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Trend on Fast Food Consumption in Relation to Obesity among Selangor Urban Community

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Abstract

This study examined the frequency and characteristics of fast food consumption, and obesity prevalence among community members who attended health centres in the Gombak District. In total, 1173 Malaysian adults were interviewed based on a structured questionnaire. Fast food consumption was higher for mostly young Malays and significantly associated with age, ethnicity, number of children in the household, and perception of their general health in a multivariate model. 21.3% of respondents were obese. However, it was not associated with frequenting fast food restaurants. The high prevalence of fast food consumption points for the need to further educate the community in making healthier life options.

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Keywords: Fast food; urban; obesity; consumption

1. Introduction

Malaysia is continuously undergoing a rapid process of urbanization. Through the 9th Malaysian plan, the government has taken the initiative to promote and encourage western fast food franchises, as one of many efforts to

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boost the country's economy. Given this, 100 percent home delivery/takeaway outlets and cafes/bars/restaurants have seen the greatest growth, i.e. 61 to 97 percent from the year 2000 to 2005. Currently, there is five top U.S fast food establishment in the Malaysian industry; Kentucky Fried Chicken (KFC), McDonalds, Pizza Hut, Kenny Rogers Roasters and A&W (Mohamed and Daud, 2012).The pricing of fast food in Malaysia is very competitive, with continuous efforts from the food franchises to lower their prices to make it affordable to all walks of life. With escalating costs of living especially in urbanized cities, there is a tendency for people to opt for consuming cheaper-priced food. Some criticize fast food as “junk food” and believe that fast food promotion is a significant cause of the obesity epidemic in North America (Mohamed and Daud, 2012). Most fast food is laden with fat; combined with a lack of physical activities, it is a “recipe” for gaining unhealthy and excessive weight. Continuous consumption of fast food and sweet beverages will further increase the obesity risk of children (Alibabic et al., 2014). According to the 2011 Malaysian National Health and Morbidity Survey (2012), for adults aged 18 and above, 33.3% (5.4 million) were pre-obese while 27.2% (4.4 million) were obese following the clinical practice guideline 2004 classification. Among children aged below 18 years old (based on weight for age status), 3.9% (0.3 million) were found to be obese. Additionally, the average Malaysian diet is not among the healthiest, as an estimated 92.5% of adults aged 18 and above consumed less than five servings of fruits and vegetables or alone per day. Malaysia has also been ranked the fattest country in South-East Asia, and the sixth in the Asia-Pacific region (The star, 2014). Most nutritionists expressed that imbalanced nutrition intake not only leads to obesity but also contributes to chronic diseases and shortens the longevity. Obesity gives rise to heart diseases, hypertension, and diabetes. Thus, it has been reported that six of the ten leading causes of death were related to imbalanced nutrition (Din et al, 2012). It is recognized that a balanced nutrition and physical activity are the basic intervention measures in the concept of an integrated approach to prevention of chronic diseases (Simovska-Jarevska et al., 2012). Lifestyle changes (sedentary, consuming less healthy food, stress, etc.) that resulted from modernization indirectly contributed to a new era of diseases such as obesity and cardiovascular diseases (Othman et al., 2012). There are a few factors that may have contributed to the obesity epidemic globally. According to Alibabic et al. (2014), parents can create an environment for children that may foster the development of healthy eating behaviours and weight, or conversely, may promote overweight and aspects of disordered eating. Some parents usually tend to bribe children with sweet foods to encourage positive behaviours. It seems that food preferences of the parents are effective on their children’s eating habits, especially the mother. Also, findings from their study found that obesity is more prevalent among children of mothers with low education levels. Women are the gatekeepers for their role in providing meals for the families. Thus, nutritional education for the mothers will positively affect the eating behaviours and habits of both the mothers and their children. By providing nutritional information on restaurant menus, customers able to make healthier choices. In return, they were, in fact, willing to pay more for food that they perceived to healthier (Hwang & Lorenzen, 2008).The nutritional information or labelling has been made mandatory for food manufacturers and retailers. Food legislation stated that consumers are to be informed about the nutritional properties of the food products. Nutrient contents in foods, including calories, protein, carbohydrate, fat, sugar and others, must be regulated by accredited laboratories (Din et al., 2012). Given obesity is becoming a major public health problem, our study examined the frequency and characteristics of fast-food consumption, as well as obesity prevalence among the urban communities. We hypothesized that frequent fast-food consumption is associated with the increasing prevalence of obesity among the studied population.

