

Prevalence of Body Weight Status and Sedentary Lifestyle among Malaysian Youth at Public Secondary Schools in Selangor

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Introduction

Overweight and obesity have over the years been two major concerns in relation to Malaysians' health. Having been on the rise both locally and internationally, it is now unsurprisingly considered as one of the most dangerous threats in the 21st century, as far as public health is concerned (Morgen & Sorensen, 2014). Convincing evidences presented by means of recent studies have indicated that a person's obesity along with a wide range of other health risks can be traced back to his or her childhood obesity which is believed to have been accumulated since the formative stage of childhood (Zainuddin, et al., 2014). In the event of excess body fat gained at the stage of childhood and adolescence going unchecked and therefore persisting into adulthood, the individual concerned may run an increased risk of developing chronic diseases at a later stage in life such as cardiovascular diseases (Hasnain, Singer, Bradlee, & Moore, 2014), type-II diabetes and hypertension (Sung, et al., 2016).

National Health and Morbidity Survey (NHMS) statistics in the year of 2011 indicated two categories of Malaysians namely, 18 years old and above 18 years are suffering from overweight and obesity, respectively (Institute of Public Health, 2011). Despite the studies in Malaysia many of which have widely examined the surrounding issues of overweight and obesity among school-aged children (Zainuddin, et al., 2014) and adults (Tan, Dunn, Samad, & Feisul, 2010), comprehensive looking into such issues concerning individuals belonging to other categories, particularly between adolescence and young adulthood, are of utmost importance, too. Upon closely looking at the large-scale statistical findings from the NHMS, it can be learnt that though overweight and obesity were prevalent health issues among Malaysian youths of both 18 and 19 year old categories 14.1% and 9.9%, respectively, more interestingly, the corresponding rates reportedly rose to 18.1% and 10.8% among young adults of those who were between 20 and 24 years old (Institute of Public Health, 2011).

The extensiveness of obesity in Malaysia is similar to other developing countries. The number of overweight for Malaysian population is 29.1% and obesity is 14% (National Health and Morbidity Survey, 2006). A recent report revealed more serious statistics where 49% of women and 44% of men in Malaysia were found to be obese. Malaysia was also rated as heavyweight at 45.3% of its population, followed by South Korea (33.2%), Pakistan (30.7%) and China (28.3%) (The Star, 2014). Besides being weighed down by obesity, Oxfam International pointed out a striking findings where Malaysia was ranked as the fattest country in Southeast Asia (The Straits Times, 2014). The need to establish a strong healthy society has also been identified by Malaysian policy makers. For example, the former Prime Minister, Tun Dr. Mahathir Mohamad referred to this in his Vision 2020:

“Vision 2020 Creating a psychologically liberated, secure and developed Malaysian society with faith and confidence in itself, justifiably proud of what it is, of what it has accomplished, an robust enough to face all manner of adversity. This Malaysian society must be distinguished by the pursuit of excellence, fully aware of all its potentials, psychologically subservient to none, and respected by the people of other nations” (Mohamad, 1998).

According to the Department of Statistics Malaysia, 2014, the Malaysian population stood at 30 718 729 million comprised of a multi-ethnic and multi-religious number of ethnic groups. Muslims constitute a large majority of the Malaysian population, representing 63.9% of the population on the peninsula and with the remainder consisting of Buddhists 22.53%, Christians 9.2% and Hindus 6.7%. The basic understanding of youth is crucial as most of Malaysian population 30.26 million is comprised of youth 13,880,000 million or 45.88% of it (Indeks Belia Malaysia, 2015). The segregation consisted of 52%, or 7,260,000 of male youth and 48% or 6,620,000 of female youth (Indeks Belia Malaysia, 2015). With the great composition of youth, this means youth are the most important asset and wealth of the country. They hold the key to the country's peace, development and contribute extensively to Malaysian human capital development.

Among the many reasons which merit focus on youth: adolescence and young adulthood age groups is the young individuals at such stages are observed to be the most vulnerable to life-changing decisions. Such decisions may include susceptibility to unhealthy eating habits,

substance abuse, inter-personal and psychological problems, physical inactivity, and other undesirable lifestyle elements (Gan, Mohd, Zalilah, & Hazizi, 2011). The promotion of healthy lifestyle interventions at an early stage in their lives may therefore help prevent running the risks of lifestyle-related illnesses for the rest of their lives.

