



UNIVERSITI PUTRA MALAYSIA

**DEVELOPMENT OF QUESTIONNAIRE FOR ASSESSMENT OF SNACK AND
FAST FOOD CONSUMPTION AMONG URBAN CHILDREN AGED 7-9 YEARS**

SHARIFAH INTAN ZAINUN BINTI SHARIF ISHAK

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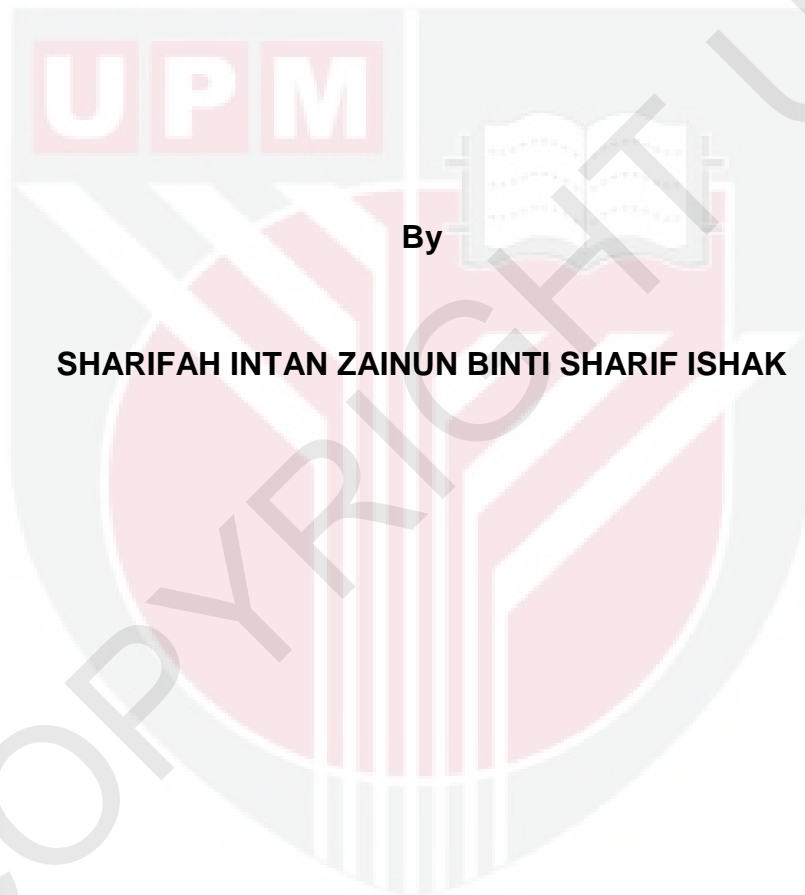
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FAST FOOD CONSUMPTION AMONG URBAN CHILDREN AGED 7-9 YEARS**



By

SHARIFAH INTAN ZAINUN BINTI SHARIF ISHAK



**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfilment of the Requirements for the Degree of Master of
Science**

December 2012

This thesis is dedicated with deepest love and appreciation to my parents,

Dr. Sharif Ishak Sharif Abdullah

Hamidah Abdullah

Their love and constant prayers have supported me to be the best that I can be

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in
fulfilment of the requirement for the degree of Master of Science

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December 2012

Chair : Shamarina Shohaimi, PhD

Faculty : Science

Snack and fast food consumption has been identified in contributing to the development of childhood obesity. To date, there is a lack of valid and reliable food frequency questionnaire (FFQ) for the assessment of these food items in Malaysia. The present study was aimed to develop a validated and reliable FFQ for the assessment of snack and fast food consumption among 7-9 years old urban children. This study was divided into two phases.

Phase 1 which is the development of FFQ using focus group discussions (FGDs) aimed to identify types of snack and fast food usually consumed by children and to develop a preliminary food list for FFQ. A total of 33 children aged 7-9 years old from Selangor and Kuala Lumpur participated in the FGDs. FGDs were audio-taped, transcribed and analyzed. The outcomes showed that the children

usually consumed snacks such as white bread with spread or as sandwich, local cakes, fruits such as papaya, mango and watermelon, biscuits or cookies, tea, chocolate drink and instant noodle. Their choices of fast food included pizza, burger, French fries and fried chicken. The reasons of the food liking were the taste, their knowledge on the nutritional values and the characteristics of foods. The preliminary food list was prepared which included 49 food items.

Phase 2 is a validity and reliability study of the FFQ conducted in selected schools in Selangor. For face validity, 50 parents were included in the study and the suggestions of the food items to be included in the FFQ were obtained. A total of 67 food items were prepared to be included in the FFQ which consider the parents' suggestions. To determine the internal validity, we included 424 parents (68.6% mothers) who have completed the FFQ. Out of 67 items, 37 items were retained in the final model. The factor analysis suggested 6 factors that explained 41.84% of the variance. These factors were labelled local fried and savoury snacks, fresh fruits and fruit juice, sweet snacks, sweetened beverages and western-style fast food, bread and bread spread; and cereal-based foods.

Internal consistency reliability, assessed by Cronbach's alpha (α) for all 37 items was high ($\alpha=0.883$). All 6 factors showed acceptable reliability which ranged from 0.722 (Factor 2: fresh fruits and fruit juice) to 0.864 (Factor 1: local fried and savoury snacks). Test-retest reliability was determined by using paired t-test.

There were no significant difference of the frequency of food intake between the first and second questionnaires for most of the factors except for Factor 1 (local fried and savoury snacks) and Factor 3 (sweet snacks). This indicated acceptable test-retest reliability and stability of the responses to the items in the FFQ over time. The prevalence of overweight among 424 children was 14.6%. Most of the children have normal weight status (84.9%) and 0.5% underweight. The mean BMI was 16.2 kg/m².