2. Methods

We conducted a cross-sectional survey in the month of April and May 2014, involving a total of 1173 people aged 12 to 65 years old who visited two health district clinics in Gombak, Selangor. Participants were selected using convenience sampling, as the aim is to gather as many data for the purpose of exploring fast food eating habits among this population. The inclusion criteria were; Malaysian, literate in Malay or English Language, aged between 12 to 65 years old. Exclusion criteria included those who are non-Malaysian, patients on a wheelchair (not able to perform a physical activity without an assistant) and those who are younger than 12 and above 65 years old. Consent was obtained verbally upon participants’ agreement on their participation in the study. Researchers directly interviewed participants via self-administered questionnaire to evaluate the frequency and characteristics of fast food consumption. Prior of interviewing, an information sheet was provided to the participants. It contains details on

the aims of the study and the purpose of the survey to be conducted and the contact numbers of the researchers involved in the case of any queries they may have. Anthropometric measurements were also taken which included participants' weight and height. This instrument was developed on the basis of current literature (Anderson et al., 2011; Moore et al., 2009), with the purpose to collect data that are relevant towards Malaysian culture. Weekly fast food consumption is defined as 'usually go to a fast food restaurant at least once or more times per week'. For obesity, we used the Malaysian Association for the study of obesity (2014) parameters. Body Mass index (BMI) 18.5-24.9 kg/m² were considered normal weight, 25.0-29.9 kg/m² was overweight and BMI > 30.0kg/m² was obese. Data obtained from this study was analyzed using descriptive statistic and chi-square. Additionally, we used univariate and a multivariate logistic regression model for analysis to generate crude and adjusted odds ratios for trends and obesity. The analysis was done by SPSS software version 19.0.

3. Results

3.1. Socio-demographic of participants

A total of 1173 participants joined this study with an average age of 33.33 ± 29.0 years old. In term of age distribution, half were adults (588), about a third were young people (401), and about 16% (184) were older people (see Table 1). Almost two-thirdswere female (59.5%), and the majority were Malays (938), followed by Chinese (116), Indians (100) and others (19). Education wise, more than half had tertiary qualifications, and the rest had secondary education or less. Half of the participants were currently working and on average they had a household income of MYR 3634.30 ± 3205.33 per month, which is below the current mean[†] for Malaysian households income as of the year 2014 (Chu, 2014). Over 60% were married or previously married (728) with more than half having at least one child (673). On average, participants were overweight with a BMI of 26.20 ± 56.51 , with about a fifth of the sample being obese (246).

Table 1. Socio-demographic and health -related characteristics for participants, 2014.

Characteristics	Frequency (N)	%	Mean (SD)	Median (IQR)
Demographic				
Age			33.33 (29.0)	2.00(21)
≤ 24 years old	401	34.2		
25-49 years old	588	50.1		
≥ 50 years old	184	15.7		
Gender				
Male	475	40.5		
Female	698	59.5		
Ethnicity				
Malay	938	80.0		
Chinese	116	9.90		
Indian	100	8.50		
Others	19	1.60		
Marital Status				
Married	686	58.5		