Notably, adolescence is the stage at which individuals by and large undergo transition and therefore they may gain more independence and greater freedom in relation to decision making, especially with regards to health behaviours. It is also noteworthy that at such transition adolescents may need to begin to deal with many influences which may have wider ramifications on their lifestyle choices which may include intrapersonal relations and influences as well as physical environmental and societal aspects including social and cultural norms, mass media, marketing and advertising (Story, Neumark-Sztainer, & French, 2002). Besides, adolescence is also considered a difficult stage for many individuals and interestingly, those who are of low Socio Economic Status (SES) and ethnic minority backgrounds may have to encounter unique challenges which are not faced by other groups. Specifically, individuals who are of low SES backgrounds may experience comparatively higher levels of environmental challenges than those belonging to higher SES groups, and worse still, they may have only fewer psychosocial resources made available for them to cope with (Marmot & Wilkinson, 2001).

Methods

Sample Size

This study was conducted among Malaysian youth where the total population is 1,373 million (Department of Statistics Malaysia, 2014). The participants were recruited based cluster sampling method. Out of the total population, researcher will utilize Raosoft sample size calculator based on 95% confident interval which means the targeted number of participants require are at least 385 youth.

Sampling Process

Sampling process is referring to units of selection from a population of interest to be studied so that by studying the sample the results can be generalised and infer back to the population from which the participants were chosen. Sampling begins with precisely defining the target population

which is public secondary school children. The data population of youth was obtained with permission from Institute for Youth Research Malaysia (IYRES). Based on the 2014 statistics, data of the targeted population comprised of 13,882,400 youth. The present study accentuated to the Malaysian's population specifically on Malaysian youth in public secondary schools with geographical boundaries focal point in Selangor where it consists of 2,867,400 youth. Based on these figures, it encompassed 278,200 male youth and 264,000 female youth between 15 to 20 years old. Occupying the sample size determination by Krejcie and Morgan (1970) and confirmed through Raosoft Sample Size Calculator, N=385 sample size were needed by considering 95% of confidence interval.

The sampling process was further progressed by gathering all of public secondary schools in Selangor. Researcher then segregated the schools based on 10 areas of locality according to *Pejabat Pendidikan Daerah Negeri Selangor* with 217 public secondary schools in Selangor registered with Ministry of Education. The researcher further narrowed down the cluster of all the schools according to two zones. At the final stage of sampling process, the number of units of analysis were obtained from from both zone 1 and 2 which equivalent to N=385.

Research Procedures

The research procedures involved six stages from the beginning until the end of the data collection of this study. Initially, the research explained the objectives of the study to the participants as part of the social contract. This is because the researchers are ethically obligated to describe the research procedures clearly, identify any potential risks that might influence individuals' willingness to participate and answer any questions participants have about the research. Secondly, the respondents were required to read the instruction before answering the question as to avoid confusion. The procedure then followed by the questionnaire distributions to the participants by giving ample time for them to answer. Upon the return of the survey instruments data analysis for both descriptive and inferential statistics were carried out and reported.

Measures

Demographic Profiles

Two demographic items will be included in the survey. Items will assess participants' gender and ethnicity.

Anthropometric Measurements

Body measurements such as weight and height will be collected in this study to assess BMI of the participants. BMI of the Asians cut-off will be <18.5 (underweight), 18.5 - 23.9 (healthy weight range), 24 - 26.9 (overweight) and >27 (obese).

Sedentary Behaviour

Measured by using media use sedentary behaviour subscale adapted from Project EAT II Questionnaire by Neumark-Sztainer , et al. (2006). Participants indicated the duration spent for each activities listed on an average weekday with the following activities) watching television (TV) or videos, reading, doing homework, studying, using a computer (for fun, Facebook and others.). Response categories were assigned the values 0, 0.5, 1, 2, 3, 4, and 6 hours per week.

Results

Table 1: Demographic Profiles of the Respondents

	Female n(%)	Male n(%)	Frequency
Gender	195	190	385
Total	50.6%	49.4%	100%
Ethnicity			
Malay	134 (68.7%)	125 (65.8%)	259 (67.3%)
Chinese	31 (15.9%)	27 (14.2%)	58 (15.1%)
Indian	21 (10.8%)	36 (18.9%)	57 (14.8%)
Sabah Natives	2 (1.0%)	1 (0.5%)	3 (0.8%)
Sarawak Natives	0 (0%)	1 (0.5%)	1 (0.3%)
Others	7 (3.6%)	0 (0%)	7 (1.8%)
Total	195	190	385

Table 1 shows the demographic profile of respondents based on gender and ethnicity. It shows that the female respondents are higher than the male respondents which n=195 equal to 50.6% are male and n=190 equal to 49.4%. This means the total amount of respondents is N=385 and equal to 100% respondents. The table also shows the number of respondents from the provided ethnicities. There are five ethnicities listed with one specified as other. The highest frequencies are Malay Ethnicity with n=259 equal to 67.3%, followed by Chinese Ethnicity n=58 equal to 15.1%, Indian Ethnicity n=57 equal to 14.8% and the lowest frequencies of respondent are from Sarawak Ethnicity which comprised of n=1 equal to 0.3%.

