: 39.5, 47.3) (**Table 3.6.3**) and 25.7% (95% CI: 21.4, 30.7) (**Table 3.6.7**).

3.6.4 Discussions

The prevalence of taking vitamin/minerals and food supplements among adolescents in Melaka was slightly lower than 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 results were consistent with the national findings. Findings from the survey showed that parent's advice was the main and significant reason for taking vitamin/mineral and food supplements among adolescents in Melaka. It suggests the parents as strong influence for the intake of food supplement and vitamin of the children.

3.6.5 Conclusions

Overall findings from this survey showed that every four and three of ten adolescents in Melaka consumed vitamin / mineral and food supplements. Almost every four and three of ten parents influenced the children's vitamin/ mineral and food supplements intake. Vitamin C and Bee products remain as the main type of vitamin and food supplement consumed by Melaka adolescents.

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.

References

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

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	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
Melaka	1126	45935	43.2	35.34	51.48	1559	60320	56.8	48.52	64.66
Locality of School										
Urban	309	11730	40.7	25.81	57.51	494	17097	59.3	42.49	74.19
Rural	817	34204	44.2	35.22	53.53	1065	43222	55.8	46.47	64.78
Sex										
Boys	701	25937	48.9	39.54	58.33	822	27106	51.1	41.67	60.46
Girls	425	19998	37.6	29.46	46.47	737	33214	62.4	53.53	70.54
Class										
Standard 4	206	10050	76.4	69.80	81.89	59	3109	23.6	18.11	30.20
Standard 5	191	8279	64.5	59.68	69.01	102	4560	35.5	30.99	40.32
Standard 6	129	6148	47.2	36.32	58.40	127	6872	52.8	41.60	63.68
Remove class										
Form 1	171	6349	46.6	41.40	51.93	193	7267	53.4	48.07	58.60
Form 2	125	4727	35.3	28.36	43.02	222	8646	64.7	56.98	71.64
Form 3	117	3793	28.2	22.47	34.73	289	9659	71.8	65.27	77.53
Form 4	91	3000	22.6	17.70	28.49	296	10248	77.4	71.51	82.30
Form 5	96	3589	26.5	21.39	32.30	271	9958	73.5	67.70	78.61
Ethnicity										
Malay	889	36501	44.4	35.41	53.70	1165	45774	55.6	46.30	64.59
Chinese	152	5837	34.4	29.33	39.80	303	11144	65.6	60.20	70.67
Indian	68	2813	52.3	39.53	64.86	69	2561	47.7	35.14	60.47
Bumiputera Sabah	6	294	60.3	18.91	90.81	5	194	39.7	9.19	81.09
Bumiputera Sarawak	4	136	67.3	13.85	96.33	2	66	32.7	3.67	86.15
Others	7	354	37.9	20.34	59.29	15	580	62.1	40.71	79.66
BMI-for age status (BAZ)										
Thinness (<-2sd)	85	3496	58.4	46.83	69.07	70	2493	41.6	30.93	53.17
Normal (≥-2sd - ≤+1sd)	697	28324	43.4	35.87	51.24	946	36947	56.6	48.76	64.13
Overweight (>+1sd - ≤+2sd)	159	6380	38.5	29.29	48.52	267	10209	61.5	51.48	70.71
Obese (>+2sd)	182	7626	41.9	32.30	52.12	273	10581	58.1	47.88	67.70
Height-for-age status (HAZ)										
Stunting (<-2sd)	66	2763	40.9	29.81	52.98	100	3994	59.1	47.02	70.19
Normal (≥-2sd)	1060	43172	43.4	35.54	51.59	1459	56325	56.6	48.41	64.46

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Multivitamin					Vitamin C				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	110	4235	4.0	3.20	4.97	778	32269	30.4	24.50	37.06
Locality of School										
Urban	33	1113	3.9	2.53	5.87	209	8090	28.1	16.59	43.51
Rural	77	3122	4.0	3.11	5.22	569	24179	31.3	24.79	38.56
Sex										
Boys	78	2692	5.1	3.87	6.66	467	17664	33.4	25.63	42.09
Girls	32	1544	2.9	2.04	4.11	311	14606	27.5	22.06	33.67
Class										
Standard 4	20	934	7.1	3.37	14.32	149	7408	56.3	49.77	62.62
Standard 5	11	536	4.2	2.65	6.56	130	5602	43.7	38.70	48.90
Standard 6	10	396	3.0	1.10	8.14	98	4687	36.0	27.58	45.37
Remove class										
Form 1	18	636	4.7	3.07	7.04	125	4725	34.7	28.42	41.56
Form 2	18	667	5.0	3.40	7.26	81	3111	23.3	19.37	27.69
Form 3	11	304	2.3	1.10	4.61	84	2804	20.9	16.19	26.64
Form 4	10	310	2.3	1.38	3.97	60	2043	15.5	11.92	19.91
Form 5	12	453	3.3	1.88	5.88	51	1889	13.9	10.77	17.86
Ethnicity										
Malay	81	3207	3.9	3.04	4.99	630	26239	31.9	25.37	39.24
Chinese	19	606	3.6	1.82	6.90	94	3710	21.9	17.74	26.68
Indian	8	347	6.5	3.18	12.92	44	1833	34.5	25.25	45.12
Bumiputera Sabah	1	34	6.9	0.71	43.53	3	171	35.1	10.14	72.19
Bumiputera Sarawak	-	-	-	-	-	3	102	50.6	15.84	84.74
Others	1	42	4.6	0.52	31.23	4	213	23.8	10.43	45.51
BMI-for age status (BAZ)										
Thinness (<-2sd)	19	725	12.1	8.19	17.55	53	2225	37.2	28.35	46.91
Normal (≥ - 2sd - ≤+ 1sd)	61	2395	3.7	2.74	4.92	494	20422	31.3	25.28	38.09
Overweight (> +1sd - ≤+ 2sd)	9	314	1.9	1.03	3.49	115	4714	28.5	21.82	36.35
Obese (> + 2sd)	21	800	4.4	2.89	6.64	114	4833	26.5	19.72	34.72
Height-for - age status (HAZ)										
Stunting (<-2sd)	6	234	3.5	1.37	8.45	44	1833	27.1	18.92	37.25
Normal (≥-2sd)	104	4002	4.0	3.20	5.05	734	30437	30.6	24.75	37.24

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Iron					Others				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	125	5064	4.8	3.50	6.47	148	6093	5.7	4.09	8.01
Locality of School										
Urban	36	1475	5.1	2.50	10.25	37	1287	4.5	3.04	6.54
Rural	89	3589	4.6	3.36	6.37	111	4805	6.2	4.14	9.22
Sex										
Boys	87	3272	6.2	4.46	8.50	92	3348	6.3	4.59	8.65
Girls	38	1791	3.4	2.23	5.06	56	2744	5.2	3.33	7.93
Class										
Standard 4	19	933	7.1	5.08	9.83	23	1200	9.1	6.01	13.60
Standard 5	27	1051	8.2	5.20	12.71	33	1526	11.9	6.38	21.17
Standard 6	20	988	7.6	4.27	13.14	12	575	4.4	2.08	9.11
Remove class										
Form 1	17	603	4.4	2.77	7.00	13	474	3.5	1.94	6.15
Form 2	14	523	3.9	1.99	7.52	19	688	5.1	3.40	7.72
Form 3	6	193	1.4	0.64	3.21	13	392	2.9	1.61	5.27
Form 4	11	344	2.6	1.35	4.97	12	392	3.0	1.74	5.03
Form 5	11	429	3.2	1.83	5.40	23	847	6.3	3.97	9.70
Ethnicity										
Malay	103	4166	5.1	3.54	7.19	107	4389	5.3	3.68	7.69
Chinese	14	508	3.0	1.60	5.57	31	1343	7.9	4.63	13.23
Indian	6	289	5.4	2.67	10.78	9	327	6.2	3.20	11.54
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	1	34	16.7	2.90	57.40
Others	2	99	11.1	3.08	33.02	-	-	-	-	-
BMI-for age status (BAZ)										
Thinness (<-2sd)	8	310	5.2	2.44	10.61	5	227	3.8	1.55	9.03
Normal (≥ - 2sd - ≤+ 1sd)	78	3144	4.8	3.37	6.87	87	3508	5.4	3.90	7.38
Overweight (> +1sd - ≤+ 2sd)	21	898	5.4	3.40	8.59	19	690	4.2	2.23	7.68
Obese (> + 2sd)	18	712	3.9	2.61	5.83	36	1634	9.0	5.18	15.09
Height-for - age status (HAZ)										
Stunting (<-2sd)	7	293	4.3	1.65	10.93	10	478	7.1	2.85	16.46
Normal (≥-2sd)	118	4770	4.8	3.50	6.55	138	5615	5.7	4.15	7.66

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Doctor's Instruction					Parents' advice				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	192	7987	17.46	13.95	21.65	482	19837	43.37	39.49	47.34
Locality of School										
Urban	36	1457	12.52	7.01	21.35	154	5918	50.85	43.70	57.96
Rural	156	6530	19.15	15.28	23.73	328	13919	40.82	37.41	44.32
Sex										
Boys	124	4680	18.14	14.46	22.50	276	10438	40.45	36.18	44.87
Girls	68	3307	16.59	12.29	22.03	206	9399	47.16	40.16	54.28
Class										
Standard 4	49	2385	23.82	20.47	27.53	80	3976	39.71	36.33	43.20
Standard 5	48	2014	24.33	16.62	34.15	66	2878	34.77	27.25	43.13
Standard 6	18	798	13.25	7.71	21.81	61	2881	47.81	38.97	56.79
Remove class										
Form 1	29	1060	16.79	9.66	27.57	87	3298	52.24	41.89	62.41
Form 2	18	693	14.67	7.81	25.86	58	2217	46.90	36.41	57.67
Form 3	10	331	8.73	4.27	17.03	54	1807	47.64	40.36	55.02
Form 4	13	421	14.03	6.34	28.23	31	1066	35.53	26.74	45.43
Form 5	45	285	47.79	30.52	65.60	38	1715	38.74	25.09	54.42
Ethnicity										
Malay	154	6243	17.20	13.80	21.23	371	15621	43.03	39.52	46.61
Chinese	14	641	10.98	5.46	20.85	80	2914	49.93	32.38	67.49
Indian	21	956	33.99	20.40	50.85	24	939	33.39	21.64	47.63
Bumiputera Sabah	1	45	15.29	2.41	56.86	4	215	73.24	36.12	92.98
Bumiputera Sarawak	1	42	30.59	7.51	70.53	1	27	19.97	1.66	78.69
Others	1	61	17.11	3.12	56.94	2	120	33.93	6.25	79.83
BMI-for age status (BAZ)										
Thinness (<-2sd)	15	634	18.33	12.24	26.54	38	1586	45.86	33.85	58.37
Normal (≥ - 2sd - ≤+ 1sd)	105	4367	15.42	11.50	20.37	304	12514	44.18	39.37	49.11
Overweight (> +1sd - ≤+ 2sd)	38	1580	25.18	16.71	36.09	57	2254	35.93	25.51	47.88
Obese (> + 2sd)	34	1406	18.57	12.92	25.96	82	3446	45.52	38.36	52.86
Height-for - age status (HAZ)										
Stunting (<-2sd)	11	421	15.24	7.05	29.88	31	1338	48.41	32.90	64.23
Normal (≥-2sd)	181	7566	17.61	13.95	21.98	451	18499	43.05	39.20	46.99

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Self awareness					Influences by friends				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	348	13903	30.40	28.13	32.77	18	728	1.59	1.03	2.46
Locality of School										
Urban	96	3529	30.32	25.99	35.03	4	154	1.32	0.53	3.23
Rural	252	10375	30.43	27.80	33.19	14	574	1.68	1.02	2.77
Sex										
Boys	232	8371	32.44	29.40	35.63	15	598	2.32	1.45	3.69
Girls	116	5532	27.76	24.71	31.03	3	130	0.65	0.18	2.34
Class										
Standard 4	62	3019	30.16	26.83	33.72	1	52	0.52	0.07	3.79
Standard 5	59	2469	29.83	24.59	35.65	3	111	1.34	0.55	3.22
Standard 6	36	1782	29.59	21.76	38.83	3	156	2.60	0.79	8.16
Remove class										
Form 1	42	1520	24.09	18.50	30.73	5	178	2.81	1.14	6.77
Form 2	38	1428	30.22	22.78	38.87	2	71	1.50	0.20	10.41
Form 3	36	1109	29.23	21.93	37.78	1	39	1.02	0.13	7.44
Form 4	37	1184	39.48	31.47	48.10	2	71	2.37	0.64	8.43
Form 5	1	1390	1.40	0.23	8.07	5	50	4.12	1.74	9.45
Ethnicity										
Malay	287	11633	32.05	29.74	34.45	14	547	1.51	0.97	2.34
Chinese	43	1616	27.68	22.04	34.13	4	181	3.11	1.01	9.16
Indian	11	380	13.51	8.46	20.89					
Bumiputera Sabah	1	34	11.47	1.14	59.37					
Bumiputera Sarawak	2	67	49.44	19.71	79.57					
Others	4	173	48.96	20.47	78.15					
BMI-for age status (BAZ)										
Thinness (<-2sd)	25	959	27.72	19.01	38.50	4	184	5.33	1.81	14.66
Normal (≥ - 2sd - ≤+ 1sd)	216	8591	30.33	26.32	34.67	9	347	1.23	0.59	2.52
Overweight (> +1sd - ≤+ 2sd)	53	2093	33.36	25.88	41.78	3	112	1.78	0.35	8.54
Obese (> + 2sd)	53	2223	29.36	23.03	36.61	2	85	1.12	0.26	4.70
Height-for - age status (HAZ)										
Stunting (<-2sd)	19	814	29.46	19.97	41.15	1	36	1.29	0.14	10.57
Normal (≥-2sd)	329	13089	30.46	27.97	33.07	17	693	1.61	1.08	2.39

