EATING BEHAVIOUR AND LIFESTYLE AMONG SCHOOL OF HEALTH SCIENCES STUDENTS OF UNIVERSITI SAINS MALAYSIA

by

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ABBREVIATIONS

USM	-	Universiti Sains Malaysia
PPSK	-	Pusat Pengajian Sains Kesihatan
BMI	-	Body Mass Index

EATING BEHAVIOUR AND LIFESTYLE AMONG SCHOOL OF HEALTH SCIENCES STUDENTS OF UNIVERSITI SAINS MALAYSIA

ABSTRACT

Eating habits and lifestyle factors are among the main determinants of body weight status. Students are among people that having problem in healthy eating habits and lifestyles. The purpose of this study were to determine the relationship between parents' income, eating habits, lifestyle factors and body weight status among School of Health Sciences students of USM. This study used cross sectional and quantitative design using random stratified sampling method. A total of 204 respondents were involved in this study. The questionnaire which adapted from Ayranci et al. 2010 including items related to sociodemographic characteristics, eating habits and lifestyle factors. The data were evaluated using percentage ratios, correlation tests and one-way ANOVA test. SPSS version 20.0 was used and results were considered significant at $p < 0.05$. Students of normal weight were 71.1%, 13.7% were underweight while 15.2% were overweight. Percentage of students who had good eating habits was 83.3% while lifestyle was moderately scored (43.3%). Significant correlation was found between eating habits and body weight status using Pearson correlation ($p = 0.004$). Correlation between lifestyle factors and body weight status was also significant using Pearson correlation ($p < 0.001$). There was a significant mean difference between parents' income and body weight status ($p = 0.003$). This study suggests that health care providers should take a prevention step to improve the awareness of the students regarding knowledge for healthy eating habits and lifestyles.

TABIAT PEMAKANAN DAN GAYA HIDUP DALAM KALANGAN PELAJAR PUSAT PENGAJIAN SAINS KESIHATAN UNIVERSITI SAINS MALAYSIA

ABSTRAK

Tabiat pemakanan dan gaya hidup merupakan antara penentu utama status berat badan. Pelajar merupakan antara yang bermasalah dalam tabiat pemakanan dan gaya hidup secara sihat. Tujuan kajian ini adalah untuk menentukan kaitan di antara pendapatan ibubapa, tabiat pemakanan, gaya hidup dan status berat badan di kalangan pelajar PPSK USM. Kajian ini menggunakan reka bentuk kajian kerat lintang dan persampelan rawak berlapis. Seramai 204 orang responden terlibat dalam kajian ini. Borang kajiselidik yang diadaptasi daripada Ayranci et al. 2010 termasuklah item berkaitan dengan karakteristik sosiodemografi, tabiat pemakanan dan gaya hidup. Data dinilai menggunakan peratusan, ujian perhubungan dan ujian *one-way ANOVA*. SPSS versi 20.0 telah digunakan dan keputusan dianggap signifikan apabila $p < 0.05$. Pelajar mempunyai berat badan normal adalah sebanyak 71.1%, 13.7% kurang berat badan manakala 15.2% mempunyai berat badan berlebihan daripada normal. Peratusan pelajar mempunyai tabiat pemakanan yang baik adalah 83.3% manakala gaya hidup hanya berada pada paras sederhana (43.3%). Hubungan signifikan telah ditemui antara tabiat pemakanan dan status berat badan menggunakan *Pearson correlation* ($p = 0.004$). Hubungan antara gaya hidup dan status berat badan juga signifikan menggunakan *Pearson correlation* ($p < 0.001$). Terdapat perbezaan signifikan antara pendapatan ibubapa dan status berat badan ($p = 0.003$). Kajian ini mencadangkan supaya pemberi khidmat kesihatan mengambil langkah

pencegahan untuk meningkatkan kesedaran pelajar tentang pengetahuan dan tabiat pemakanan serta gaya hidup yang sihat.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Health status determination often being related to eating habits and lifestyle factors. Physical appearance of an individual can tell either he or she is living healthily or not. As a student, transition into university life can make someone experience poor eating habits which a major health concern (Nelson, Story, Larson, Neumark-Sztainer & Style 2008). Having limited time to get healthy food, stressed out, peer pressure and availability of fast food everywhere had influenced student's eating habits. Limitation of time, assignments, addiction to online networking and tiredness also lead students to sedentary lifestyle. Most of them just sit in front of the computer without really being outdoor or doing exercises. These eating habits and lifestyle factors can give effect to student's body weight status.

