MyBreakfast Study of School Children:

Findings, Implications & Solutions

SYMPOSIUM

Presentation 2:

Research methodology

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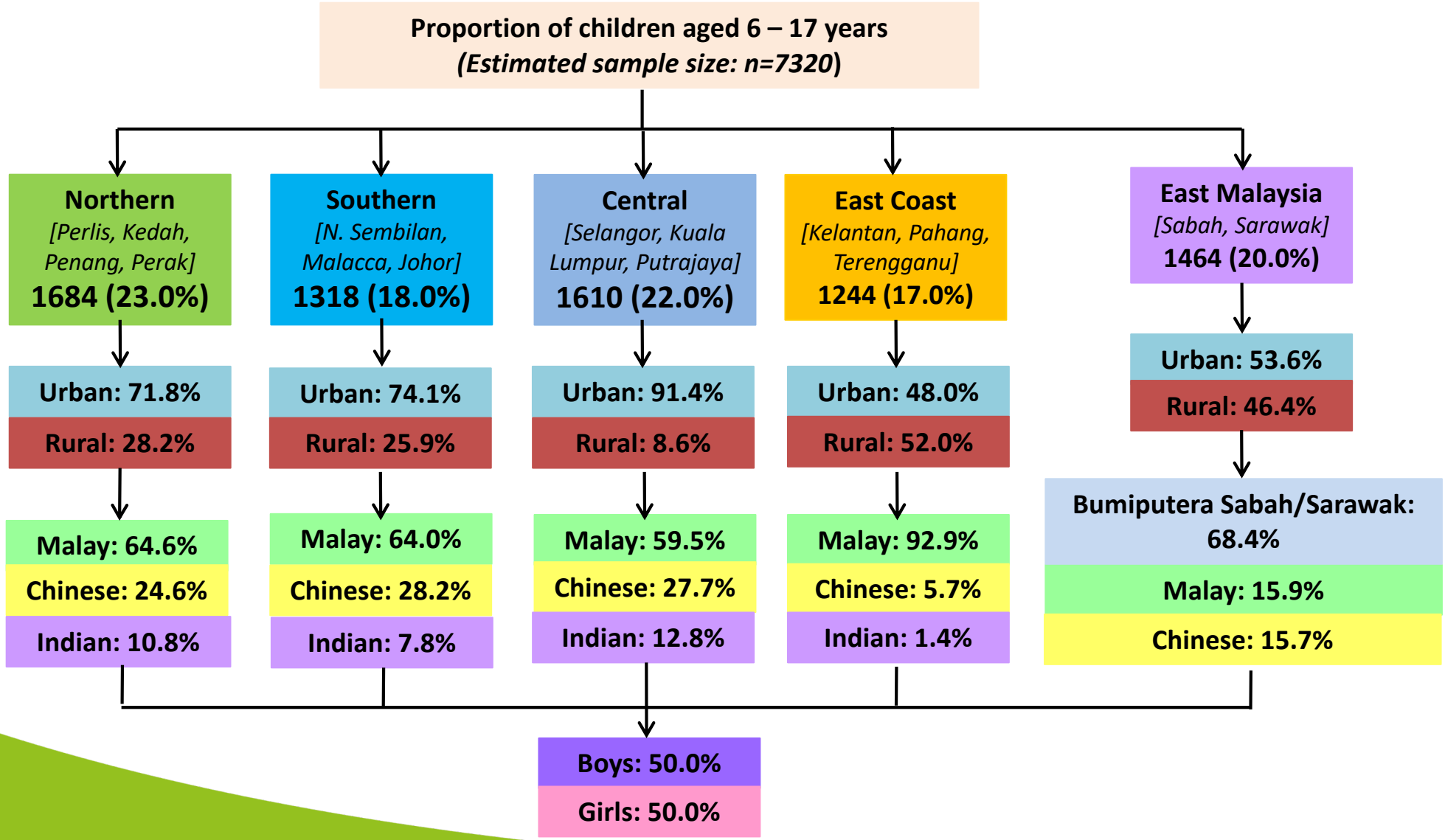
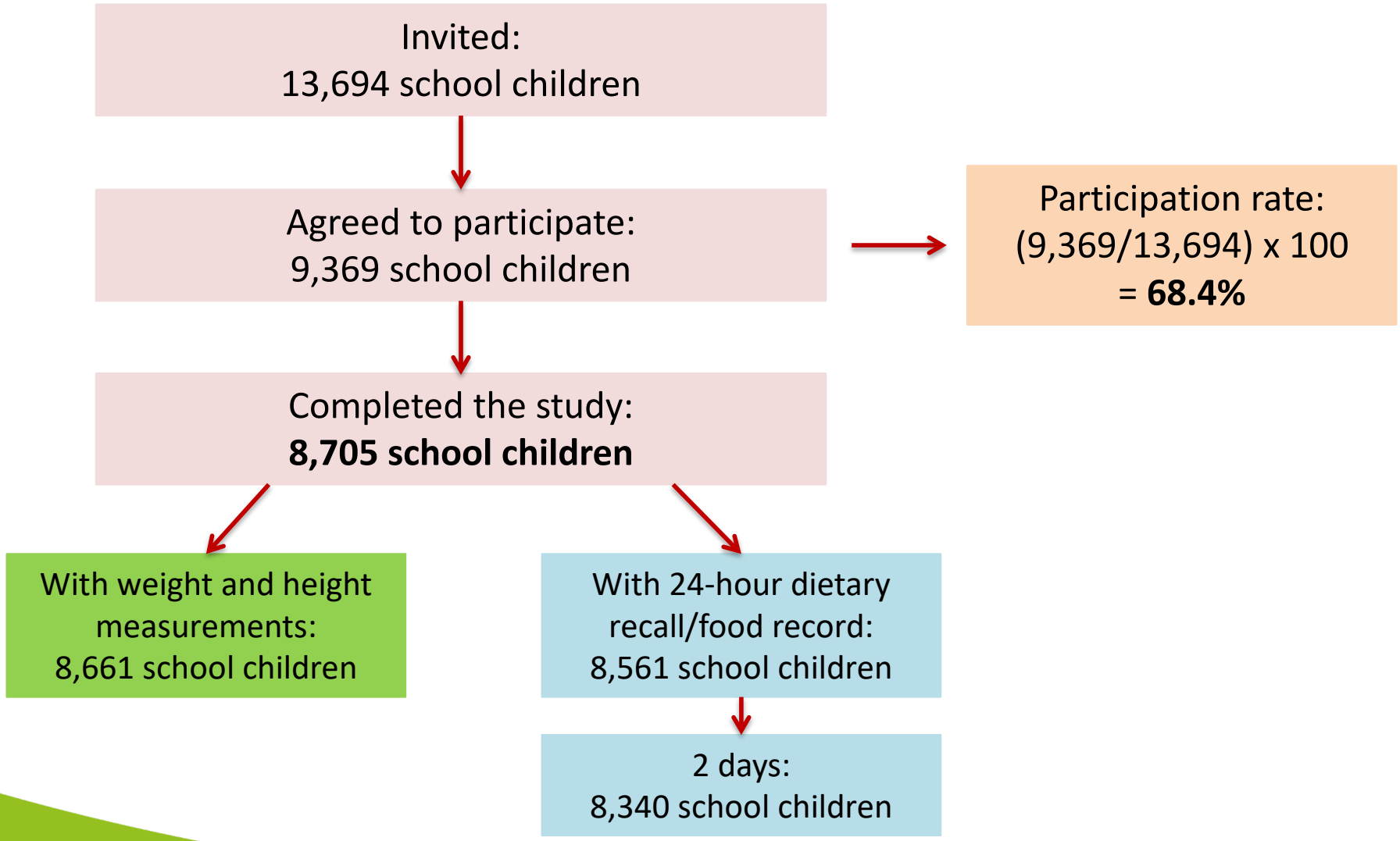
Introduction