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

Characteristics	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Melaka	66	2631	5.75	4.04	8.13
Locality of School					
Urban	14	501	4.31	3.10	5.97
Rural	52	2130	6.25	4.11	9.39
Sex					
Boys	43	1470	5.70	3.79	8.49
Girls	23	1161	5.83	3.67	9.13
Class					
Standard 4	11	502	5.01	3.90	6.41
Standard 5	12	655	7.91	2.53	22.14
Standard 6	6	277	4.60	2.36	8.78
Remove class					
Form 1	6	215	3.40	1.09	10.10
Form 2	8	275	5.82	1.68	18.24
Form 3	12	380	10.03	4.97	19.19
Form 4	6	180	5.99	2.86	12.12
Form 5	96	148	100.00	100.00	100.00
Ethnicity					
Malay	47	1788	4.93	3.59	6.72
Chinese	11	485	8.31	3.46	18.63
Indian	8	359	12.75	6.79	22.65
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
BMI-for age status (BAZ)					
Thinness (<-2sd)	2	96	2.76	0.60	11.76
Normal (≥ - 2sd - ≤+ 1sd)	52	2061	7.28	5.06	10.35
Overweight (> +1sd - ≤+ 2sd)	4	152	2.43	0.70	8.08
Obese (> + 2sd)	8	322	4.25	2.29	7.77
Height-for - age status (HAZ)					
Stunting (<-2sd)	4	155	5.60	2.02	14.60
Normal (≥-2sd)	62	2477	5.76	3.97	8.30

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Everyday					5 to 6 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	391	16432	15.5	12.41	19.23	161	6423	6.1	4.62	7.93
Locality of School										
Urban	99	3708	12.9	9.14	17.94	43	1660	5.8	3.73	8.86
Rural	292	12724	16.5	12.70	21.11	118	4763	6.2	4.41	8.56
Sex										
Boys	216	8154	15.4	11.84	19.85	116	4352	8.2	5.83	11.50
Girls	175	8278	15.6	12.41	19.43	45	2071	3.9	2.92	5.20
Class										
Standard 4	84	4165	31.7	28.60	35.07	32	1526	11.6	7.24	18.17
Standard 5	57	2649	20.7	15.91	26.46	37	1422	11.1	8.05	15.14
Standard 6	52	2405	18.7	13.92	24.57	15	706	5.5	3.57	8.33
Remove class										
Form 1	59	2190	16.1	12.26	20.82	21	827	6.1	3.37	10.71
Form 2	36	1372	10.3	6.28	16.31	23	872	6.5	3.97	10.53
Form 3	41	1384	10.3	8.50	12.51	13	389	2.9	1.66	5.06
Form 4	29	1019	7.7	5.63	10.52	10	303	2.3	1.20	4.36
Form 5	33	1248	9.2	6.96	12.09	10	377	2.8	1.38	5.52
Ethnicity										
Malay	299	12764	15.6	11.99	19.93	124	4959	6.0	4.54	8.00
Chinese	56	2083	12.3	10.11	14.85	23	936	5.5	3.61	8.34
Indian	29	1207	22.7	16.43	30.54	12	453	8.5	4.22	16.46
Bumiputera Sabah	3	170	34.9	8.70	75.15	1	34	6.9	0.71	43.53
Bumiputera Sarawak	2	69	34.0	9.02	72.81	-	-	-	-	-
Others	2	139	15.5	4.06	44.43	1	42	4.6	0.52	31.23
BMI-for age status (BAZ)										
Thinness (<-2sd)	22	933	15.7	10.62	22.59	12	544	9.1	5.52	14.79
Normal (≥ - 2sd - ≤+ 1sd)	255	10720	16.5	13.06	20.58	96	3792	5.8	4.27	7.90
Overweight (> +1sd - ≤+ 2sd)	52	2201	13.3	9.82	17.77	24	874	5.3	3.38	8.14
Obese (> + 2sd)	61	2541	14.0	10.23	18.83	29	1214	6.7	3.55	12.22
Height-for - age status (HAZ)										
Stunting (<-2sd)	15	597	8.8	4.44	16.80	12	483	7.2	3.54	13.94
Normal (≥-2sd)	376	15835	16.0	12.82	19.72	149	5940	6.0	4.52	7.90

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Melaka	227	9295	8.8	7.18	10.68	350	13987	13.2	10.81	16.04
Locality of School										
Urban	62	2360	8.2	5.23	12.68	103	3905	13.6	8.60	20.85
Rural	165	6935	9.0	7.22	11.13	247	10082	13.1	10.52	16.10
Sex										
Boys	148	5360	10.1	8.60	11.92	230	8501	16.1	13.24	19.39
Girls	79	3935	7.4	5.01	10.85	120	5486	10.3	7.82	13.55
Class										
Standard 4	34	1796	13.7	8.73	20.82	56	2645	20.2	14.97	26.58
Standard 5	40	1806	14.1	10.01	19.54	58	2446	19.1	14.72	24.43
Standard 6	25	1208	9.4	5.89	14.61	41	1966	15.3	12.49	18.50
Remove class										
Form 1	33	1210	8.9	7.01	11.20	54	1981	14.6	11.62	18.07
Form 2	25	916	6.9	5.18	9.01	47	1778	13.3	9.94	17.57
Form 3	23	737	5.5	3.51	8.54	36	1148	8.6	5.82	12.45
Form 4	25	781	5.9	3.86	9.01	28	956	7.2	4.47	11.53
Form 5	22	839	6.2	3.74	10.10	30	1067	7.9	5.55	11.06
Ethnicity										
Malay	179	7363	9.0	7.28	11.01	290	11627	14.2	11.62	17.17
Chinese	36	1424	8.4	6.11	11.44	38	1420	8.4	6.82	10.24
Indian	8	341	6.4	3.08	12.92	18	776	14.6	7.70	25.97
Bumiputera Sabah	-	-	-	-	-	2	90	18.4	2.11	70.36
Bumiputera Sarawak	2	67	33.3	9.00	71.49	-	-	-	-	-
Others	2	99	11.1	3.06	32.92	2	74	8.3	2.08	27.81
BMI-for age status (BAZ)										
Thinness (<-2sd)	18	742	12.5	8.32	18.32	31	1175	19.8	14.25	26.75
Normal ($\geq -2sd - \leq +1sd$)	138	5652	8.7	7.12	10.56	211	8358	12.8	10.84	15.16
Overweight ($> +1sd - \leq +2sd$)	28	1062	6.4	4.30	9.47	59	2417	14.6	9.80	21.21
Obese ($> +2sd$)	43	1838	10.1	7.11	14.20	48	2003	11.0	8.48	14.21
Height-for - age status (HAZ)										
Stunting (<-2sd)	16	698	10.3	6.34	16.41	19	797	11.8	7.45	18.18
Normal ($\geq -2sd$)	211	8596	8.7	7.07	10.59	331	13189	13.3	10.95	16.06

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Taking food supplement					Not taking food supplement				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	778	31504	29.7	23.79	36.28	1906	74723	70.3	63.72	76.21
Locality of School										
Urban	208	7908	27.4	16.89	41.30	595	20920	72.6	58.70	83.11
Rural	570	23595	30.5	23.81	38.09	1311	53804	69.5	61.91	76.19
Sex										
Boys	497	18341	34.6	27.50	42.46	1025	34674	65.4	57.54	72.50
Girls	281	13163	24.7	18.79	31.83	881	40049	75.3	68.17	81.21
Class										
Standard 4	140	6746	51.3	41.89	60.55	125	6413	48.7	39.45	58.11
Standard 5	137	5822	45.3	40.12	50.68	156	7017	54.7	49.32	59.88
Standard 6	98	4786	36.8	30.36	43.66	158	8234	63.2	56.34	69.64
Remove class										
Form 1	100	3729	27.4	21.23	34.54	264	9887	72.6	65.46	78.77
Form 2	91	3350	25.1	18.36	33.20	256	10022	74.9	66.80	81.64
Form 3	84	2676	19.9	15.71	24.94	321	10749	80.1	75.06	84.29
Form 4	72	2368	17.9	13.65	23.05	315	10880	82.1	76.95	86.35
Form 5	56	2026	15.0	9.55	22.65	311	11520	85.0	77.35	90.45
Ethnicity										
Malay	600	24566	29.9	23.06	37.68	1454	57709	70.1	62.32	76.94
Chinese	119	4554	26.8	21.43	32.99	336	12427	73.2	67.01	78.57
Indian	48	1898	35.5	23.18	50.09	88	3449	64.5	49.91	76.82
Bumiputera Sabah	3	136	27.9	11.02	54.81	8	352	72.1	45.19	88.98
Bumiputera Sarawak	3	106	52.3	29.68	74.05	3	96	47.7	25.95	70.32
Others	5	244	26.1	12.12	47.43	17	690	73.9	52.57	87.88
BMI-for age status (BAZ)										
Thinness (<-2sd)	51	1945	32.6	23.24	43.66	103	4016	67.4	56.34	76.76
Normal (≥ - 2sd - ≤+ 1sd)	480	19638	30.1	23.85	37.16	1163	45632	69.9	62.84	76.15
Overweight (> +1sd - ≤+ 2sd)	114	4544	27.4	20.02	36.24	312	12045	72.6	63.76	79.98
Obese (> + 2sd)	131	5304	29.1	23.44	35.57	324	12903	70.9	64.43	76.56
Height-for - age status (HAZ)										
Stunting (<-2sd)	49	2069	30.6	20.94	42.35	117	4689	69.4	57.65	79.06
Normal (≥-2sd)	729	29435	29.6	23.81	36.12	1789	70034	70.4	63.88	76.19

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Spirulina					Fish oil				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	82	3246	3.1	2.31	4.06	144	5656	5.3	4.45	6.39
Locality of School										
Urban	24	884	3.1	2.00	4.68	42	1545	5.4	3.83	7.47
Rural	58	2363	3.1	2.14	4.36	102	4111	5.3	4.29	6.59
Sex										
Boys	47	1642	3.1	2.26	4.23	100	3667	6.9	5.63	8.49
Girls	35	1605	3.0	2.01	4.54	44	1989	3.8	2.89	4.86
Class										
Standard 4	18	843	6.4	3.73	10.76	28	1374	10.4	7.23	14.85
Standard 5	11	423	3.3	1.82	5.90	17	641	5.0	2.44	9.96
Standard 6	8	409	3.1	1.54	6.30	13	677	5.2	2.95	9.03
Remove class										
Form 1	16	605	4.4	2.22	8.69	23	846	6.2	4.18	9.13
Form 2	12	466	3.5	1.71	6.97	19	689	5.2	3.44	7.65
Form 3	7	188	1.4	0.49	4.03	16	497	3.8	2.18	6.38
Form 4	7	210	1.6	0.79	3.18	15	472	3.6	1.67	7.50
Form 5	3	104	0.8	0.23	2.53	13	460	3.4	1.35	8.27
Ethnicity										
Malay	60	2404	2.9	2.05	4.16	98	4002	4.9	3.91	6.04
Chinese	11	382	2.3	1.06	4.79	31	1115	6.6	4.88	8.91
Indian	9	385	7.3	3.74	13.63	15	539	10.1	6.25	16.06
Bumiputera Sabah	1	47	9.7	1.52	42.73	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	28	3.0	0.48	16.31	-	-	-	-	-
BMI-for age status (BAZ)										
Thinness (<-2sd)	8	288	4.8	2.45	9.36	5	194	3.3	1.29	7.97
Normal ($\geq -2sd - \leq +1sd$)	44	1828	2.8	1.99	3.95	95	3732	5.7	4.55	7.21
Overweight ($> +1sd - \leq +2sd$)	16	586	3.5	2.18	5.71	19	801	4.8	2.98	7.77
Obese ($> +2sd$)	13	505	2.8	1.49	5.12	25	929	5.1	3.53	7.32
Height-for - age status (HAZ)										
Stunting (<-2sd)	9	366	5.4	2.53	11.22	3	118	1.7	0.59	5.04
Normal ($\geq -2sd$)	73	2880	2.9	2.15	3.90	141	5538	5.6	4.68	6.65