Table 2: Prevalence of Body Weight Status

Body Mass Index	N	Mean	Std. D	Min.	Max.
	385	30.62	20.07	10.31	263.89
	Female n(%)	Male n(%)	Frequency Percentage %		
Underweight	62 (31.8%)	67 (35.3%)	129 (33.5%)		
Normal weight	76 (39.0%)	65 (34.2%)	141 (36.6%)		
Overweight	36 (18.5%)	21 (11.1%)	57 (14.8%)		
Obese1	19 (9.7%)	24 (12.6%)	43 (11.2%)		
Obese2	1 (0.5%)	8 (4.2%)	9 (2.3%)		
Obese3	1 (0.5%)	5 (2.6%)	6 (1.6%)		
Total	195	190	385		

Table 2 represents the prevalence of body weight status of respondents N=385. From the table it indicates in which n=57 (14.8%) of respondents were overweight where it comprised of n=36, female and n=21, male. Furthermore, n=43 (11.2%) of respondents were reported to be obese type 1, followed by n=9 (2.3%) obese type 2 and n=6 (1.6%) were categorised as obese type 3.

Table 3: Frequency Analyses of Sedentary Behaviour based on Duration

	Duration	Female n(%)	Male n(%)	Frequency Percentage %
Watching TV & videos	0 hr	3 (1.5%)	5 (2.6%)	8 (2.1%)
	1/2 hr	34 (17.4%)	26 (13.7%)	60 (15.6%)
	1 hr	32 (16.4%)	33 (17.4%)	65 (16.9%)
	2 hrs	50 (25.6%)	39 (20.5%)	89 (23.1%)
	3 hrs	32 (16.4%)	39 (20.5%)	71 (18.4%)
	4 hrs	19 (9.7%)	20 (10.5%)	39 (10.1%)
	5 + hrs	25 (12.8%)	28 (14.7%)	53 (13.8%)
Total		190	195	385

Using a computer (for fun, Facebook)	0 hr	15 (7.7%)	17 (8.9%)	32 (8.3%)
	1/2 hr	31 (15.9%)	31 (16.3%)	62 (16.1%)
	1 hr	40 (20.5%)	32 (16.8%)	72 (18.7%)
	2 hrs	36	29	65

		(18.5%)	(15.3%)	(16.9%)
	3 hrs	29	32	61
		(14.9%)	(7.5%)	(15.8%)
	4 hrs	12	15	27
		(6.2%)	(7.9%)	(7.0%)
	5 + hrs	32	34	66
		(16.4%)	(17.9%)	(17.1%)
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Total		195	190	385
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Reading & doing homework/studying	0 hr	2	3	5
		(1.0%)	(1.6%)	(1.3%)
	1/2 hr	31	31	62
		(15.9%)	(16.3%)	(16.1%)
	1 hr	43	32	75
		(22.1%)	(16.8%)	(19.5%)
	2 hrs	56	61	117
		(28.7%)	(32.1%)	(30.4%)
	3 hrs	34	37	71
		(17.4%)	(19.5%)	(18.4%)
	4 hrs	15	14	29
		(7.7%)	(7.4%)	(7.5%)
	5 + hrs	14	12	26
		(7.2%)	(6.3%)	(6.8%)
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Total		190	195	385
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Based on Table 3, it represent the respondents duration spent on sedentary behaviour on weekly basis. The sedentary lifestyle were divided to three types: watching TV and videos, using a computer for fun website surfing, reading and doing homework or studying. The results indicate in which most of the respondents n=89 (23.1%) spent at least 2 hours per day to watch TV and videos. Respondents were also spent at least 1 hour per day for fun website surfing n=72 (18.7%)

and also minimum of 2 hours spent for reading and studying n=117(30.4%). The inactive duration for majority of the respondents due to sedentary lifestyle were calculated as 6 hours per day.

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