- The MyBreakfast Study is a nationwide cross-sectional study on breakfast consumption pattern among school children in Malaysia
- A multi-stage sampling method was carried out based on geographical location and ethnic group distribution.
- The estimated sample size was calculated based on the total population of children aged 6 to 17 years in Malaysia derived from the Population and Housing Census 2010 (Department of Statistics, 2010).
- Ethical approval was obtained from Universiti Kebangsaan Malaysia Research Ethnics Committee (UKMREC)
- Permission to conduct the study was given by the Ministry of Education Malaysia (MOE)

Sampling procedure



Participation rate



Pre-testing

- A pre-testing of the questionnaires was conducted in one primary and one secondary public school in Selangor
- The pre-testing involved 113 children aged 6 to 17 years
- The purpose of the pre-testing was to ensure that the instruction and questions in the questionnaires were well-understood by the study subjects
- The flow of the data collection and the estimated time required for the children and adolescents to complete the study components were also determine in a pilot study

Respondents and data collection

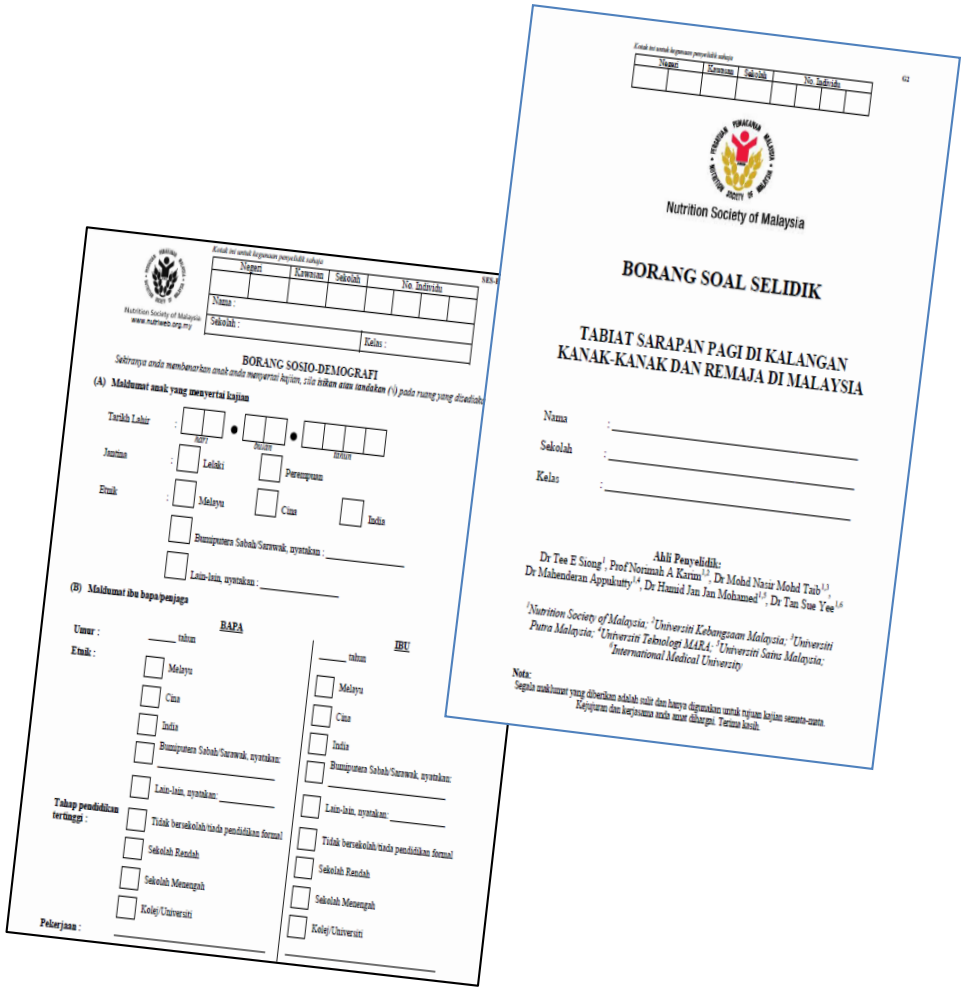
- Data collection: 15th April – 11th October 2013
- Randomly selected schools in the **urban (56 schools)** and **rural (28 schools)** areas of each state of the **five** regions based on school register as of 31st January 2011 (Ministry of Education Malaysia, 2011)
- Respondents:
    - Aged 6 to 17 years (Standard 1 – 5; Form 1, 2 & 4)
    - Malaysian citizen
    - Healthy, with no physical or mental disabilities
    - Parent/guardian consented for participation