Body weight status is a major concern for everybody. Weight can be defined as the vertical force exerted by a mass as a result of gravity (Dictionary.com). Body weight is the weight of a person's body. Status is a social or professional position, condition, or standing to which varying degrees of responsibility, privilege, and esteem are attached. So body weight status can be defined as somebody's stand on his or her body weight. This has to do with the eating habits of the person and also the lifestyle factors that can contribute to body weight either increasing or decreasing or static.

Study of Ayranci, Erenoglu & Son (2010) had been conducted in western cultures about eating habits and lifestyle factors which give effect on the students' performance either in schools or colleges. The study had shown that there are many factors that affect students' body weight status such as breakfast taking, food availability, food choices, nutritional information and economic condition. Their eating habits and lifestyle factors also affected by demographic data such as their parents' level of education and work, living environment, cultures and body shape preference. Ayranci et al. (2010) stated that male gender had found to be a predictor of overweight or obesity based on BMI of their study. It is different from female gender. It is believe that it is due to girls are more concern about their body weight status in order to be slender. Therefore they prefer to diet and exercise in order to maintain their favorable body weight. Study of Ayranci et al. (2010) also looking into the families' attitude toward their children because these are biological factors, such as changing energy demand and weight change, and sociocultural factors such as availability and price of food and culture. Although study of Ayranci et al. (2010) not revealing any difference, it did show that students whose parents behaved democratically or liberally demonstrated a smaller proportion of obesity compared to those of authoritarian and indifferent parents' attitude toward their children.

There is also study in Malaysia conducted by Ganasegeran, Al-Dubai, Qureshi, Al-abed, Rizal & Aljunid (2012) on eating habits among medical school students. Ganasegeran et al. (2012) found that most of the medical students in their study had healthy eating habits except in frequency of meals, fruit consumption, water intake and consumption of fried food. They also found out that social and psychological factors were important determinants of eating habits among medical students. Thus this study was

going to focus on School of Health Sciences (SoHS) students of Universiti Sains Malaysia (USM) in which their timetable and study period is quite different from the medical students. Usually School of Health Sciences students would involve in theory classes for the first three years and have practical session on the fourth year. First year is quite tough though since all students will have to take the subject of anatomy and physiology of human being which is quite tough plus their newly adaptation towards campus life. For the second and third year School of Health Sciences students can manage their life well and during fourth year it will be quite stressful since they need to fulfill practical session and research. Therefore here in this study was going to see how their campus life and other related factors contribute to eating habits and lifestyle of the School of Health Sciences students.

1.2 Problem Statement

Campus life is a total transition for students from school who need to adapt to new life alone, away from family. The adaptations include lifestyle and eating habits (Rachette, Deusinger, Strube, Highstein & Deusinger 2005). Before this, student was tied with lifestyle arranged by school or family, so it seems to be rather fulfilling the everyday needs and so does eating pattern. Mother will cook at home, and at school they are getting healthy meal from school canteen. Everything changed when they turned into university life. They need to stand on their own and decide to do anything by themselves. The problem is, with the challenging world of studying, most of them did not really concern on their nutrition or getting a healthy lifestyle. They are more prone towards

getting fast food and living a sedentary lifestyle, facing the computers or television most of the time (Ayranci et al. 2010).

Cost of living is keep rising nowadays. Some students also faced with financial problems which forced them to choose only affordable food which is most of them are unhealthy and does not really fulfill the nutritional requirement. They tend to save budget on the expenses of food in order to keep surviving for the whole semester. Therefore fast food and snacks which cost them cheaper and half of the money compared to a well balanced diet seems to be their choices. That is the reason some of them being overweight, and some of them having malnutrition leading to underweight, depending on how they cope with their life. Body mass index (BMI) is a useful and simple index in classifying range of weight. It is defined as weight in kilograms divided by the square of heights in meters (kg/m^2) (WHO 2004). WHO 2004 classified BMI of adult Asian as underweight if low than 18.5 reading, normal weight (18.5 - 22.9), and overweight more than 23 reading.