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Bee Product					Chicken essence				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	424	17445	16.5	12.33	21.63	61	2563	2.4	1.53	3.80
Locality of School										
Urban	94	3758	13.0	6.72	23.81	27	1062	3.7	1.70	7.82
Rural	330	13687	17.7	12.98	23.75	34	1502	1.9	1.19	3.17
Sex										
Boys	250	9273	17.5	12.69	23.66	42	1638	3.1	1.80	5.25
Girls	174	8172	15.4	10.77	21.57	19	926	1.7	1.04	2.91
Class										
Standard 4	81	4021	30.6	24.01	38.00	14	772	5.9	3.06	10.97
Standard 5	90	3674	28.6	23.52	34.32	15	634	4.9	2.44	9.73
Standard 6	60	2786	21.4	14.15	31.02	4	181	1.4	0.75	2.56
Remove class										
Form 1	49	1871	13.7	9.01	20.40	7	244	1.8	0.67	4.67
Form 2	44	1672	12.5	9.52	16.26	5	171	1.3	0.50	3.24
Form 3	46	1534	11.6	8.87	14.97	3	79	0.6	0.20	1.75
Form 4	33	1121	8.5	5.99	11.93	9	291	2.2	1.30	3.74
Form 5	21	766	5.7	3.70	8.53	4	190	1.4	0.42	4.61
Ethnicity										
Malay	368	15255	18.6	13.88	24.36	37	1653	2.0	1.24	3.24
Chinese	41	1531	9.1	6.33	12.87	16	540	3.2	1.57	6.43
Indian	12	543	10.2	5.13	19.32	6	286	5.4	1.55	17.02
Bumiputera Sabah	-	-	-	-	-	1	45	9.2	1.21	45.65
Bumiputera Sarawak	2	75	37.1	10.08	75.67	-	-	-	-	-
Others	1	42	4.5	0.50	30.07	1	39	4.2	0.43	30.92
BMI-for age status (BAZ)										
Thinness (<-2sd)	27	1067	17.9	11.48	26.94	7	296	5.0	2.04	11.63
Normal (≥ - 2sd - ≤+ 1sd)	270	11104	17.1	12.68	22.56	35	1466	2.3	1.45	3.49
Overweight (> +1sd - ≤+ 2sd)	56	2294	13.9	9.14	20.47	13	539	3.3	1.47	7.07
Obese (> + 2sd)	70	2946	16.2	11.41	22.45	6	262	1.4	0.59	3.50
Height-for - age status (HAZ)										
Stunting (<-2sd)	28	1162	17.2	10.59	26.71	2	91	1.4	0.31	5.68
Normal (≥-2sd)	396	16283	16.4	12.31	21.54	59	2472	2.5	1.54	4.00

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

Characteristics	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Melaka	157	6339	6.0	4.64	7.67
Locality of School					
Urban	40	1362	4.7	2.54	8.62
Rural	117	4977	6.4	4.99	8.30
Sex					
Boys	106	3880	7.3	5.34	9.98
Girls	51	2459	4.6	3.50	6.12
Class					
Standard 4	22	1042	7.9	6.85	9.14
Standard 5	19	980	7.6	3.63	15.33
Standard 6	20	1034	7.9	5.67	11.01
Remove class					
Form 1	12	474	3.5	1.86	6.43
Form 2	23	803	6.0	3.32	10.62
Form 3	21	612	4.6	2.31	9.02
Form 4	20	695	5.3	3.20	8.56
Form 5	20	699	5.2	3.18	8.27
Ethnicity					
Malay	109	4319	5.3	4.26	6.47
Chinese	27	1194	7.1	3.49	13.87
Indian	16	576	10.8	4.78	22.75
Bumiputera Sabah	-	-	-	-	-
Bumiputera Sarawak	1	34	16.7	2.90	57.40
Others	4	216	23.1	8.61	48.98
BMI-for age status (BAZ)					
Thinness (<-2sd)	11	430	7.2	4.01	12.69
Normal (≥ - 2sd - ≤+ 1sd)	89	3648	5.6	4.15	7.54
Overweight (> +1sd - ≤+ 2sd)	26	982	5.9	3.84	9.06
Obese (> + 2sd)	31	1279	7.0	4.76	10.26
Height-for - age status (HAZ)					
Stunting (<-2sd)	6	288	4.3	1.80	9.74
Normal (≥-2sd)	151	6051	6.1	4.80	7.73

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Doctor's Instruction					Parents' advice				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	98	4152	9.1	6.61	12.30	287	11796	25.7	21.36	30.67
Locality of School										
Urban	10	400	3.4	1.86	6.21	96	3791	32.4	25.91	39.68
Rural	88	3752	11.0	8.43	14.22	191	8005	23.5	18.72	28.96
Sex										
Boys	58	2274	8.8	6.13	12.45	176	6665	25.8	20.15	32.31
Girls	40	1878	9.4	6.49	13.45	111	5130	25.7	20.83	31.28
Class										
Standard 4	32	1512	15.0	11.22	19.87	57	2793	27.8	22.66	33.57
Standard 5	25	1050	12.7	8.63	18.26	52	2189	26.4	20.29	33.67
Standard 6	4	209	3.4	1.22	9.14	49	2275	37.0	24.61	51.38
Remove class										
Form 1	12	458	7.3	4.28	12.16	41	1535	24.5	17.53	33.03
Form 2	14	511	10.8	4.29	24.73	28	1041	22.0	13.38	34.05
Form 3	2	65	1.7	0.43	6.45	30	927	24.4	17.76	32.65
Form 4	7	266	9.0	3.80	19.82	16	489	16.5	10.66	24.74
Form 5	2	82	2.3	0.49	9.95	14	546	15.2	6.74	30.85
Ethnicity										
Malay	81	3349	9.2	6.78	12.35	228	9597	26.3	21.63	31.67
Chinese	8	388	6.7	2.77	15.31	44	1599	27.6	21.46	34.69
Indian	8	374	13.3	7.96	21.38	12	453	16.1	7.75	30.44
Bumiputera Sabah	1	45	15.3	2.41	56.86					
Bumiputera Sarawak	1	42	30.6	7.51	70.53					
Others	2	102	28.9	8.90	62.77					
BMI-for age status (BAZ)										
Thinness (<-2sd)	7	318	9.3	4.79	17.26	25	951	27.8	18.38	39.77
Normal (≥ - 2sd - ≤+ 1sd)	57	2414	8.5	5.58	12.83	174	7275	25.7	20.44	31.80
Overweight (> +1sd - ≤+ 2sd)	14	602	9.4	5.21	16.51	37	1519	23.8	17.41	31.67
Obese (> + 2sd)	20	818	10.7	7.20	15.70	49	1978	25.9	19.54	33.55
Height-for - age status (HAZ)										
Stunting (<-2sd)	8	324	11.7	5.85	22.07	17	727	26.3	12.77	46.59
Normal (≥-2sd)	90	3829	8.9	6.42	12.19	270	11068	25.70	21.58	30.31

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Self awareness					Influences by friends				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	220	8988	19.6	16.95	22.58	30	1146	2.5	1.64	3.80
Locality of School										
Urban	56	2037	17.4	15.14	19.96	4	156	1.3	0.65	2.74
Rural	164	6951	20.4	17.09	24.09	26	990	2.9	1.81	4.62
Sex										
Boys	146	5319	20.6	17.80	23.64	23	790	3.1	1.79	5.16
Girls	74	3669	18.4	14.65	22.82	7	357	1.8	0.84	3.74
Class										
Standard 4	41	2087	20.8	16.36	25.99	5	207	2.1	0.68	6.05
Standard 5	37	1580	19.1	16.00	22.60	4	148	1.8	0.68	4.60
Standard 6	24	1247	20.3	12.71	30.77	4	209	3.4	1.19	9.31
Remove class										
Form 1	27	1027	16.4	10.26	25.07	3	101	1.6	0.55	4.69
Form 2	23	838	17.7	10.77	27.77	3	122	2.6	0.89	7.32
Form 3	26	788	20.8	12.44	32.63	7	222	5.9	1.87	16.89
Form 4	21	677	22.9	16.80	30.39	3	106	3.6	1.35	9.17
Form 5	21	744	20.7	16.01	26.43	1	30	0.8	0.09	7.11
Ethnicity										
Malay	169	7014	19.3	16.27	22.64	23	838	2.3	1.34	3.91
Chinese	28	1016	17.5	13.57	22.35	1	34	0.6	0.07	4.74
Indian	18	713	25.4	13.65	42.18	6	275	9.8	4.55	19.74
Bumiputera Sabah										
Bumiputera Sarawak	2	67	49.4	19.71	79.57					
Others	3	178	50.3	21.27	79.12					
BMI-for age status (BAZ)										
Thinness (<-2sd)	14	528	15.4	9.04	25.12	3	109	3.2	1.06	9.26
Normal (≥ - 2sd - ≤+ 1sd)	138	5631	19.9	16.54	23.75	19	726	2.6	1.43	4.55
Overweight (> +1sd - ≤+ 2sd)	31	1172	18.4	13.00	25.30	5	201	3.1	1.25	7.73
Obese (> + 2sd)	37	1657	21.7	15.26	29.97	3	110	1.4	0.49	4.17
Height-for - age status (HAZ)										
Stunting (<-2sd)	12	599	21.7	10.95	38.33	1	39	1.4	0.21	8.77
Normal (≥ -2sd)	208	8390	19.5	16.84	22.43	29	1107	2.6	1.66	3.97

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

Characteristics	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Melaka	48	2018	4.4	3.20	6.03
Locality of School					
Urban	9	360	3.1	1.81	5.20
Rural	39	1658	4.9	3.42	6.87
Sex					
Boys	30	1178	4.6	3.28	6.29
Girls	18	841	4.2	2.38	7.36
Class					
Standard 4	10	472	4.7	2.63	8.28
Standard 5	14	645	7.8	4.54	13.05
Standard 6	6	290	4.7	2.09	10.28
Remove class					
Form 1	4	142	2.3	0.93	5.42
Form 2	2	66	1.4	0.34	5.51
Form 3	5	162	4.3	1.66	10.51
Form 4	5	166	5.6	2.14	13.91
Form 5	2	75	2.1	0.43	9.67
Ethnicity					
Malay	39	1583	4.3	3.22	5.85
Chinese	6	317	5.5	1.64	16.74
Indian	2	74	2.6	0.56	11.43
Bumiputera Sabah	1	44	15.0	1.53	66.74
Bumiputera Sarawak					
Others					
BMI-for age status (BAZ)					
Thinness (<-2sd)	2	115	3.4	0.87	12.16
Normal ($\geq -2sd - \leq +1sd$)	37	1503	5.3	3.79	7.40
Overweight ($> +1sd - \leq +2sd$)	6	292	4.6	1.97	10.27
Obese ($> +2sd$)	3	109	1.4	0.52	3.83
Height-for - age status (HAZ)					
Stunting (<-2sd)	3	91	3.3	1.15	9.13
Normal ($\geq -2sd$)	45	1927	4.5	3.27	6.10

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	Everyday					5 to 6 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Melaka	231	9607	9.1	7.24	11.30	107	4304	4.1	3.11	5.29
Locality of School										
Urban	59	2318	8.1	5.18	12.33	31	1123	3.9	2.53	5.99
Rural	172	7289	9.4	7.30	12.13	76	3180	4.1	2.97	5.68
Sex										
Boys	125	4651	8.8	6.40	11.95	78	2976	5.6	4.09	7.66
Girls	106	4956	9.4	7.21	12.05	29	1328	2.5	1.67	3.74
Class										
Standard 4	41	2092	15.9	10.96	22.50	17	783	6.0	4.48	7.86
Standard 5	39	1681	13.1	10.13	16.75	17	728	5.7	3.98	8.02
Standard 6	30	1370	10.5	5.56	19.03	15	770	5.9	3.80	9.08
Remove class										
Form 1	40	1501	11.1	7.62	15.78	20	784	5.8	2.39	13.31
Form 2	26	1018	7.6	4.64	12.31	11	429	3.2	1.64	6.21
Form 3	20	657	4.9	3.18	7.56	14	410	3.1	1.43	6.51
Form 4	16	599	4.6	2.64	7.76	10	298	2.3	1.04	4.88
Form 5	19	689	5.1	2.84	8.94	3	102	0.8	0.19	2.92
Ethnicity										
Malay	182	7709	9.4	7.24	12.05	80	3182	3.9	2.84	5.25
Chinese	32	1174	7.0	5.58	8.67	10	351	2.1	1.15	3.75
Indian	15	622	11.9	6.40	21.00	13	576	11.0	6.06	19.18
Bumiputera Sabah	-	-	-	-	-	1	47	9.7	1.52	42.73
Bumiputera Sarawak	1	42	20.6	3.39	65.63	-	-	-	-	-
Others	1	61	6.8	1.19	30.49	3	148	16.5	4.32	46.41
BMI-for age status (BAZ)										
Thinness (<-2sd)	8	343	5.8	2.52	12.65	10	378	6.4	3.19	12.27
Normal ($\geq -2sd - \leq +1sd$)	148	6252	9.6	7.48	12.26	65	2731	4.2	2.95	5.93
Overweight ($> +1sd - \leq +2sd$)	31	1214	7.4	5.01	10.67	13	489	3.0	1.80	4.86
Obese ($> +2sd$)	44	1798	9.9	7.33	13.18	19	705	3.9	2.32	6.40
Height-for - age status (HAZ)										
Stunting (<-2sd)	10	403	6.0	3.29	10.54	6	259	3.8	1.29	10.86
Normal ($\geq -2sd$)	221	9204	9.3	7.39	11.60	101	4045	4.1	3.11	5.33