Instruments

1

Socio-demographic background

- Completed by parent/guardian
- Child's age, sex, ethnicity, birth order
- Parents' educational attainment, occupation, monthly household income, number of children, household size



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BORANG SOAL SELIDIK

TABIAT SARAPAN PAGI DI KALANGAN KANAK-KANAK DAN REMAJA DI MALAYSIA

BORANG SOSIO-DEMOGRAFI

Instruments

2

Weight and height measurements

- **Height**
  - Recorded to the nearest 0.1 cm
- **Weight**
  - Recorded to the nearest 0.1 kg

Height

Weight

Instruments

3

Breakfast Habits

- Breakfast habits questionnaire (BHQ)
- 14 items
- Breakfast frequency & location
- Types of foods and beverages usually consumed at breakfast
- Consumption of ready-to-eat breakfast cereal (RTEBC), hot cereal and malted drinks at breakfast

Definitions:

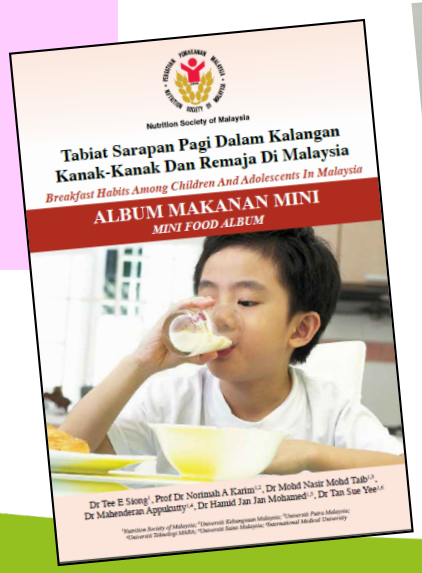
1. Breakfast: First eating occasion after an overnight sleep until **10am in the weekdays** and **11am in the weekends**
2. Breakfast eater: Consumed breakfast for **at least 5 days a week**
3. Breakfast skipper: Skipped breakfast **more than 2 days a week**

Instruments

4

Current Dietary Intake

- 1 weekday & 1 weekend
- 6 – 9 years: Food record by parents
- 10 – 17 years: 24-hour dietary recall (interview)
- Mini food album → facilitate portion size estimation



Instruments

5

Habitual Dietary Intake

- Food Frequency Questionnaire (FFQ)
- Adapted from *Food Frequency Questionnaire for Adolescents* (Irma, 2001).
- 75 items + 15 items on whole grain foods
- Mini food album → Whole grain products section to facilitate identification of whole grain foods
- 6 – 9 years: Filled-up by parents
- 10 – 17 years: Self-administered (with assistance)

Whole Grain Section in the Mini Food Album

BAHAGIAN 3 / *SECTION 3*
G. Produk Bijirin Penuh
(Whole Grain Products)

Produk bijirin penuh kaya dengan serat nutrien yang bernilai, penting dalam membantu tumbesaran kanak-kanak dan keperluan tenaga. Bijirin penuh mempunyai tiga bahagian, kesemuanya mempunyai nilai kebaikan. Contoh bijirin penuh yang biasa didapati adalah gandum penuh, rai, gandum kuda, dan oat.
(Whole grain products are rich in fiber and valuable nutrients, essential in aiding children growth and energy needs. A whole grain comprises three parts, all of which have beneficial properties. Example of common types of whole grain is whole wheat, rye, buckwheat, and oats.)