Divorced	17	1.40	
Widowed	23	2.00	
Separated	2	0.20	
	445	37.9	
Never Married			
Number of children below 18 years old			
Have children	673	57.4	
None	500	42.6	
Socio-economic			
Household Income, Monthly (MYR)			3634.30(320 5.33) 3000.00 (2500.00)
Educational Level			
Never attended school/kindergarten	12	1.00	
Primary School	55	4.70	
Secondary School	482	41.1	
College	160	13.6	
University	464	39.6	
Occupation			
Employed for wages	488	41.6	
Self-employed	98	8.40	
Out of work > 1 year	25	2.10	
Out of work < 1 year	10	0.90	
Housewife	133	11.30	
Student	343	29.20	
Retired	62	5.30	
Unable to work due to medical reasons / no suitable job	14	1.20	
Health-related			
BMI			26.20 (56.51)
Underweight	32	2.80	
Normal	494	42.7	
Overweight	385	33.3	
Obese	246	21.3	

*Mean of household income is RM5600.00

Overall, the prevalence of respondents who consumed fast food at least once a week was 17% (200) (Table 2). However, most of them reported having fast food at least once a month (801). Younger participants were significantly found to be consuming fast food more frequently (52.5%, $p < 0.001$) than others. Between the major ethnic groups, the Malays reported significantly higher prevalence (86.8%, $p = 0.017$) compared to the Chinese and the Indians. Individuals who did not have children were also reporting higher frequencies of fast food intake (53.0%, $p = 0.001$) compared to individuals who had children. In terms of socio-economic factors, participants who had tertiary qualifications reported a significantly higher prevalence of fast food consumption (64.5%, $p < 0.001$) compared to those with secondary education or less. However, household income had no association with frequency of fast-food intake among this population. In the multivariate analysis showed that participants who were young

(<24 years old), Malay ethnicity, and did not have children, were found to be significantly more likely to consume fast food on a weekly basis.

Table 2. Prevalence and odds of having fast food ≥ 1 per week by Demographic, Socioeconomic, and Health-Related Characteristics among respondents, 2014.

Characteristics	Prevalence % (n)	Adjusted OR (95%CI)	P-value
Overall (N=1147)	17.4 (200)	NA	NA
Age			
<24	52.5 (105)	3.574 (1.758-7.267)	0.000
25 – 49	41.0 (80)	1.941 (0.993-3.796)	0.053
>50	6.5 (13)	1 (Reference)	
Sex			
Male	43.5 (87)	0.746 (0.531-1.049)	0.092
Female	56.5 (113)	1 (Reference)	
Ethnicity			
Malay	86.8 (171)	2.303 (1.026-5.170)	0.043
Chinese	9.6 (19)	2.492 (0.963-6.450)	0.060
Indians	3.6 (7)	1 (Reference)	
Children in household			
Yes	47.0 (94)	0.694 (0.488-0.987)	0.042
No	53.0 (106)	1 (Reference)	
Education			
Secondary or less	35.5 (71)	0.853 (0.583-1.546)	0.410
Tertiary	64.5 (129)	1 (Reference)	
Annual income			
\leq MYR3000	55.6 (104)	1.213 (0.857-1.718)	0.277
>MYR3001	44.4 (83)	1 (Reference)	

*Adjusted for demographic, socio-demographic and health-related characteristics

3.2. Characteristics of fast food consumption

The study further investigated the characteristics for frequent fast food consumers (Table 3). Participants reported 'sociability' (38.3%) as the main reason for choosing to eat fast food at least once a month. Usually, participants had fast foods for 'dinner' (53.6%) and regularly ordered 'meal package' instead of 'set meal' (55.7% vs. 7.2%). These take-out fast foods were usually enjoyed at home (87.7%), with most reporting having fast foods at the restaurants with their 'family' (63.0%). As for nutritional information, 48.0% acknowledged that the nutritional information was available to them. However, 84.2% have ever read about; 30.0% always have or most of the time used the information, and 68.6% reported that they were very or somewhat likely to order 'healthier' food.

Table 3. Characteristic of fast food consumption among respondents who frequent Fast Food Restaurant, 2014 (n = 801).