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristics	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
Melaka	168	6721	6.3	4.98	8.06	317	12926	12.2	9.49	15.56
Locality of School										
Urban	44	1637	5.7	3.97	8.10	75	2886	10.0	5.47	17.70
Rural	124	5084	6.6	4.90	8.80	242	10040	13.0	10.00	16.76
Sex										
Boys	106	3709	7.0	5.45	8.96	205	7675	14.5	11.44	18.18
Girls	62	3012	5.7	3.73	8.59	112	5251	9.9	6.94	13.96
Class										
Standard 4	27	1363	10.4	8.02	13.28	66	3224	24.5	20.25	29.31
Standard 5	36	1525	11.9	7.70	17.88	53	2203	17.2	14.46	20.24
Standard 6	17	866	6.6	5.07	8.67	43	2099	16.1	14.30	18.12
Remove class										
Form 1	20	719	5.3	3.21	8.64	26	980	7.2	5.55	9.34
Form 2	17	601	4.5	2.25	8.84	38	1360	10.2	7.10	14.43
Form 3	18	568	4.3	2.31	7.72	35	1100	8.3	5.81	11.59
Form 4	18	552	4.2	2.57	6.78	35	1163	8.8	5.39	14.21
Form 5	15	526	3.9	2.30	6.50	21	799	5.9	3.30	10.32
Ethnicity										
Malay	128	5186	6.3	4.66	8.48	252	10332	12.6	9.47	16.47
Chinese	32	1243	7.4	5.05	10.65	47	1856	11.0	7.91	15.13
Indian	5	181	3.5	1.02	11.06	14	553	10.6	5.37	19.76
Bumiputera Sabah	1	44	9.0	0.94	50.86	1	45	9.2	1.21	45.65
Bumiputera Sarawak	2	67	33.3	9.00	71.49	-	-	-	-	-
Others	-	-	-	-	-	3	141	15.8	5.71	36.66
BMI-for age status (BAZ)										
Thinness (<-2sd)	11	402	6.8	3.52	12.56	25	982	16.5	10.55	24.92
Normal (≥ - 2sd - ≤+ 1sd)	115	4622	7.1	5.27	9.50	186	7567	11.6	9.28	14.48
Overweight (> +1sd - ≤+ 2sd)	19	705	4.3	2.85	6.35	57	2325	14.1	9.02	21.33
Obese (> + 2sd)	22	953	5.2	3.38	8.03	49	2053	11.3	7.52	16.57
Height-for - age status (HAZ)										
Stunting (<-2sd)	15	634	9.4	5.95	14.51	17	713	10.5	6.68	16.26
Normal (≥-2sd)	153	6086	6.1	4.76	7.88	300	12213	12.3	9.57	15.71

3.7 Food and nutrition labeling among adolescent (Secondary 1 to Secondary 5) in Melaka

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

3.7.1 Introduction

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 were introduced requiring manufacturers to describe the nutritional qualities of a food product factually and informatively.

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

3.7.2 Objective

3.7.2.1 General objective

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

3.7.2.2 Specific objective:

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

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

3.7.3 Variable definitions

There were three classifications used in this study.

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

Food label

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

Front of Pack (FOP) labels

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

Nutrition information panel/ Nutrition facts

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

Nutrition labelling

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

3.7.4 Findings

3.7.4.1 Prevalence of practise reading food labels when buying or receiving food/drink among adolescents in Melaka

The results in **Table 3.7.1** showed 32.3% (95% CI: 28.68, 36.10) of adolescents in Melaka reported as always reading food labels and only 19.9% (95%CI: 16.99, 23.12) reported as never reading food labels when buying or receiving food. The prevalence of never reading food labels was significantly higher among boys [23.7% (95%CI: 19.85, 27.95)] than girls [16.2% (95%CI: 13.14, 19.77)]. By BMI-for-age status (BAZ), among adolescents who were thin, normal, overweight and obese, the highest prevalence of always reading food labels was found among overweight [37.0% (95%CI: 28.61, 46.33)], while sometimes reading food labels showed highest among normal [48.8% (95%CI: 44.15, 53.42)] and never read food label showed highest among thin adolescents [22.0% (95%CI: 15.55, 30.21)]. According to height-for-age status (HAZ), adolescents that were stunted [34.5% (95%CI: 25.31, 45.06)] showed higher prevalence of always reading food labels compared to normal adolescents [32.1% (95%CI: 28.60, 35.87)] and never read food labels were higher among stunted adolescents [26.0% (95%CI: 16.87, 37.83)].

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

Among those who do not read food labels, the findings showed that the main reasons for not reading food labels were that the food labels were not interesting [35.9% (95%CI: 27.10, 45.75)], followed by do not understand food labels [28.1% (95%CI: 23.38, 33.39)] and time constraint [16.5% (95%CI: 11.28, 23.51)]. The results also revealed that 14.2% (95%CI: 10.74, 18.51) of adolescents did not know the importance of food labels; 13.6% (95%CI: 10.70, 17.24) of adolescents think that the size of the printing on food labels was too small and 12.7% (95%CI: 9.11, 17.47) of adolescents were already aware of the food label information (Table 6.2). By locality of school, about half of the urban adolescents [52.3% (95%CI: 44.41, 60.01)] reported that food labels were not interesting was the significant main reason for not reading food labels, while 29.3% (95%CI: 23.89, 35.45) of rural adolescents reported that not understanding food labels was the highest percentage of the reason for not reading food labels. By sex, 35.8% (95%CI: 32.37, 39.31) of boys reported that the food labels were not attractive was the highest percentage of the reason for not reading food labels; while 38.7% (95%CI: 33.16, 44.52) of girls reported that not understanding food labels was the highest percentage of the reason for not reading food labels (**Table 3.7.2**).

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

Among those who read the nutrition fact information, the three most common types of nutritional information being read were fat content [46.6% (95%CI: 40.26, 53.10)], carbohydrate content (including sugar) [41.5% (95%CI: 36.31, 46.86)] and total energy content [37.3% (95%CI: 32.04, 42.94)]. It was followed by protein content [24.0% (95%CI: 19.46, 29.10)], vitamin content [23.9% (95%CI: 20.70, 27.40)], fiber [12.2% (95%CI: 9.40, 15.69)], sodium content [10.2% (95%CI: 8.38, 12.30)] and mineral content [9.1% (95%CI: 6.88, 12.08)] (**Table 3.7.3a** and **Table 3.7.3b**)

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

Based on types of information (expiry date, nutritional claim, nutrition facts, halal logo, food ingredients, storage instruction) read on the food label, most of the adolescents read expiry date [83.0% (95%CI: 78.33, 86.79)], followed by halal logo [[50.5% (95%CI: 39.86, 61.16)], food ingredients [32.8% (95%CI: 27.96, 38.11)] nutrition fact [27.9% (95%CI: 23.17, 33.20)], storage instruction [24.4% (95%CI: 19.67, 29.79)] and nutritional claim [18.1% (95%CI: 14.57, 22.28)] (**Table 3.7.4**).

3.7.4.5 Understanding of nutrition facts among adolescents in Melaka

Overall, more than half of the adolescents [67.2% (95%CI: 59.40, 74.15)] and [62.5% (95%CI: 55.48, 69.05)] of the adolescents had given a correct response to the question assessing interpretation of the energy content and sugar content based on the nutrition facts given. While 52.6 (95%CI: 44.51, 60.59)] correct responses for both energy and sugar (**Table 3.7.5**).

3.7.4.6 Understanding of front of pack labelling among adolescents in Melaka

Overall, less than half of the adolescents [43.9% (95%CI: 37.50, 50.51)] had given the correct response to question assessing interpretation of the energy content based on the front of pack labelling given and [50.5% (95%CI: 45.80, 55.15)] had given correct response to question assessing interpretation of the percentage of energy content based on the front of pack labelling given. However, the results showed a low level of correct responses [29.9% (95%CI: 25.08, 35.27)] to questions assessing interpretations of both the energy content and the percentage of energy content based on the front of pack labelling given (**Table 3.7.6**).

3.7.4.7 Understanding of the mostly and the least used ingredients based on the food ingredient list among adolescents in Melaka

Overall, slightly more than half of the adolescents [67.2% (95%CI: 59.40, 74.15)] had given a correct response to the question assessing interpretation of the mostly used ingredient in the food based on the list of ingredients given. Girls [59.3% (95%CI: 52.65, 65.70)] reported a higher prevalence of interpreting correctly as compared to the boys [56.5% (95%CI: 453.32, 59.63)]. While, 62.5% (95%CI: 55.48, 69.05) of adolescents had given correct response to the question assessing interpretation of the least used ingredient in the food based on the list of ingredients given. The results showed a correct response [52.6% (95%CI: 44.51, 60.59)] to questions assessing interpretations of both the mostly and the least used ingredients based on the ingredient list given (**Table 3.7.7**).

3.7.5 Discussion/Conclusion

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

References

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

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
MELAKA	598	21702	32.3	28.68	36.10	890	32170	47.8	43.23	52.50
Locality of School										
Urban	211	7281	31.7	24.88	39.31	326	10903	47.4	39.23	55.73
Rural	387	14422	32.6	28.56	36.91	564	21267	48.1	42.54	53.66
Sex										
Boys	332	10548	31.8	27.27	36.68	482	14780	44.5	40.87	48.29
Girls	266	11155	32.8	28.05	37.83	408	17390	51.1	44.93	57.16
Class										
Form 1	145	5412	39.7	35.01	44.69	137	5249	38.6	31.77	45.81
Form 2	115	4414	33.0	27.18	39.41	155	6023	45.0	37.75	52.55
Form 3	119	3991	29.7	21.90	38.82	193	6549	48.7	38.96	58.51
Form 4	112	3812	28.8	21.57	37.25	212	7320	55.3	48.60	61.72
Form 5	107	4073	30.1	25.06	35.61	193	7029	51.9	44.15	59.54
Ethnicity										
Malay	439	16259	33.5	30.23	36.85	640	23615	48.6	43.50	53.73
Chinese	95	3164	22.5	18.58	26.97	201	6845	48.7	44.41	52.96
Indian	53	1878	52.5	39.23	65.34	37	1278	35.7	26.32	46.32
Bumiputera Sabah	1	34	12.3	0.99	66.09	3	130	47.3	18.50	78.05
Bumiputera Sarawak	2	75	37.3	4.06	89.29	3	99	49.1	12.29	86.86
Others	8	292	55.9	28.85	79.78	6	202	38.7	19.11	62.72
BMI-for-age status (BAZ)										
Thinness (<-2sd)	32	1110	30.8	20.41	43.51	49	1704	47.2	35.01	59.76
Normal (≥-2sd - ≤+1sd)	359	13090	31.0	27.07	35.27	568	20582	48.8	44.15	53.42
Overweight (>+1sd - ≤+2sd)	115	4201	37.0	28.61	46.33	139	5053	44.5	36.05	53.36
Obese (>+2sd)	91	3271	32.8	26.34	39.88	133	4792	48.0	39.81	56.28
Height-for-age status (HAZ)										
Stunting (<-2sd)	39	1471	34.5	25.31	45.06	44	1682	39.5	26.66	53.93
Normal (≥-2sd)	559	20232	32.1	28.60	35.87	846	30489	48.4	43.93	52.92

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

Characteristic	Never				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
MELAKA	383	13363	19.9	16.99	23.12
Locality of School					
Urban	150	4813	20.9	14.90	28.58
Rural	233	8550	19.3	16.54	22.46
Sex					
Boys	253	7852	23.7	19.85	27.95
Girls	130	5512	16.2	13.14	19.77
Class					
Form 1	82	2955	21.7	16.07	28.63
Form 2	77	2935	22.0	17.20	27.57
Form 3	94	2913	21.7	15.59	29.26
Form 4	63	2116	16.0	11.72	21.39
Form 5	67	2444	18.0	14.92	21.65
Ethnicity					
Malay	243	8717	17.9	14.67	21.76
Chinese	122	4054	28.8	25.71	32.16
Indian	13	424	11.8	6.66	20.20
Bumiputera Sabah	3	111	40.4	17.05	69.15
Bumiputera Sarawak	1	28	13.7	1.95	55.71
Others	1	29	5.5	1.25	20.96
BMI-for-age status (BAZ)					
Thinness (<-2sd)	24	795	22.0	15.55	30.21
Normal (\geq -2sd - \leq +1sd)	243	8525	20.2	16.61	24.35
Overweight ($>$ +1sd - \leq +2sd)	59	2090	18.4	15.06	22.34
Obese ($>$ +2sd)	56	1923	19.3	15.09	24.25
Height-for-age status (HAZ)					
Stunting (<-2sd)	31	1108	26.0	16.87	37.83
Normal (\geq -2sd)	352	12255	19.5	16.69	22.57