The developed FFQ has acceptable validity and reliability in urban sample of 7-9 years old school children for the assessment of snack and fast food intake. The FFQ may contribute as one of brief food intake assessment tools specifically for assessing the consumption of snacks and fast food in Malaysian urban children aged 7-9 years old.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PEMBENTUKAN BORANG SOAL SELIDIK UNTUK PENILAIAN
PENGAMBILAN SNEK DAN MAKANAN SEGERA DI KALANGAN KANAK-
KANAK DI BANDAR BERUMUR 7-9 TAHUN**

Oleh

SHARIFAH INTAN ZAINUN BINTI SHARIF ISHAK

Disember 2012

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Pengambilan snek dan makanan segera telah dikenalpasti menyumbang kepada pembentukan kegemukan dalam kalangan kanak-kanak. Sehingga ke hari ini, tiada borang kekerapan pengambilan makanan (FFQ) yang sahih dan dipercayai untuk jenis makanan ini di Malaysia. Kajian ini bertujuan membentuk borang kekerapan pengambilan makanan untuk penilaian pengambilan snek dan makanan segera bagi kanak-kanak berumur 7-9 tahun di kawasan bandar. Kajian ini telah dibahagikan kepada dua fasa.

Fasa 1 ialah pembentukan FFQ menggunakan perbincangan kumpulan sasaran (FGDs) bertujuan untuk mengenal pasti jenis snek dan makanan segera yang kerap diambil oleh kanak-kanak dan untuk membentuk senarai makanan awal

untuk FFQ. Sejumlah 33 orang kanak-kanak berumur 7-9 tahun dari Selangor dan Kuala Lumpur telah mengambil bahagian dalam perbincangan ini. Perbincangan ini telah dirakam, diterjemah dan dianalisis. Hasil dari kajian ini menunjukkan kanak-kanak kerap mengambil snek seperti roti putih, kuih tempatan, buah-buahan, biskut, teh, minuman coklat dan mi segera. Pilihan makanan segera mereka termasuk pizza, burger, *French fries* dan ayam goreng. Sebab mereka menyukai sesuatu makanan ialah kerana rasa, pengetahuan terhadap nilai pemakanan dan ciri-ciri makanan tersebut. Senarai makanan awal telah disediakan mengandungi 49 jenis makanan.

Fasa 2 ialah kajian kesahihan dan kebolehpercayaan FFQ di sekolah-sekolah yang terpilih di Selangor. Untuk kesahan muka, 50 ibubapa terlibat dalam kajian ini dan cadangan mengenai jenis makanan untuk dimasukkan ke dalam FFQ telah diperolehi. Untuk mendapatkan kesahihan dalaman, kami telah melibatkan 424 ibu bapa (68.6% ibu) yang telah melengkapkan FFQ. Daripada 67 item, 37 item dikekalkan dalam model akhir. Analisis faktor membariskan 6 faktor yang menerangkan 41.84% daripada varians. Faktor-faktor ini telah dilabel snek tempatan bergoreng dan berempah, buah-buahan segar dan jus buah, snek yang manis, minuman yang manis dan makanan segera barat, roti dan sajian roti; dan makanan berasaskan bijirin.

Kebolehpercayaan konsistensi dalaman yang ditentukan dengan menggunakan Cronbach alpha (α) untuk semua 37 item adalah tinggi ($\alpha=0.883$). Kesemua 6

faktor menunjukkan kebolehpercayaan yang memuaskan berjalat dari 0.722 (Faktor 2: buah-buahan segar dan jus buahan) to 0.864 (Faktor 1: snek tempatan bergoreng dan berempah). Kebolehpercayaan ujian semula telah didapati dengan menggunakan ujian t berpasangan. Tiada perbezaan yang signifikan bagi kekerapan pengambilan makanan di antara penilaian pertama dan kedua untuk kebanyakan faktor kecuali Faktor 1 (snek tempatan bergoreng dan berempah) dan Faktor 3 (snek yang manis). Ini menunjukkan kebolehpercayaan ujian semula dan kestabilan yang memuaskan bagi respon terhadap item di dalam FFQ melawan masa. Prevalensi berat badan berlebihan dalam sampel kajian rentas di kalangan 424 orang kanak-kanak ialah 14.6%. Kebanyakan kanak-kanak mempunyai berat badan yang normal (84.9%) dan 0.5% kurang berat badan. Min BMI ialah 16.2 kg/m².

FFQ yang telah dibentuk ini mempunyai kesahihan dan kebolehpercayaan yang memuaskan dalam sampel kanak-kanak berumur 7-9 tahun di kawasan bandar untuk penilaian pengambilan snek dan makanan segera. FFQ ini dapat menyumbang sebagai salah satu daripada alat penilaian pemakanan yang ringkas terutamanya untuk menilai pengambilan snek dan makanan segera bagi kanak-kanak Malaysia berumur 7-9 tahun.

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In the name of ALLAH, the Most Compassionate and Most Merciful
Peace be upon our prophet, Muhammad S.A.W, his family and his companions.

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I certify that a Thesis Examination Committee has met on 3 December 2012 to conduct the final examination of Sharifah Intan Zainun binti Sharif Ishak on her thesis entitled "**Development of questionnaire for assessment of snack and fast food consumption among urban children aged 7-9 years**" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



SHARIFAH INTAN ZAINUN BINTI SHARIF ISHAK

Date: 3 December 2012



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