Characteristics	Overall % (n)	Frequency of fast food consumption% (n)		P-Value
		Weekly	Monthly	
Main reason for choosing fast food				

Quick, convenient	29.9 (323)	32.2 (79)	67.8 (166)	0.000
Taste of the food	29.2 (316)	27.3 (68)	72.7 (181)	
Sociability	38.3 (414)	16.9 (47)	83.1 (231)	
Value, cost	2.6 (28)	40.0 (6)	60.0 (9)	
Usual meal was eaten				0.480
Breakfast	5.0 (47)	35.7 (10)	64.3 (18)	
Lunch	28.2 (266)	23.6 (50)	76.4 (162)	
Dinner	53.6 (505)	25.2 (96)	74.8 (285)	
Snack	13.2 (124)	23.1 (16)	78.7 (59)	
Usual order				
Meal package	55.7 (615)	23.7 (113)	76.3 (364)	0.577
Super-size option	16.7 (185)	30.4 (41)	69.6 (94)	0.112
Take-out	18.6 (206)	21.1 (30)	78.9 (112)	0.035
Place of take-out eaten				0.316
In car or another vehicle	6.9 (51)	39.0 (16)	61.0 (25)	
At home	87.7 (646)	25.5 (117)	74.5 (341)	
At work or office	4.3 (32)	28.6 (6)	71.4 (15)	
Accompany person				0.000
Family	63.0 (464)	17.7 (94)	82.3 (437)	
Friends	28.5 (210)	37.9 (83)	62.1 (136)	
Self	6.0 (44)	58.8 (20)	41.2 (14)	
Co-workers	2.6 (19)	17.6 (3)	82.4 (14)	
Nutritional information				
Is available	48.0 (530)	27.2 (114)	72.8 (305)	0.430
Ever read	84.2 (446)	25.7 (89)	74.3 (257)	0.995
Use information when ordering always or most of the time	30.0 (134)	21.8 (30)	78.1 (107)	0.473
Very or somewhat likely to order "healthier" items	68.6 (758)	25.0 (138)	75.0 (415)	0.784

* Calculated by χ^2

Table 4. Prevalence and odds of obesity by frequency of fast food consumption among respondents, 2014.

Frequency of Fast Food Consumption	Obesity Prevalence % (n)	Odds Ratio (95% CI)	P-value	Adjusted Odds Ratio (95% CI)	P-value
Weekly	13.8 (34)	0.561 (0.292-1.079)	0.083	0.980 (0.468-2.053)	0.958
Monthly	50.8 (125)	0.733 (0.413-1.303)	0.291	1.009 (0.528-1.930)	0.978
< Once per month	28.0 (69)	0.806 (0.441-1.474)	0.484	1.103 (0.565-2.154)	0.775
Never	7.3 (18)	1 (Reference)	-	1 (Reference)	-

* Adjusted odds ratios for obesity, age, sex, ethnicity, children in household, education, household income, general health status, fruits/vegetables consumption, and had perform physical activities in past months as confounding variables.

Among those who were obese, only 13.8% reported having fast food on a weekly basis, and a half (50.8%) reported monthly consumption (Table 4). No significant differences were found for the multivariate logistic regression model among obese participants for those who consumed fast foods on weekly, monthly, less than once per month basis, and those who did not consume fast food at all.