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

Characteristic	Size of the print too small					Do not understand				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
MELAKA	53	1823	13.6	10.70	17.24	101	3757	28.1	23.38	33.39
Locality of School										
Urban	21	661	13.7	9.29	19.85	37	1249	25.9	18.08	35.74
Rural	32	1162	13.6	9.94	18.29	64	2508	29.3	23.89	35.45
Sex										
Boys	38	1213	15.5	10.71	21.78	51	1625	20.7	16.25	25.97
Girls	15	610	11.1	7.72	15.61	50	2132	38.7	33.16	44.52
Class										
Form 1	16	598	20.2	12.49	31.06	23	832	28.2	18.35	40.59
Form 2	13	470	16.0	8.74	27.53	28	1131	38.5	23.60	56.00
Form 3	10	310	10.6	4.52	23.06	21	710	24.4	13.18	40.66
Form 4	10	321	15.2	8.01	26.89	14	512	24.2	13.94	38.66
Form 5	4	124	5.1	1.15	19.62	15	571	23.4	16.41	32.14
Ethnicity										
Malay	37	1304	15.0	11.48	19.27	64	2414	27.7	21.73	34.56
Chinese	13	439	10.8	7.63	15.15	35	1274	31.4	21.28	43.70
Indian	3	80	18.8	4.76	51.61	2	70	16.5	3.33	53.03
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	68	8.5	1.90	30.86	6	213	26.9	10.03	54.73
Normal (≥-2sd - ≤+1sd)	31	1069	12.5	7.87	19.40	65	2467	28.9	22.24	36.70
Overweight (>+1sd - ≤+2sd)	6	208	10.0	3.46	25.47	14	519	24.8	18.96	31.82
Obese (>+2sd)	14	478	24.9	14.97	38.32	16	557	29.0	20.13	39.78
Height-for-age status (HAZ)										
Stunting (<-2sd)	4	138	12.4	4.46	30.17	9	348	31.5	13.88	56.65
Normal (≥-2sd)	49	1685	13.8	10.67	17.55	92	3409	27.8	23.40	32.70

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	141	4797	35.9	27.10	45.75	54	1896	14.2	10.74	18.51
Locality of School										
Urban	78	2516	52.3	44.41	60.01	27	833	17.3	11.48	25.25
Rural	63	2281	26.7	20.15	34.41	27	1063	12.4	8.80	17.28
Sex										
Boys	97	2930	37.3	27.01	48.94	36	1085	13.8	8.62	21.42
Girls	44	1866	33.9	22.66	47.22	18	811	14.7	9.44	22.24
Class										
Form 1	29	1037	35.1	18.88	55.70	7	235	7.9	4.32	14.16
Form 2	19	725	24.7	17.24	34.07	10	369	12.6	7.94	19.36
Form 3	38	1149	39.4	24.47	56.71	12	351	12.1	7.44	18.95
Form 4	25	795	37.6	22.29	55.76	11	396	18.7	11.85	28.32
Form 5	30	1091	44.6	29.95	60.29	14	545	22.3	11.01	39.94
Ethnicity										
Malay	72	2519	28.9	20.63	38.85	28	1026	11.8	7.78	17.40
Chinese	63	2065	51.0	37.09	64.67	22	737	18.2	11.78	26.98
Indian	3	103	24.3	7.23	57.02	3	104	24.5	9.11	51.15
Bumiputera Sabah	2	81	73.2	14.75	97.74	1	30	26.8	2.26	85.25
Bumiputera Sarawak	1	28	100.0	100.00	100.00	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-
BMI-for-age status (BAZ)										
Thinness (<-2sd)	13	423	53.3	29.74	75.43	3	94	11.8	3.24	34.74
Normal (≥-2sd - ≤+1sd)	89	3037	35.6	25.48	47.24	30	1095	12.8	9.32	17.44
Overweight (>+1sd - ≤+2sd)	22	766	36.6	24.41	50.86	13	448	21.4	11.87	35.56
Obese (>+2sd)	16	541	28.1	13.65	49.18	7	230	12.0	6.47	21.06
Height-for-age status (HAZ)										
Stunting (<-2sd)	10	352	31.8	15.99	53.23	1	57	5.1	0.59	32.77
Normal (≥-2sd)	131	4445	36.3	27.26	46.35	53	1840	15.0	11.24	19.76

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	65	2206	16.5	11.28	23.51	49	1699	12.7	9.11	17.47
Locality of School										
Urban	17	547	11.4	6.44	19.26	12	388	8.1	4.95	12.83
Rural	48	1659	19.4	12.98	27.98	37	1311	15.3	10.77	21.39
Sex										
Boys	53	1696	21.6	13.29	33.12	28	851	10.8	8.07	14.39
Girls	12	510	9.3	5.41	15.37	21	848	15.4	8.65	25.91
Class										
Form 1	12	403	13.6	5.08	31.78	9	336	11.4	4.83	24.52
Form 2	13	480	16.4	8.78	28.45	9	339	11.5	5.73	21.90
Form 3	14	469	16.1	7.76	30.46	13	405	13.9	8.20	22.57
Form 4	8	249	11.7	4.18	28.89	10	338	16.0	7.33	31.42
Form 5	18	605	24.7	13.76	40.38	8	281	11.5	6.41	19.77
Ethnicity										
Malay	56	1937	22.2	16.37	29.41	34	1170	13.4	9.15	19.26
Chinese	7	207	5.1	2.73	9.32	11	399	9.8	5.97	15.78
Indian	1	33	7.9	0.75	49.18	4	131	30.8	13.59	55.77
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	29	100.0	100.00	100.00	-	-	-	-	-
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	87	10.9	3.15	31.65	4	135	17.0	6.94	36.03
Normal (≥-2sd - ≤+1sd)	39	1325	15.5	10.44	22.51	33	1118	13.1	8.49	19.72
Overweight (>+1sd - ≤+2sd)	8	288	13.8	7.07	25.19	7	277	13.3	5.49	28.66
Obese (>+2sd)	15	506	26.3	15.46	41.02	5	169	8.8	3.36	20.96
Height-for-age status (HAZ)										
Stunting (<-2sd)	7	223	20.1	7.77	42.94	6	182	16.4	6.95	34.11
Normal (≥-2sd)	58	1983	16.2	11.09	23.00	43	1517	12.4	8.77	17.19

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
MELAKA	565	20110	37.3	32.04	42.94	613	22352	41.5	36.31	46.86
Locality of School										
Urban	233	7880	43.3	37.91	48.92	255	8690	47.8	37.23	58.55
Rural	332	12230	34.3	27.99	41.15	358	13661	38.3	34.55	42.15
Sex										
Boys	329	10182	40.2	35.17	45.45	317	9806	38.7	33.02	44.74
Girls	236	9928	34.8	27.71	42.59	296	12546	44.0	37.83	50.26
Class										
Form 1	84	3153	29.6	22.94	37.19	100	3768	35.3	27.36	44.24
Form 2	115	4448	42.6	34.09	51.61	90	3478	33.3	26.82	40.53
Form 3	128	4249	40.3	33.96	47.00	128	4462	42.3	33.70	51.47
Form 4	124	4122	37.0	29.98	44.68	151	5315	47.7	38.79	56.84
Form 5	114	4139	37.3	29.48	45.79	144	5329	48.0	37.55	58.62
Ethnicity										
Malay	405	14553	36.5	30.27	43.21	444	16623	41.7	35.55	48.10
Chinese	117	4010	40.1	30.89	49.99	126	4214	42.1	35.38	49.12
Indian	34	1229	38.9	25.99	53.64	28	975	30.9	20.58	43.50
Bumiputera Sabah	2	75	45.7	16.40	78.37	2	83	50.6	18.98	81.80
Bumiputera Sarawak	4	141	80.8	22.96	98.35	3	94	54.1	20.32	84.47
Others	3	102	20.7	5.10	55.75	10	363	73.4	41.99	91.36
BMI-for-age status (BAZ)										
Thinness (<-2sd)	29	1005	35.7	24.09	49.31	27	950	33.8	21.46	48.72
Normal (≥-2sd - ≤+1sd)	371	13279	39.4	32.54	46.79	396	14527	43.1	37.54	48.92
Overweight (>+1sd - ≤+2sd)	92	3228	34.9	27.76	42.74	103	3769	40.7	32.89	49.07
Obese (>+2sd)	72	2568	31.9	25.32	39.19	86	3075	38.1	29.08	48.10
Height-for-age status (HAZ)										
Stunting (<-2sd)	28	1040	33.0	21.05	47.64	40	1548	49.1	39.52	58.75
Normal (≥-2sd)	537	19070	37.6	32.43	43.06	573	20804	41.0	35.52	46.75

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
MELAKA	678	25117	46.6	40.26	53.10	367	12903	24.0	19.46	29.10
Locality of School										
Urban	270	9314	51.2	40.73	61.60	173	5748	31.6	23.55	40.96
Rural	408	15803	44.3	37.05	51.76	194	7155	20.0	17.07	23.41
Sex										
Boys	321	9878	39.0	33.19	45.14	235	7269	28.7	22.79	35.44
Girls	357	15238	53.4	44.52	62.04	132	5634	19.7	15.67	24.55
Class										
Form 1	123	4650	43.6	36.46	51.03	83	3108	29.2	20.01	40.37
Form 2	98	3891	37.3	28.44	47.06	56	2122	20.3	15.05	26.87
Form 3	129	4438	42.1	32.70	52.13	66	2098	19.9	12.95	29.35
Form 4	161	5799	52.1	36.96	66.85	75	2485	22.3	18.54	26.63
Form 5	167	6339	57.1	48.96	64.87	87	3090	27.8	22.86	33.41
Ethnicity										
Malay	486	18477	46.3	38.87	53.97	261	9457	23.7	18.32	30.11
Chinese	147	5048	50.4	39.05	61.77	82	2644	26.4	20.44	33.42
Indian	35	1227	38.9	30.27	48.20	16	521	16.5	9.06	28.19
Bumiputera Sabah	2	83	50.6	18.98	81.80	1	41	25.2	5.83	64.64
Bumiputera Sarawak	2	61	34.9	10.88	70.21	2	61	34.9	10.88	70.21
Others	6	220	44.6	24.88	66.13	5	178	36.1	9.72	74.79
BMI-for-age status (BAZ)										
Thinness (<-2sd)	26	955	33.9	20.95	49.84	21	722	25.6	16.44	37.67
Normal (≥-2sd - ≤+1sd)	389	14481	43.0	37.08	49.14	236	8239	24.5	19.92	29.68
Overweight (>+1sd - ≤+2sd)	130	4874	52.7	41.46	63.62	61	2209	23.9	18.06	30.84
Obese (>+2sd)	131	4738	58.8	48.70	68.14	48	1703	21.1	13.02	32.39
Height-for-age status (HAZ)										
Stunting (<-2sd)	31	1242	39.4	27.80	52.30	25	975	30.9	17.07	49.35
Normal (≥-2sd)	647	23875	47.1	40.73	53.51	342	11928	23.5	19.08	28.63

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 Lower Upper		Unweighted Count	Estimated Population	Prevalence (%)	95% CI Lower Upper	
MELAKA	152	5484	10.2	8.38	12.30	356	12871	23.9	20.70	27.40
Locality of School										
Urban	75	2543	14.0	12.13	16.07	155	5249	28.9	24.29	33.92
Rural	77	2941	8.2	6.93	9.78	201	7621	21.4	18.34	24.72
Sex										
Boys	78	2404	9.5	7.10	12.59	206	6446	25.4	20.94	30.56
Girls	74	3079	10.8	8.89	13.03	150	6425	22.5	19.33	26.04
Class										
Form 1	37	1384	13.0	8.25	19.86	88	3333	31.3	24.28	39.21
Form 2	28	1063	10.2	7.04	14.52	59	2313	22.2	17.34	27.88
Form 3	25	805	7.6	4.33	13.14	66	2190	20.8	14.74	28.48
Form 4	38	1335	12.0	8.17	17.26	74	2508	22.5	16.99	29.24
Form 5	24	896	8.1	5.07	12.62	69	2527	22.8	18.44	27.74
Ethnicity										
Malay	95	3596	9.0	7.38	10.98	260	9595	24.1	20.74	27.73
Chinese	44	1402	14.0	10.68	18.16	78	2582	25.8	20.34	32.12
Indian	11	410	13.0	6.23	25.10	14	541	17.1	10.47	26.76
Bumiputera Sabah	1	42	25.5	1.97	85.35	2	89	54.0	6.96	94.83
Bumiputera Sarawak	1	34	19.3	3.71	59.89	1	34	19.3	3.71	59.89
Others						1	32	6.4	0.64	41.93
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	392	13.9	7.76	23.72	24	871	31.0	20.94	43.16
Normal (≥-2sd - ≤+1sd)	94	3430	10.2	7.88	13.08	225	8079	24.0	20.73	27.59
Overweight (>+1sd - ≤+2sd)	22	791	8.6	5.95	12.14	58	2165	23.4	19.14	28.27
Obese (>+2sd)	25	870	10.8	7.77	14.81	48	1725	21.4	15.35	29.01
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	448	14.2	9.32	21.10	16	609	19.3	11.75	30.09
Normal (≥-2sd)	141	5035	9.9	8.02	12.23	340	12262	24.2	21.03	27.63