1. BRAN *(BRAN)* — Mengandungi serat, vitamin B dan zat besi *(Contains fibre, B vitamins and iron)*
2. ENDOSPERMA *(ENDOSPERM)* — Mengandungi tenaga, karbohidrat dan beberapa jenis vitamin B *(Contains energy, carbohydrates and some B vitamins)*
3. GERMA *(GERM)* — Mengandungi vitamin B dan zat besi *(Contains B vitamins and iron)*

Anda perlu memeriksa dan membaca label pada bungkusan bagi mengenalpasti sama ada makanan yang anda makan adalah bijirin penuh atau tidak.
(You have to check and read the labels on the packaging to identify whether the food you eat is whole grain or not.)

No.	Makanan *(Food)*	Foto *(Photo)*
G1.	Oat *(oats)*	Oat adalah salah satu bijirin penuh. *(Oats is a whole grain.)*
G2.	Barli bersekam, bukan beras barli *(dehulled barley, not pearled barley)*	*Barli bersekam juga adalah salah satu contoh bijirin penuh!* (Dehulled barley is one of the whole grain too!)

27

Foto *(Photo)*

roti diperbuat daripada bijirin penuh nilpenuh) dalam pasaran. *of whole grain bread in the market.)*

ipada tepung atta. Tepung atta adalah ontoh produk bijirin penuh. *rom atta flour. It is an example of a olegrain product.)*

Muesli yang mempunyai kombinasi oat, kacang, buah-buahan dan biji kering adalah produk bijiirn penuh.
(Muesli which has a combination of oats, nuts, dried fruits and seed is a whole grain product.)

Foto *(Photo)*

jirin penuh sarapan pagi *ole grain breakfast cereal)*

rapan pagi yang terdapat di pasaran diperbuat h. Anda perlu **memeriksa dan membaca** asti sama ada bijirin sarapan pagi yang anda enuh atau tidak. *ereals in the market are made from whole heck and read the label to identify whether that you eat is whole grain or not.)*

enuh pada produk bijirin sarapan pagi *grain label on the breakfast cereal products)*

in sarapan pagi yang **bukan bijirin penuh**. *ast cereals that are not made from whole*

Bar granola adalah boleh dimakan untuk sarapan pagi atau sebagai makanan ringan. Ia terdiri daripada oat, kacang, madu dan kadang kala beras kembang, yang selalunya dibakar sehingga garing.
(Granola bars can be taken as breakfast food or snack food. They consist of rolled oats, nuts, honey, and sometimes puffed rice, that are usually baked until crisp.)

Foto *(Photo)*

ung adalah bijirin penuh. Kerepek yang a 100% jagung juga dikira sebagai oduk bijirin penuh. *whole grain products. Chips that are made o considered as a whole grain product!)*

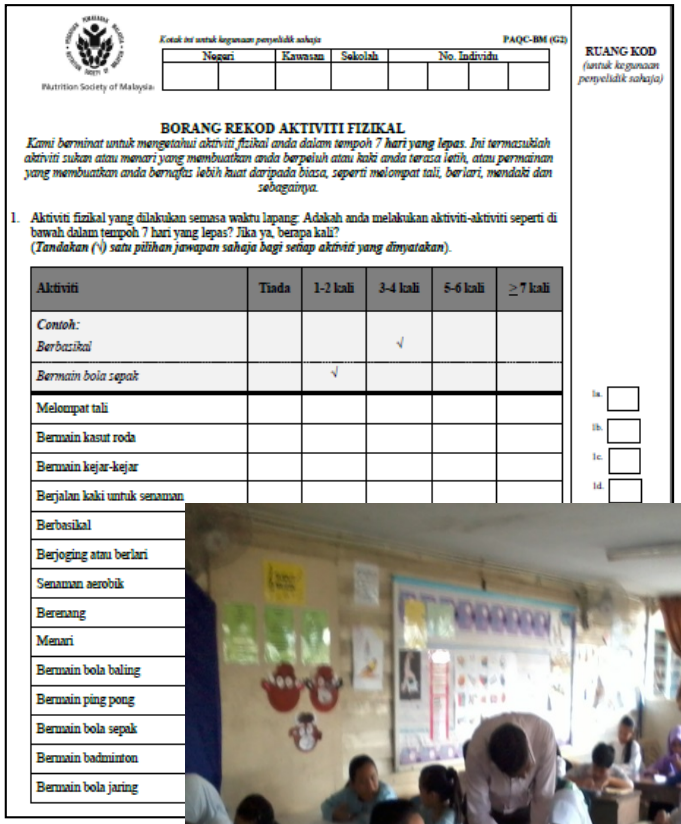
jenis biskut bijirin penuh yang boleh dipilih di pasaran. *ds of whole grain biscuts that you can se from in the market.)*