4. Discussion and recommendations

This study found that most of the participants were frequenting fast food on a monthly basis, especially among those aged 24 or younger. Similarly, Habib et al. (2011) documented that 84% of Malaysian university students consumed fast food. The frequent consumption of fast food is rather alarming. Although in this present study most reported having their meal at the restaurant, the availability of home delivery services by most fast food franchises have increased the access to fast food for the community. Hence, fast food is now easily accessible without the hassle of leaving their home. The increased consumption is greatly influenced by the accessibility, availability and affordability of a product. We found in terms of ethnicity, Malays were more prevalent in consuming fast food compared to other ethnicities. Due to the exploratory nature of this present study, we were unable to provide explanations for this finding. However, in terms of fast food purchasing, Habib et al. (2011) found that Indians spend less due to their average income allowances being the lowest while Chinese spent the most. Thus, the price is regarded as one of the influential factors in purchasing fast food. This present study also found that participants without children consumed fast food more frequently compared to those with any children. For the younger population, either unmarried or married without children, it is considered reasonable for them to consume fast food. The probable reasons were that fast food was ready to be consumed, besides saving the trouble of cooking. For parents, going out at fast food restaurants might be contributed to their children's requests, as major fast food chains like McDonalds and KFC have playground facilities for the children. We found that taking children to the fast food restaurants was one of the influential factors. This fact was coherent with Habib et al. (2011) documentation that the growth of fast food is due to young adults who were likely to take their children to fast food eateries. More adults are eating away from home because they are working, and those with children have less time to cook at home. Moore et al. (2009) found that his participants in the lowest educational attainment and income categories were more exposed to fast food than participants in the highest categories, which was contrary to our findings. On the other hand, our result was similar to other studies whereby younger groups were more exposed to fast food (Anderson et al., 2011; Moore et al., 2009). This productive age group of working people consumed fast food more, as they have less time to cook at home. Sociability was the main reason our sample chose to consume fast food as it might influence the age characteristics of our study population, a majority of who were young people. According to Astuti & Hanan (2011), the preferences for dining places are influenced by the social class of people. We also discovered in this present study that most meals were purchased during dinner. Since most of our participants frequented the fast food restaurant with family members, this might be a means of socializing with members of the family. Astuti & Hanan (2011) also stressed that the atmosphere of the fast food outlets made it popular. Simovska-Jarevska et al. (2012) reported that the price was one of the key determinants of customer satisfaction. On the contrary, our study found otherwise; very few stated their reason for choosing fast food was due to the price, even though it is considered cheap and affordable. The second most common reason was quickness. Mirroring Ho Voo's (2011) study, he found that the impact of service was greater among fast food customers. Also, Anderson et al. (2011) stated that convenience was the predominant cause of frequenting fast food outlets. Even though a large proportion of the participants self-reported that they ever read the nutritional information, only 30% ever used the nutritional information. Similarly, Anderson et al. (2011) also reported that only 16% ever used nutritional information when ordering, although hypothetically 68% of adults would choose healthier fast food items when available. Nevertheless, we are uncertain whether those who ever read truly understood the information. They reported 'ever read nutritional information' might be due to the increasing number of people being health-conscious and concerned over the types of food they consume (Din et al., 2012). These present study findings are limited to our study population. We acknowledge the potential of recalled bias experienced by the participants that may decrease the validity of our study findings. We hypothesized that the prevalence of obesity increase as does the frequency of fast food consumption. However, the findings from this study did not indicate such trend. The

prevalence of obesity did not increase consistently with the frequency of fast food consumption, unlike in the Anderson et al. (2011) study. Also, we did not investigate for confounders of obesity, such as the amount of physical activities performed and fibre intake. However, we sampled a wide range of age demographic, and this is one of the study's strengths. Also, we investigated the pattern of fast food consumption, which was limited in the local literature. The hectic lifestyle in urban cities has developed the habit of fast food consumption. Given this growing habit, the government has advised fast food operators to provide nutritional information in its menu so that consumers are aware of the contents (Habib et al., 2011). However, this study showed that the efforts did not reach the community in our study population. Thus, a more robust approach for health promotion on the nutritional intake should be initiated. We also recommend that nutritional education should be given continuously to mothers, as it will in turn benefit all the family members. It is important to emphasize health education using the media (Simovska-Jarevska et al., 2012) since mass media has the power to reach a larger audience and highly accessed by young people. There should be a radical change in the food market and food production, including availability of wholesome foods and slowly eliminating the regularity of unhealthy fast food intake. Immediate action should be taken to advocate healthy eating choices to the people, and there is a vital need to initiate an investigation into the long-term health effects of unhealthy fast food consumption within the Malaysian population. The findings can enable the development of a better evidenced-based intervention, with support from various agencies for the betterment of future generations of Malaysian. In conclusion, the prevalence of respondents who consumed fast food at least once a week was 17.4%. However, most of them reported having fast food at least once a month. The frequency of consuming fast food was not significantly associated with obesity. Those who were younger, females had no children and obtained tertiary education consumed fast food more often than others.

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