The theoretical framework underlying this study will be derived from Ajzen and Fishbein's (1980) Theory of Reasoned Action. This theory then had been developed further into Theory of Planned Behavior. The Theory of Planned Behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior. In addition to measuring attitudes toward the behavior, one also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions

of their ability to perform a given behavior. These predictors lead to intention. A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question.

1.3 Research Objectives

1.3.1 General Objective:

The general objective of this study was to determine the relationship between eating behavior, lifestyle factors and body weight status among School of Health Sciences students of USM.

1.3.2 Specific Objectives

1. To identify eating habits and lifestyles of School of Health Sciences students in USM.
2. To determine the relationship between eating behavior and body weight status among School of Health Sciences students in USM.
3. To determine the relationship between lifestyle factors and body weight status among School of Health Sciences students in USM.

1.4 Research Questions

1. What are the eating behavior and lifestyles of School of Health Sciences students in USM?
2. Is there a relationship between eating behavior and body weight status among School of Health Sciences students in USM?

3. Is there a relationship between lifestyle and body weight status among School of Health Sciences students in USM?

1.5 Research Hypothesis

First Null hypothesis (Ho) and Alternative hypothesis (H_A)

Ho: There is no significant relationship between eating behavior and students' weight among School of Health Sciences students in USM.

H_A: There is a significant relationship between eating behavior and students' weight among School of Health Sciences students in USM

Second Null hypothesis (Ho) and Alternative hypothesis (H_A)

Ho: There is no significant relationship between lifestyle and students' weight among School of Health Sciences students in USM.

H_A: There is a significant relationship between lifestyle and students' weight among School of Health Sciences students in USM.

Third Null hypothesis (Ho) and Alternative hypothesis (H_A)

Ho: There is no significant difference between parents' income and students' weight among School of Health Sciences students in USM.

H_A: There is a significant difference between parents' income and students' weight among School of Health Sciences students in USM.

1.6 Definition of Terms (Conceptual/ Operational)

1.6.1 Eating habits

Eating habits can be define as what and how people eat, their selection of food, their way of getting food (www.eatinghabits.org) . In every part of world, there always an influence of environment, religion, economic and culture on eating habits of habitants. School of Health Sciences students, like other people in this country eat variety of food which is mainly typical Malaysian food such as nasi, *roti canai*, burgers, fruits and vegetables. In this study, eating habits will be measured using questionnaire adapted from Ayranci et al. 2010 using the first 26 questions in it that concerning eating habits.

1.6.2 Lifestyles

Lifestyles describe the way people live their lives (Business Dictionary.com). These include behavioral and social issues e.g. smoking, food, nutrition, sedentary lifestyle, alcohol and substance misuse. Students' lifestyle depend on their favorable either active lifestyle or sedentary lifestyle. These lifestyles will be measured using questionnaire adapted also from Ayranci et al. 2010 which the questions involved were questions 27-29.

1.6.3 Body weight status

Body weight is the weight of a person's body (Dictionary.com). Status is a social or professional position, condition, or standing to which varying degrees of responsibility, privilege, and esteem are attached. So body weight status can be defined as somebody's

stand on his or her body weight. Here in School of Health Sciences most students seems to have ideal body weight, some of them are underweight and also a small proportion of them are obese. Body mass index or BMI is a measure of body weight status. In this study, students were asked to fill in their height and weight and the researcher will then calculate the BMI.