Instruments

6

Physical Activity

- 6 – 13 years: Physical Activity Questionnaire for Children (PAQ-C) (Crocker et al., 1997; Kowalski et al., 2004) (10 items)
- 14 – 17 years: Physical Activity Questionnaire for Older Children (PAQ-A) (Crocker et al., 1997; Kowalski et al., 2004) (9 items)
- + Screen time, bedtime & wake-up time on school days & weekends
- 6 – 9 years: Filled-up by parents
- 10 – 17 years: Self-administered (with assistance)



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Kotak ini untuk kegunaan penyelidik sahaja PAQC-BM (G2)

Negeri		Kawasan	Sekolah	No. Individu			

RUANG KOD *(untuk kegunaan penyelidik sahaja)*

BORANG REKOD AKTIVITI FIZIKAL

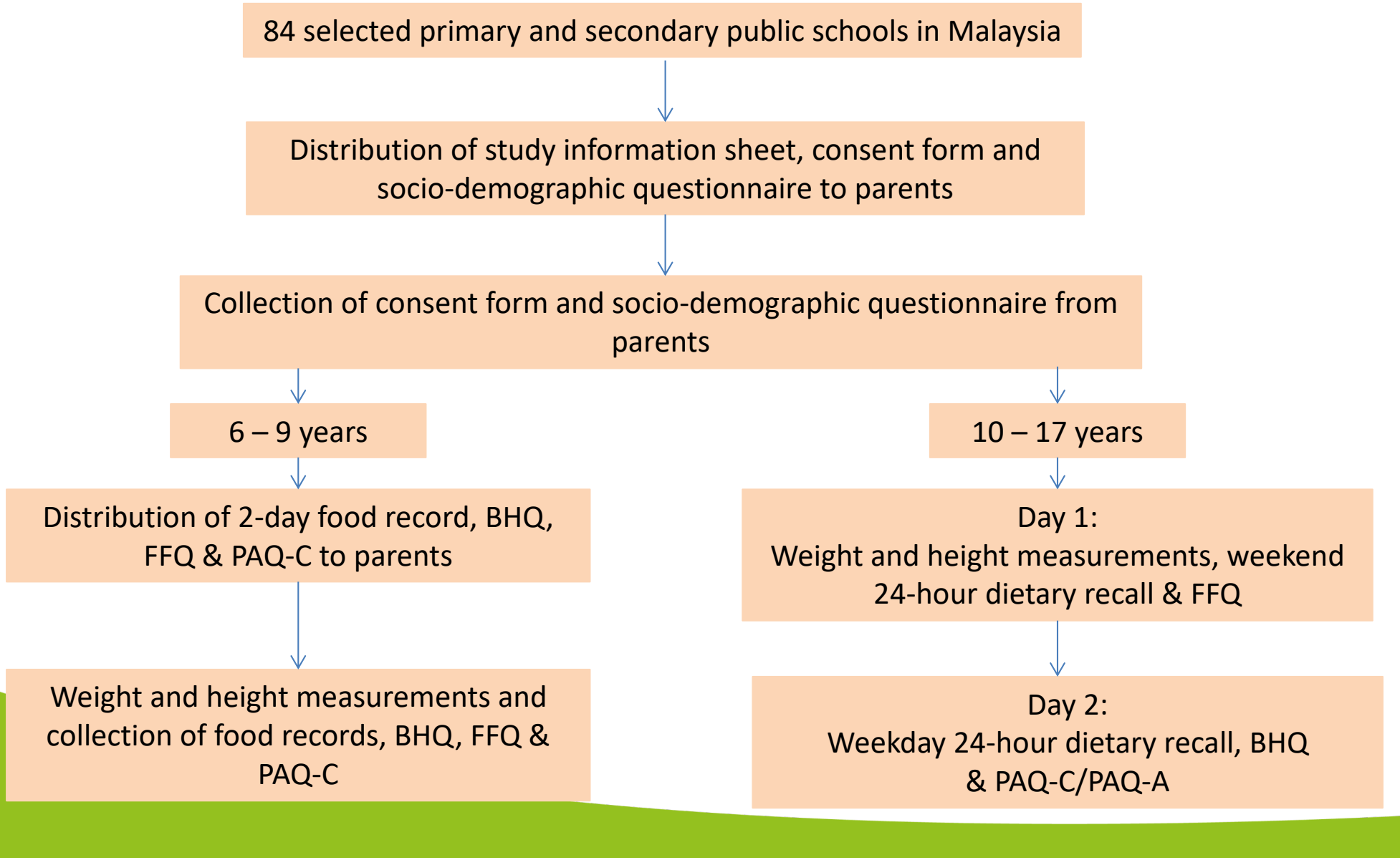
Kami berminat untuk mengetahui aktiviti fizikal anda dalam tempoh 7 hari yang lepas. Ini termasuklah aktiviti sukan atau menari yang membuatkan anda berpeluh atau kaki anda terasa letih, atau permainan yang membuatkan anda bernafas lebih kuat daripada biasa, seperti melompat tali, berlari, mendaki dan sebagainya.