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
MELAKA	138	4929	9.1	6.88	12.08	181	6572	12.2	9.40	15.69
Locality of School										
Urban	71	2330	12.8	8.89	18.13	96	3274	18.0	15.32	21.04
Rural	67	2598	7.3	5.32	9.89	85	3298	9.2	6.98	12.15
Sex										
Boys	81	2476	9.8	6.25	14.96	100	3097	12.2	8.80	16.73
Girls	57	2453	8.6	6.37	11.50	81	3475	12.2	9.05	16.19
Class										
Form 1	32	1200	11.3	6.82	18.04	35	1324	12.4	8.15	18.47
Form 2	20	773	7.4	5.37	10.13	35	1311	12.6	8.49	18.18
Form 3	24	740	7.0	3.09	15.16	38	1267	12.0	7.32	19.10
Form 4	32	1089	9.8	6.35	14.77	35	1219	11.0	6.98	16.78
Form 5	30	1126	10.1	7.31	13.92	38	1452	13.1	8.32	19.97
Ethnicity										
Malay	91	3378	8.5	6.10	11.64	129	4810	12.1	9.07	15.87
Chinese	41	1319	13.2	9.87	17.37	41	1359	13.6	10.04	18.10
Indian	5	195	6.2	2.25	15.85	9	333	10.5	3.44	28.00
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	1	34	19.3	3.71	59.89
Others	1	37	7.5	0.82	44.32	1	37	7.5	0.82	44.32
BMI-for-age status (BAZ)										
Thinness (<-2sd)	8	297	10.5	5.12	20.47	11	421	14.9	7.66	27.12
Normal (≥-2sd - ≤+1sd)	86	3045	9.0	6.53	12.40	111	4058	12.1	9.58	15.06
Overweight (>+1sd - ≤+2sd)	26	923	10.0	6.84	14.32	30	1123	12.1	8.11	17.76
Obese (>+2sd)	17	634	7.9	4.94	12.27	28	941	11.7	7.89	16.93
Height-for-age status (HAZ)										
Stunting (<-2sd)	8	317	10.0	5.26	18.33	10	420	13.3	6.02	26.95
Normal (≥-2sd)	130	4612	9.1	6.82	12.02	171	6152	12.1	9.49	15.38

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
MELAKA	1232	44701	83.0	78.33	86.79	273	9753	18.1	14.57	22.28
Locality of School										
Urban	470	15904	87.5	82.72	91.05	131	4380	24.1	20.84	27.66
Rural	762	28797	80.7	74.79	85.47	142	5373	15.1	11.38	19.66
Sex										
Boys	663	20593	81.3	74.79	86.44	147	4456	17.6	13.18	23.08
Girls	569	24107	84.5	79.58	88.34	126	5297	18.6	14.96	22.78
Class										
Form 1	231	8721	81.8	73.52	87.92	48	1838	17.2	11.12	25.75
Form 2	222	8583	82.2	71.23	89.64	46	1754	16.8	12.18	22.74
Form 3	252	8548	81.1	71.10	88.22	52	1755	16.7	11.91	22.80
Form 4	272	9377	84.2	76.58	89.72	69	2366	21.3	16.28	27.25
Form 5	255	9472	85.3	78.75	90.11	58	2040	18.4	11.28	28.48
Ethnicity										
Malay	873	32480	81.5	77.07	85.17	170	6240	15.6	12.19	19.87
Chinese	275	9271	92.6	87.60	95.71	85	2872	28.7	22.69	35.54
Indian	66	2295	72.7	62.36	81.05	16	580	18.4	13.12	25.09
Bumiputera Sabah	4	164	100.0	100.00	100.00					
Bumiputera Sarawak	3	100	57.0	22.20	86.03	1	34	19.3	3.71	59.89
Others	11	392	79.2	50.75	93.38	1	28	5.6	1.17	22.86
BMI-for-age status (BAZ)										
Thinness (<-2sd)	63	2198	78.1	59.53	89.63	19	727	25.8	17.92	35.74
Normal (≥-2sd - ≤+1sd)	776	28275	84.0	79.55	87.59	165	5886	17.5	13.94	21.69
Overweight (>+1sd - ≤+2sd)	209	7597	82.1	74.39	87.85	46	1640	17.7	11.64	26.03
Obese (>+2sd)	182	6561	81.4	73.04	87.57	42	1470	18.2	13.12	24.75
Height-for-age status (HAZ)										
Stunting (<-2sd)	66	2530	80.3	66.22	89.40	14	536	17.0	11.42	24.60
Normal (≥-2sd)	1166	42171	83.1	78.43	87.00	259	9216	18.2	14.58	22.42

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
MELAKA	419	15034	27.9	23.17	33.20	737	27222	50.5	39.86	61.16
Locality of School										
Urban	191	6423	35.3	28.27	43.08	242	8493	46.7	22.30	72.79
Rural	228	8611	24.1	19.72	29.17	495	18730	52.5	44.42	60.41
Sex										
Boys	238	7328	28.9	22.85	35.88	385	12122	47.9	32.97	63.14
Girls	181	7706	27.0	21.60	33.17	352	15100	52.9	42.21	63.33
Class										
Form 1	72	2726	25.6	16.97	36.61	133	5061	47.5	34.06	61.25
Form 2	60	2284	21.9	16.22	28.83	130	5174	49.6	36.15	63.07
Form 3	87	2968	28.2	20.60	37.19	130	4471	42.4	31.51	54.13
Form 4	96	3275	29.4	20.41	40.40	188	6658	59.8	47.96	70.61
Form 5	104	3781	34.1	27.17	41.69	156	5859	52.8	36.25	68.70
Ethnicity										
Malay	275	10098	25.3	20.08	31.39	694	25781	64.7	57.46	71.25
Chinese	107	3653	36.5	29.73	43.83	23	767	7.7	4.92	11.74
Indian	27	936	29.7	17.69	45.29	17	553	17.5	9.61	29.75
Bumiputera Sabah	1	41	25.2	5.83	64.64	2	83	50.6	18.98	81.80
Bumiputera Sarawak	2	67	38.5	12.15	73.94	-	-	-	-	-
Others	7	238	48.2	18.07	79.72	1	39	7.9	1.61	30.73
BMI-for-age status (BAZ)										
Thinness (<-2sd)	19	711	25.3	15.22	38.89	26	901	32.0	22.57	43.18
Normal (≥-2sd - ≤+1sd)	259	9296	27.6	22.46	33.43	443	16403	48.7	37.76	59.80
Overweight (>+1sd - ≤+2sd)	77	2818	30.5	24.21	37.50	139	5281	57.1	43.13	69.97
Obese (>+2sd)	63	2179	27.0	19.14	36.68	128	4608	57.1	46.37	67.28
Height-for-age status (HAZ)										
Stunting (<-2sd)	24	926	29.4	21.92	38.14	45	1727	54.8	44.99	64.22
Normal (≥-2sd)	395	14108	27.8	22.89	33.34	692	25495	50.3	39.13	61.38

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
MELAKA	481	17690	32.8	27.96	38.11	359	13131	24.4	19.67	29.79
Locality of School										
Urban	209	7193	39.6	31.91	47.75	170	5702	31.4	23.38	40.61
Rural	272	10497	29.4	24.81	34.48	189	7429	20.8	16.59	25.79
Sex										
Boys	244	7523	29.7	22.65	37.88	187	5765	22.8	15.78	31.67
Girls	237	10167	35.6	29.40	42.36	172	7367	25.8	21.72	30.37
Class										
Form 1	99	3741	35.1	24.96	46.75	74	2802	26.3	17.28	37.82
Form 2	67	2625	25.2	17.80	34.27	58	2251	21.6	16.27	28.02
Form 3	90	3131	29.7	22.15	38.57	68	2299	21.8	14.25	31.91
Form 4	112	3976	35.7	26.22	46.49	72	2486	22.3	15.59	30.91
Form 5	113	4218	38.0	29.02	47.87	87	3293	29.7	19.86	41.78
Ethnicity										
Malay	352	13305	33.4	28.11	39.07	227	8647	21.7	17.19	26.97
Chinese	98	3275	32.7	25.35	41.06	101	3424	34.2	25.49	44.14
Indian	24	852	27.0	14.21	45.17	19	635	20.1	10.58	34.88
Bumiputera Sabah	1	42	25.5	1.97	85.35	1	42	25.5	1.97	85.35
Bumiputera Sarawak	-	-	-	-	-	3	103	58.7	11.80	93.81
Others	6	217	43.8	19.10	72.03	8	281	56.9	35.86	75.67
BMI-for-age status (BAZ)										
Thinness (<-2sd)	20	704	25.0	14.64	39.34	16	606	21.5	10.74	38.51
Normal (≥-2sd - ≤+1sd)	297	11012	32.7	27.59	38.27	235	8598	25.5	20.62	31.16
Overweight (>+1sd - ≤+2sd)	84	3085	33.3	27.33	39.94	60	2179	23.5	18.41	29.58
Obese (>+2sd)	79	2859	35.5	26.81	45.17	47	1718	21.3	14.77	29.75
Height-for-age status (HAZ)										
Stunting (<-2sd)	25	1002	31.8	22.18	43.27	13	511	16.2	9.91	25.35
Normal (≥-2sd)	456	16688	32.9	27.55	38.74	346	12621	24.9	20.11	30.36

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	996	35379	52.6	44.51	60.59	1261.00	45180.666	67	59.4	74.15
Locality of School										
Urban	407	13624	59.2	48.24	69.38	496.00	16717.353	73	60.4	82.32
Rural	589	21755	49.2	39.15	59.27	765.00	28463.313	64	54.9	72.79
Sex										
Boys	592	18299	55.2	46.87	63.15	722.00	22375.151	67	59.5	74.47
Girls	404	17079	50.2	40.59	59.70	539.00	22805.515	67	57.4	75.31
Class										
Form 1	177	6521	47.9	37.18	58.80	233.00	8677.8017	64	53.1	73.13
Form 2	150	5770	43.2	31.33	55.81	199.00	7660.3278	57	45.1	68.67
Form 3	217	7230	53.7	41.58	65.48	285.00	9522.0982	71	58.9	80.35
Form 4	216	7467	56.4	45.49	66.66	264.00	9146.8562	69	59.2	77.38
Form 5	236	8390	61.9	48.49	73.77	280.00	10173.582	75	64.3	83.45
Ethnicity										
Malay	680	24756	50.9	41.82	60.01	883.00	32395.825	67	57.7	74.59
Chinese	260	8713	62.0	52.94	70.22	303.00	10201.424	73	63.8	79.87
Indian	39	1329	37.1	26.29	49.38	54.00	1847.951	52	36.0	66.86
Bumiputera Sabah	4	138	50.3	25.74	74.70	5.00	180.26054	65	29.5	89.55
Bumiputera Sarawak	4	127	62.9	23.01	90.57	6.00	202.3859	100	100.0	100.00
Others	9	316	60.4	41.61	76.52	10.00	352.81997	67	40.8	86.21
BMI-for-age status (BAZ)										
Thinness (<-2sd)	54	1805	50.0	35.76	64.26	68.00	2280.8108	63	45.0	78.29
Normal (≥-2sd - ≤+1sd)	611	21808	51.7	44.34	58.95	783.00	28188.924	67	60.1	72.89
Overweight (>+1sd - ≤+2sd)	181	6534	57.6	48.21	66.47	227.00	8242.6962	73	62.5	80.91
Obese (>+2sd)	149	5202	52.1	38.90	64.99	182.00	6438.21	64	52.3	74.98
Height-for-age status (HAZ)										
Stunting (<-2sd)	56	2104	49.4	37.34	61.49	70.00	2647.5702	62	49.0	73.71
Normal (≥-2sd)	940	33275	52.8	44.83	60.70	1191.00	42533.095	68	60.0	74.25

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
MELAKA	1179	42028	62.5	55.48	69.05
Locality of School					
Urban	464	13624	67.6	56.43	77.03
Rural	715	21755	59.9	51.37	67.82
Sex					
Boys	702	18299	65.7	58.28	72.41
Girls	477	17079	59.4	51.33	67.00
Class					
Form 1	214	6521	57.9	47.20	67.93
Form 2	197	5770	56.8	46.06	66.87
Form 3	250	7230	61.9	49.80	72.76
Form 4	253	7467	65.9	56.18	74.47
Form 5	265	8390	70.0	59.41	78.85
Ethnicity					
Malay	820	24756	61.5	53.75	68.69
Chinese	288	8713	69.0	60.07	76.63
Indian	52	1329	49.8	40.92	58.70
Bumiputera Sabah	5	138	67.4	20.89	94.20
Bumiputera Sarawak	4	127	62.9	23.01	90.57
Others	10	316	67.9	45.57	84.24
BMI-for-age status (BAZ)					
Thinness (<-2sd)	64	1805	60.5	45.74	73.53
Normal (≥-2sd - ≤+1sd)	726	21808	61.7	55.32	67.62
Overweight (>+1sd - ≤+2sd)	208	6534	66.1	57.08	74.06
Obese (>+2sd)	180	5202	63.1	51.46	73.36
Height-for-age status (HAZ)					
Stunting (<-2sd)	69	2104	60.7	52.38	68.50
Normal (≥-2sd)	1110	33275	62.6	55.52	69.23

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
MELAKA	572	20123	29.9	25.08	35.27	840	29516	44	37.50	50.51
Locality of School										
Urban	237	7884	34.3	27.65	41.60	354	11767	51	46.04	56.27
Rural	335	12239	27.7	21.83	34.37	486	17749	40	32.10	48.71
Sex										
Boys	348	10700	32.2	26.40	38.71	509	15674	47	41.13	53.43
Girls	224	9423	27.7	21.83	34.39	331	13842	41	31.71	50.25
Class										
Form 1	98	3613	26.5	21.57	32.18	149	5497	40	32.99	48.21
Form 2	81	3061	22.9	16.21	31.29	124	4729	35	27.53	44.08
Form 3	116	3840	28.5	20.74	37.88	183	6008	45	34.84	54.92
Form 4	137	4748	35.8	28.19	44.28	191	6488	49	39.03	59.00
Form 5	140	4862	35.9	29.51	42.81	193	6794	50	39.43	60.86
Ethnicity										
Malay	388	14072	29.0	22.75	36.07	547	19760	41	32.95	48.87
Chinese	154	5037	35.8	32.56	39.21	235	7737	55	50.39	59.56
Indian	23	769	21.5	14.48	30.63	47	1641	46	40.46	51.30
Bumiputera Sabah	1	34	12.2	2.58	42.25	1	34	12	2.58	42.25
Bumiputera Sarawak	3	100	49.2	26.28	72.48	3	100	49	26.28	72.48
Others	3	112	21.4	4.67	60.14	7	244	47	10.81	86.40
BMI-for-age status (BAZ)										
Thinness (<-2sd)	35	1197	33.2	20.35	49.11	49	1651	46	33.67	58.37
Normal (≥-2sd - ≤+1sd)	349	12300	29.1	24.01	34.89	526	18432	44	37.16	50.42
Overweight (>+1sd - ≤+2sd)	110	3945	34.8	28.72	41.35	151	5451	48	40.70	55.48
Obese (>+2sd)	77	2652	26.6	19.27	35.38	113	3952	40	30.49	49.43
Height-for-age status (HAZ)										
Stunting (<-2sd)	28	1052	24.7	15.14	37.60	39	1462	34	23.17	47.54
Normal (≥-2sd)	544	19072	30.3	25.41	35.65	801	28053	45	38.25	51.02

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

Characteristic	Know only the percentage of contribution by serving of foods				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
MELAKA	952	33941	50.5	45.80	55.15
Locality of School					
Urban	354	11865	51.6	43.43	59.67
Rural	598	22075	49.9	44.25	55.56
Sex					
Boys	569	17681	53.3	47.08	59.39
Girls	383	16260	47.7	42.04	53.51
Class					
Form 1	188	6951	51.1	44.78	57.29
Form 2	151	5724	42.8	35.39	50.56
Form 3	199	6658	49.5	40.94	58.07
Form 4	205	7157	54.0	46.18	61.67
Form 5	209	7451	55.0	48.92	60.94
Ethnicity					
Malay	670	24464	50.3	44.71	55.97
Chinese	212	7073	50.3	42.73	57.85
Indian	52	1762	49.2	35.20	63.32
Bumiputera Sabah	5	186	67.7	42.78	85.43
Bumiputera Sarawak	6	202	100.0	100.00	100.00
Others	7	254	48.5	28.98	68.56
BMI-for-age status (BAZ)					
Thinness (<-2sd)	52	1776	49.2	33.34	65.23
Normal (≥-2sd - ≤+1sd)	584	20882	49.5	45.06	53.93
Overweight (>+1sd - ≤+2sd)	179	6450	56.9	48.24	65.08
Obese (>+2sd)	136	4802	48.1	40.15	56.12
Height-for-age status (HAZ)					
Stunting (<-2sd)	60	2232	52.4	40.03	64.47
Normal (≥-2sd)	892	31709	50.4	45.72	54.97

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
MELAKA	996	35379	52.6	44.51	60.59	1261	45181	67.2	59.40	74.15
Locality of School										
Urban	37	1296	7.1	3.55	13.81	317	10850	59.7	56.35	62.91
Rural	69	2536	7.1	5.83	8.64	545	20400	57.2	50.62	63.46
Sex										
Boys	58	1823	7.2	4.88	10.50	461	14311	56.5	53.32	59.63
Girls	48	2009	7.0	5.29	9.30	401	16939	59.3	52.65	65.70
Class										
Form 1	24	931	8.7	5.98	12.59	158	5950	55.8	49.44	61.99
Form 2	26	955	9.2	5.29	15.38	142	5402	51.8	41.32	62.06
Form 3	13	460	4.4	2.04	9.09	176	6067	57.6	49.00	65.69
Form 4	22	731	6.6	4.26	10.00	191	6561	58.9	53.28	64.36
Form 5	21	756	6.8	4.25	10.74	195	7270	65.5	60.08	70.51
Ethnicity										
Malay	66	2439	6.1	4.65	8.01	601	22226	55.7	50.57	60.79
Chinese	29	1029	10.3	7.17	14.53	192	6600	65.9	60.44	71.04
Indian	10	326	10.3	5.50	18.53	56	1969	62.4	47.64	75.11
Bumiputera Sabah	-	-	-	-	-	3	123	74.8	35.36	94.17
Bumiputera Sarawak	1	39	22.1	1.95	80.21	3	99	56.8	8.94	94.63
Others	-	-	-	-	-	7	233	47.2	20.20	75.88
BMI-for-age status (BAZ)										
Thinness (<-2sd)	7	256	9.1	5.38	15.00	47	1631	58.0	43.51	71.17
Normal (≥-2sd - ≤+1sd)	68	2456	7.3	4.94	10.63	540	19637	58.3	53.57	62.92
Overweight (>+1sd - ≤+2sd)	16	569	6.1	3.93	9.50	149	5398	58.3	50.72	65.56
Obese (>+2sd)	15	551	6.8	4.31	10.69	126	4582	56.8	49.92	63.49
Height-for-age status (HAZ)										
Stunting (<-2sd)	3	131	4.1	1.00	15.62	40	1563	49.6	35.80	63.44
Normal (≥-2sd)	103	3702	7.3	5.63	9.41	822	29687	58.5	54.16	62.77

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

Characteristic	Know only the lowest ingredient				
	Unweighted	Estimated	Prevalence	95% CI	
	Count	Population	(%)	Lower	Upper
MELAKA	1179	42028	62.5	55.48	69.05
Locality of School					
Urban	74	2535	13.9	9.40	20.19
Rural	128	4703	13.2	10.73	16.08
Sex					
Boys	115	3569	14.1	10.83	18.14
Girls	87	3669	12.9	10.25	15.99
Class					
Form 1	44	1694	15.9	11.26	21.95
Form 2	43	1626	15.6	11.21	21.24
Form 3	34	1139	10.8	7.05	16.22
Form 4	44	1435	12.9	8.55	18.97
Form 5	37	1343	12.1	8.08	17.72
Ethnicity					
Malay	141	5155	12.9	11.25	14.82
Chinese	42	1436	14.3	9.42	21.24
Indian	15	495	15.7	8.96	26.04
Bumiputera Sabah	-	-	-	-	-
Bumiputera Sarawak	2	72	41.4	13.29	76.56
Others	2	78	15.8	3.00	53.35
BMI-for-age status (BAZ)					
Thinness (<-2sd)	12	423	15.0	8.90	24.23
Normal (≥-2sd - ≤+1sd)	127	4583	13.6	10.40	17.61
Overweight (>+1sd - ≤+2sd)	32	1137	12.3	8.98	16.58
Obese (>+2sd)	31	1095	13.6	11.09	16.53
Height-for-age status (HAZ)					
Stunting (<-2sd)	10	375	11.9	5.68	23.17
Normal (≥-2sd)	192	6863	13.5	11.27	16.16

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. Pn. Lalitha a/p Palaniveloo, Person in charge for Dietary Intake
- 17.Pn. Siti Nor'Ain binti Hashim, Head of ICT Support
- 18.En. Lim Kuang Kuay, Logistic Support
- 19.Pn. Hamizatul Akmal binti Abd. Hamid, Project Manager
- 20.Pn Wan Shakira binti Rodzlan Hasani, Project Manager
- 21.Pn. Cheong Siew Man, Person in-charge for Habitual Food Intake
- 22.Pn. Nazirah Bt Alias, Data Processing & Quality
- 23.Dr. Fazila Haryati Ahmad, Data Processing & Quality

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

No	Team	Duties	Officers
1	Project Management and Finance	<p>Work closely with recruitment group for employment of RA</p> <p>Prepare Questionnaires manual, Data collection manual</p> <p>Meeting with Liason Officers</p> <p>Planning for data collection training</p> <p>Prepare security cards/name tags for research team</p> <p>Arrangement for advanced payment for team managers, nurses and drivers</p> <p>Process claims of MOH staff</p> <p>Prepare tickets for travelling</p> <p>Monitor the expenditure/budget</p>	<p>Dr. Muhammad Fadhli bin Mohd Yusoff</p> <p>Dr. S. Maria binti Awaluddin Pn. Ruhaya binti Salleh</p> <p>Pn. Hamizatul Akmal binti Abd Hamid 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>
--	--	--	---

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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

MELAKA

Liaison Officer

Ms. Jamilah binti Ahmad

Field Supervisor

1. Dr. Shubash Shander a/l Ganapathy
2. Ms. Noraida binti Mohamad Kasim

Nutritionist

1. Ms. Zahratul Nur binti Kalmi
2. Ms. Nathirah binti Maamor
3. Ms. Rohana binti Ya'akof
4. Ms. Asvini a/p Vastavan

Drivers

1. Mr. Wan Muhd Firdaus bin Wan ismail
2. Mr. Anuar bin Mohamad

Research Assistants

1. Nabila Huda binti Mohd Nor
2. Thaneswaran a/l Subramaniam
3. Muhamad Hazwan bin Hasman
4. Nur Nazihah binti Mohamed
5. Mohamad Asyfik bin Whakiddin
6. Nursyafawani binti Yusoff
7. Nur Afifah binti Shaari
8. Nabilah binti Mohd Nawawi
9. Muhammad Noriduan bin Nor'amilin

Appendix 7: Nutrition Questionnaires



TINJAUAN PEMAKANAN REMAJA 2017
மலேசிய பள்ளி மாணவர் உணவு முறை ஆய்வரிக்கை 2017

BORANG SOAL SELIDIK
அளவரிக்கை

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 ஆய்வரிக்கையில் பங்குபெறுகின்றனர்.

நீங்கள் கொடுக்கும் தகவல்கள் நம் நாட்டில் உள்ளவர்களுக்கின் உடல் நிலையைப் பேச மிகவும் உதவும்.

Panduan mengisi borang soal-selidik

ஆய்வரிக்கையை 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 விடையஓ அளிக்கவும். சரி-அல்லதுபிழை என்றமட்டுமே 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 விடத்தாளில் பதிலளிக்கவும்.
3. Cara menghitamkan jawapan:
பதிலளக்கும் 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.
பவ்வாய்வரிக்கையை 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"/> Negeri மாநில	<input type="text"/> Strata நிலை	<input type="text"/> Kategori Sekolah பள்ளி பிரிவு	<input type="text"/> Kod Sekolah பள்ளி குறியீடு	<input type="text"/> Kelas வகுப்பு	<input type="text"/> Pelajar மாணவர்
A2	Tarikh lahir பிறந்த திகதி	<input type="text"/> Hari நாள்	<input type="text"/> Bulan மாதம்	<input type="text"/> Tahun ஆண்டு			
A3	Jantina பால்	A. Lelaki -ன் B. Perempuan பெண்					
A4	Bangsa மனம்	A. Melayu மலாய் B. Cina சீனர் C. India இந்தியர் D. Bumiputra Sabah சபா பூர்வீகம் E. Bumiputra Sarawak சரவாக்பூர்வீகம் F. Lain-Lain மற்றது					
		Sekolah Rendah ஆரம்பப்பள்ளி		Sekolah Menengah மடைநிலைப்பள்ளி			
A5	Kelas Àìòò	A. Tahun 4 ஆண்டு 4 B. Tahun 5 ஆண்டு 5 C. Tahun 6 ஆண்டு 6		D. Kelas Peralihan குறைநீக்கல்வகுப்பு E. Tingkatan 1 படிவம் 1 F. Tingkatan 2 படிவம் 2		G. Tingkatan 3 படிவம் 3 H. Tingkatan 4 படிவம் 4 I. Tingkatan 5 படிவம் 5	
A6	Umur ÀÁÁ	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 தெரிவு செய்து கொடுக்கப்பட்டுள்ள விடைத்தாளில் கருமையாக்குக .

- B1** Apakah sesi persekolahan anda?
 உங்கள் பள்ளி எச்சமயத்தில் நடைபெறும் ?
- A Sesi pagi sahaja / காலை மட்டும்
 B Sesi petang sahaja / மதியத்தில் மட்டும்
 C Sesi pagi sampai petang / காலை முதல் மாலை வரை
- B2** 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-
 விருந்துகாலை மணி 8.00 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 berkaitan / Tidak ambil sarapan
 தொடர்பு இல்லை / காலை உணவு உட்கொள்வதில்லை
- B3** Kebiasaannya, dari mana anda dapat makanan itu?
 வழக்கமாக எங்கு காலை உணவை உட்கொள்வீர்கள்?
- 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
- B4** Sekiranya anda tidak mengambil sarapan, apakah sebabnya?
 ஏன் காலை 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/kerana saya mengambil sarapan setiap hari
 தொடர்பு இல்லை/ தினமும் காலை சிற்றுண்டி உட்கொள்வேன்.