1. Aktiviti fizikal yang dilakukan semasa waktu lapang: Adakah anda melakukan aktiviti-aktiviti seperti di bawah dalam tempoh 7 hari yang lepas? Jika ya, berapa kali?
(Tandakan (√) satu pilihan jawapan sahaja bagi setiap aktiviti yang dinyatakan).

Aktiviti	Tiada	1-2 kali	3-4 kali	5-6 kali	≥ 7 kali
Contoh: *Berbasikal*			√		
Bermain bola sepak		√			
Melompat tali					
Bermain kasut roda					
Bermain kejar-kejar					
Berjalan kaki untuk senaman					
Berbasikal					
Berjoging atau berlari					
Senaman aerobik					
Berenang					
Menari					
Bermain bola baling					
Bermain ping pong					
Bermain bola sepak					
Bermain badminton					
Bermain bola jaring					

1a. ☐
1b. ☐
1c. ☐
1d. ☐

Data Collection Flow



Data Analysis

- Data were analysed using SPSS software version 19
- Energy & nutrient intakes were analysed using NutritionistPro™ Software based principally on the Nutrient Composition of Malaysian Foods (Tee et al., 1997)
- Adequacy of nutrient intakes was compared to the Recommended Nutrient Intakes (RNI) for Malaysia (NCCFN, 2005)
- All univariate analyses were carried out using descriptive statistics
- Bivariate analyses were carried out using chi-square test for categorical variables and Pearson correlation for continuous variables.
- Independent samples t-test and analysis of variances (ANOVA) were used to compare means between groups.
- Binary logistic regression was performed to determine the odds ratio of being overweight/obese by breakfast consumption habits.
- Level of significance was determined at $p<0.05$.

References

- Department of Statistics Malaysia. (2010). Preliminary Count Report: Population and Housing Census of Malaysia 2010. Putrajaya: Department of Statistics Malaysia.
- Irma, NA. (2001). Kaliberasi soal selidik kekerapan makanan dalam kalangan remaja. Tesis Sarjana Muda Pemakanan, Jabatan Pemakanan dan Dietetik, Fakulti Sains Kesihatan Bersekutu, Universiti Kebangsaan Malaysia.
- Kowalski, K.C., Crocker, P.R.E., Donen, R.M. (2004). The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) Manual. Saskatoon: College of Kinesiology, University of Saskatchewan.
- NCCFN, National Coordinating Committee on Food and Nutrition. (2005). Recommended Nutrient Intakes for Malaysia. Putrajaya: Ministry of Health Malaysia.
- Tee, E.S., Mohd Ismail, N., Mohd Nasir, A., Khatijah, I. (1997). Nutrient Composition of Malaysian Foods. Kuala Lumpur: Institute for Medical Research.

THANK YOU