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-லிருந்துமாலை மணி 6.00 வரை)?
- A 1 hari / 1 நாள்
B 2 hari / 2 நாள்
C 3 hari / 3 நாள்
D 4 hari / 4 நாள்
E 5 hari / 5 நாள்
F 6 hari / 6 நாள்
G 7 hari / 7 நாள்
H Tidak minum petang / மாலை சிற்றுண்டி உட்கொள்வதில்லை
- B11** Kebiasaannya, dari mana anda dapat makanan itu?
வழக்கமாக அவ்வணவை எங்கிருந்து பெருவீர்கள்?
- A Disediakan di rumah / வீடு
B Beli di kantin sekolah / பள்ளி சிற்றுண்டிச்சாலை
C Beli di restoran atau warung / கடை
D Disediakan di asrama / பள்ளி விடுதி
E Lain-lain / மற்றது
F Tidak ambil minum petang / மாலை சிற்றுண்டி உட்கொள்வதில்லை
- B12** Kebiasaannya, dalam seminggu berapa hari anda makan malam(6.00 petang hingga 10.00 malam)?
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை யரவு உணவு உட்கொள்வீர்கள் (மதிய மணி 6.00-லிருந்துயரவு மணி 10.00 வரை)?
- A 1 hari / 1 நாள்
B 2 hari / 2 நாள்
C 3 hari / 3 நாள்
D 4 hari / 4 நாள்
E 5 hari / 5 நாள்
F 6 hari / 6 நாள்
G 7 hari / 7 நாள்
H Tidak makan malam / யரவு உணவு உட்கொள்வதில்லை

Tinjauan Persekitaran Keluarga

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

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

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

- B25** Berapa kerap anda mengambil makanan ringan tersebut dalam seminggu?
ஒரு வாரத்தில் எத்தனை முறை துரித உணவு உட்கொள்வீர்கள்?
- A 1 kali / 1 முறை
B 2 kali / 2 முறை
C 3 kali / 3 முறை
D 4 kali / 4 முறை
E 5 kali / 5 முறை
F 6 kali / 6 முறை
G 7 kali atau lebih / 7 முறைக்கு மேல்
H Tidak pernah makanan ringan atau snek / துரித உணவு உட்கொள்வதில்லை
- B26** Apakah jenis makanan dan/atau minuman yang selalu anda beli dari luar pagar sekolah?(Boleh pilih **SATU** atau **DUA** jawapan sahaja)
எத்தகைய உணவை பள்ளி வலாகத்தின் வெளியே பெறுவீர்கள்? (ஒன்று அல்லது யரண்டு விடையை மட்டும் தெர்வு செய்க)
- A Gula-gula/coklat / சாக்டெட்
B Kentang goreng / nuget / sosej / பிரஞ் பிரைஸ்/ நாகெட்/ சொசெஜ்
C Air berperisa/air berkarbonat / குளிர்்பானம்/ 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 கீழ்க் குறிப்பிடப்பட்டுள்ள நடவடிக்கையை மேற்கொண்டீர்களா? (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 சிகிப்பிங்	A	B	C	D	E
b	Mendayung / Berkenu படகு ஓட்டல்	A	B	C	D	E
c	Silat / Karate / Taekwondo சிலாட் / கராட்டே / தைக்கொண்டோ	A	B	C	D	E
d	Bermain kejar-kejar ஓடி பிடித்து விளையாடல்	A	B	C	D	E
e	Bersenam dengan berjalan நடத்தல்	A	B	C	D	E
f	Berbasikal மிதிவண்டி ஓட்டல்	A	B	C	D	E
g	Joging / Berlari மெதுவோட்டம்	A	B	C	D	E
h	Senamrobik ஏரோபிக்ஸ்	A	B	C	D	E
i	Berenang நீச்சல் அடித்தல்	A	B	C	D	E
j	Bola lisut / Besbol பேல்பாஷ்	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 ஹகி	A	B	C	D	E
o	Bola tampar கைப்பந்து	A	B	C	D	E
p	Bola keranjang / Bola jarring நெட்பால்	A	B	C	D	E
q	Sepak takraw செபாக் டாக்ரா	A	B	C	D	E
r	Bola sepak / Futsal காற்பந்து	A	B	C	D	E
s	Pingpong பிங்பொங்	A	B	C	D	E

Tinjauan Persekitaran (English)

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

Tamil Language Version

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

<p>MODUL D : PERSEPSI PENGURUSAN BERAT BADAN தொகுதி D : உடல் எடை கட்டுப்பாடு</p>	
<p>Arahan : <i>Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.</i> கட்டளை : <i>சரியான விடையைத் தெர்வு செய்து கொடுக்கப்பட்டுள்ள விடைத்தாளில்</i></p>	
<p>D1</p>	<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>
<p>D2</p>	<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>
<p>D3</p>	<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
 டீஸிப்பு நிறைந்த உணவை குறைத்தல்

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

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

F Mengambil pil diet/menggunakan krim pelangsing tubuh
 மருந்து பயன்படுத்துதல்

G Berpuasa
 விரதம்

H Mendapat khidmat professional
 அறிவுரை நாடுதல்

I Tidak berhasrat mengurangkan berat badan
 உடல் எடையைக் குறைக்க விருப்பமில்லை

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

A Kesihatan / உடல் நிலையைப் பேண

B Kecantikan / அழகைப் பேண

C Meningkatkan keyakinan diri / தன்னிக்கிகையை 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 / டீல்லை</p> <p>(Jika TIDAK, sila jawab TIDAK AMBIL SUPLEMEN di soalan E2, E3, dan E4) (டீல்லைஎன்றால், விடமின் உட்கொள்ளவில்லைஎன்று 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) / டீரும்பு 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				
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																		
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
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																		

Tinjauan Pemakanan Remaja

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

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



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

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

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

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

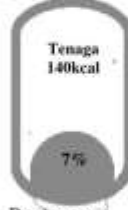
- F5** Jika saya minum 100ml minuman ini, ia membekalkan 56 kcal tenaga.
நான் 100ml குளிர்பானம் குடித்தால், எனக்கு 56 கலோரிச் சத்துகள் கிடைக்கும்.
- A Betul / சரி
B Salah / பிழை
C Tidak tahu / தெரியவில்லை
- F6** Jika saya minum satu kotak minuman ini, bermaksud saya telah mengambil 26.5 gram gula.
ஓர்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

Tinjauan Pemakanan Remaja

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

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


Satu Hidangan
Mengandungi 250 ml
ஒரு பரிமாறலில் 250 ml உள்ளது



- 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 டீய்வுண்டவை உட்கொண்டால், 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

Enjinan Persekitanan Kesihatan

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	<table border="0"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td>State 州属</td> <td>Strata 区域</td> <td>School Category 学校类别</td> <td>School code 学校编号</td> <td>Class 班级</td> <td>Student 学生</td> <td colspan="2"></td> </tr> </table>									State 州属	Strata 区域	School Category 学校类别	School code 学校编号	Class 班级	Student 学生		
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	<table border="0"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td>Day/日期</td> <td>Month/月</td> <td colspan="5">Year/年份</td> </tr> </table>									Day/日期	Month/月	Year/年份					
Day/日期	Month/月	Year/年份															
A3	<p>A. Male/男 B. Female/女</p>																
A4	<p>A. Malay/马来人 B. Chinese.华人 C. Indian/印度人 D. Sabah indigenous/沙巴士著 E. Sarawak indigenous /沙撈越土著 F. Others/其他</p>																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 40%; text-align: center;">Primary school/小学</th> <th style="width: 40%; text-align: center;">Secondary school/中学</th> </tr> </thead> <tbody> <tr> <td>A5</td> <td> <p>A. Primary 4/4年级 B. Primary 5/5年级 C. Primary 6/6年级</p> </td> <td> <p>D. Remove class/预备班 E. Secondary1/初中1 F. Secondary2/初中2 G. Secondary3/初中3 H. Secondary4/初中4 I. Secondary5/初中5</p> </td> </tr> <tr> <td>A6</td> <td> <p>A. 10 year old/10岁 B. 11 year old /11岁 C. 12 year old /12岁</p> </td> <td> <p>D. 13 year old /13岁 E. 14 year old / 14岁 F. 15 year old / 15岁 G. 16 year old /16岁 H. 17 year old / 17岁 I. 18 year old / 18岁</p> </td> </tr> </tbody> </table>		Primary school/小学	Secondary school/中学	A5	<p>A. Primary 4/4年级 B. Primary 5/5年级 C. Primary 6/6年级</p>	<p>D. Remove class/预备班 E. Secondary1/初中1 F. Secondary2/初中2 G. Secondary3/初中3 H. Secondary4/初中4 I. Secondary5/初中5</p>	A6	<p>A. 10 year old/10岁 B. 11 year old /11岁 C. 12 year old /12岁</p>	<p>D. 13 year old /13岁 E. 14 year old / 14岁 F. 15 year old / 15岁 G. 16 year old /16岁 H. 17 year old / 17岁 I. 18 year old / 18岁</p>							
	Primary school/小学	Secondary school/中学															
A5	<p>A. Primary 4/4年级 B. Primary 5/5年级 C. Primary 6/6年级</p>	<p>D. Remove class/预备班 E. Secondary1/初中1 F. Secondary2/初中2 G. Secondary3/初中3 H. Secondary4/初中4 I. Secondary5/初中5</p>															
A6	<p>A. 10 year old/10岁 B. 11 year old /11岁 C. 12 year old /12岁</p>	<p>D. 13 year old /13岁 E. 14 year old / 14岁 F. 15 year old / 15岁 G. 16 year old /16岁 H. 17 year old / 17岁 I. 18 year old / 18岁</p>															

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 Kebangsaan

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

<p>MODULE D : PERCEPTION OF WEIGHT MANAGEMENT D组：体重管理的自我观点</p>	
<p>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</p>	
<p>D1</p>	<p>At the present time, you think you are: 目前, 你觉得你:</p> <p>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</p>
<p>D2</p>	<p>What are you doing to your body weight? 你对你的体重做了些什么?</p> <p>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</p>
<p>D3</p>	<p>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?</p> <p>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</p>
<p>D4</p>	<p>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?</p> <p>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</p>
<p>D5</p>	<p>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?</p> <p>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</p>
<p>D6</p>	<p>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?</p> <p>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</p>

<p>MODULE E: SUPPLEMENT INTAKE E组：食用营养补剂</p>	
<p><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></p>	
<p>E1</p>	<p>Are you taking any vitamin supplement/ minerals? 你有在食用维生素/矿物质的补剂吗? 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 回答没有食用补剂))</p>
<p>E2</p>	<p>What type of vitamin supplement/ minerals that you usually take? 你在食用什么维生素/矿物质补剂? 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/没有食用补剂</p>
<p>E3</p>	<p>What is the reason for you to take vitamin supplement/ minerals? 是什么原因使你在食用维生素/矿物质补剂? 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/没有食用补剂</p>
<p>E4</p>	<p>How often do you take vitamin supplement / minerals? 你如何食用该维生素/矿物质补剂? 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/没有服用补剂</p>
<p>E5</p>	<p>Are you taking any food supplement? 你有在食用食物补剂吗? 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 回答没有食用补剂)</p>

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 style="text-align: right;">} (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 style="text-align: right;">(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-left: auto; margin-right: 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				
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																		
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-left: auto; margin-right: 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
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																		

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

Figure 1. Nutrition Facts

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="margin-left: 20px;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2" style="text-align: center;">Day/日期</td> <td colspan="2" style="text-align: center;">Month/月份</td> <td colspan="2" style="text-align: center;">Year/年份</td> </tr> </table>							Day/日期		Month/月份		Year/年份	
Day/日期		Month/月份		Year/年份									
G2	Body weight/体重												
G2a	Weight 1/体重1 <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> : <input style="width: 40px;" type="text"/> kg/公斤												
G2b	Weight 2/体重2 <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> : <input style="width: 40px;" type="text"/> kg/公斤												
	Refuse to be measured 不愿被测量 <input style="width: 40px; height: 30px;" type="text"/>												
G3	Body height/身高												
G3a	Height 1/身高1 <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> : <input style="width: 40px;" type="text"/> cm/厘米												
G3b	Height 2/身高2 <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> : <input style="width: 40px;" type="text"/> cm/厘米												
	Refuse to be measured 不愿被测量 <input style="width: 40px; height: 30px;" type="text"/>												



Primary School Questionnaire Answer Sheet

TINJAUAN PEMAKANAN REMAJA 2017
KERTAS JAWAPAN

AL 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
<input type="radio"/>	<input type="radio"/>	1	1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2	2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>														

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 menambahkan program sedia ada untuk golongan remaja di Malaysia.

10. Adakah maklumat perubatan anak saya akan dirahsiakan?

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

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

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

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

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

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

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

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

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

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

BORANG PERSETUJUAN IBU BAPA/ PENJAGA (Salinan Penyelidik)

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

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

	Sila tandakan ✓ 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 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 berkeelayakan, auditor, dan pihak kuasa yang berkaitan mempunyai akses kepada maklumat yang saya berikan untuk memastikan maklumat tinjauan dicatat dengan betul. Saya faham segala maklumat peribadi dan data tinjauan ini akan dirahsiakan.	<input type="checkbox"/>
6. Saya akan menerima satu salinan maklumat tinjauan/borang persetujuan ini yang telah ditandatangani dan bertarikh.	<input type="checkbox"/>

Responden :

Tandatangan :
 Nama :
 Nombor K/P :
 Tarikh :

Penyelidik:

Tandatangan :
 Nama :
 Nombor K/P :
 Tarikh :

Appendix 9: List of Abbreviations

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



INSTITUT FOR PUBLIC HEALTH



Ministry of Health Malaysia



KEMENTERIAN
PENDIDIKAN
MALAYSIA

ISBN 978-983-2387-46-6