1.7 Significance of the study

This study is going to focus on relationship between eating habits and lifestyle factors that will effect on students body weight status. For all we know, students are in transition to adulthood which they need to get enough nutrition and a healthy body in order to give the best to their performance in the university (Ganasegaran et al. 2012). Students need to get regular breakfast consumption for sufficient energy intake in order to overcome fatigue due to busy daily learning schedule (Ganasegaran et al. 2012). Everyday students are going to classes and clinical sessions and in order to perform well, they need to be in their best state of health. Overweight students are at greater risk for many health conditions in the future such as heart disease, hypertension, diabetes and cancer. An ideal body weight can also improve the confidence level to face the society and helps a lot in activity as it make student more competence to study and perform well. It is important to know the prevalence of overweight students to start intervention programs as School of Health Sciences students are health provider-to-be in the future and it is important for them to show good quality in health as a role model to other people in the community.

This study also contributed to early data regarding eating habits and lifestyle of students which more or less can represent the data of the population. This data is crucial

as if students who were educated enough in information regarding eating habits and lifestyle is at worried status of health, actions should be taken to collect the data from the society of which we know comes from variety status of education.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

According to Tur, Puig, Benito & Pons (2004), adolescence is a time of rapid physiologic, psychological, and social development influencing nutrient needs and an individual's ability to supply those needs. Disruptions in the balance between nutrient requirements and intake during adolescence have an effect on health. Adding physical activity such as exercise and sporting also can improve health and promote weight reduction (Avenell, Brown, McGee, Campbell, Grant, Broom, Jung & Smith 2004).

2.2 Review of Literature

2.2.1 Lifestyles

Strien and Koenders (2012) stated that lifestyles factors can be divided into 5 factors which are Sports, Alcohol, Nutrition, Overweight and Smoking (SANOS). In the Netherlands this interventions have been developed in which the SANOS stands for the stimulation of Sports (and physical activity), moderation of Alcohol consumption, Nutrition (stimulating consumption of fruit and vegetables), Overweight reduction (dieting) and stop Smoking programs. This study had shown that the SANOS seems to be associated with general health and energy at work but not in term of weight reduction. Therefore it can be assured that lifestyle factors does improve our energy and general health in a daily life basis but to contribute to weight reduction and reduction of weight

associated health risks, we also need to target in improvement of eating habits. Life style factors had major influence in our life as nowadays we can see that sedentary lifestyle had lead to so much health problem. Increased physical activity, sporting and extra consumption of vegetables and fruit are generally considered to promote health.

Tur et al. (2004) found out that physical activity had been used differently according to gender. In boys there was no association between diet density and physical activity level. However, the positive correlation of girls' physical activity level with dietary fiber and mineral and vitamin intake suggests that health conscious females exercise more and eat a better quality diet. This study concluded that maternal level of education is associated to the quality of diet, which may be useful social indicator for adolescent dietary intake instead of other indicator such as parental job or socioeconomic status.

2.2.2 Eating Behavior

Study of Groth, Fagt & Brondsted (2001) had shown that those with long higher education or medium length higher education had dietary habits most in accordance with the dietary guidelines. It means that the intakes of fruits and vegetables are significantly associated with the educational level of men and women. Early adoption of healthy eating habits may contribute to a lower incidence of disease in adulthood and improved quality of life in later age (Callabero, 2001).

Neumark-Sztainer, Hannan, Story, Croll & Petry (2003) had found that frequency of family meals was positively associated with intakes of fruits, vegetables, grains, and

calcium-rich foods, and negatively associated with soft drink intake. Meal frequency was not associated with snack frequency. The findings of this study also demonstrated strong associations between family meal patterns and dietary intake: youths consuming more meals with their families reported healthier dietary intakes.

Breakfast consumption is also a factor that may contribute to a higher or lower body weight. A study comparison between Finnish and Greek adolescents had showed that breakfast consumption is associated with a lower level of overweight or obesity among boys in both cohorts, but no association was found among girls. Veltsista, Laitinen, Sovio, Roma, Jarvelin & Bakoula (2010) stated that father's BMI, weight control, and fear of getting fat partially mediated the association of breakfast consumption and overweight in Finnish adolescent boys, but not in Greeks, suggest that cultural differences are likely to interfere.

King, Mohl, Bernard & Vidourek (2007) found out that more than half of the students in their study reporting time and convenience as the most common barriers to healthy eating that they experience. Students consistently report time as one of the most common barriers to healthy eating, and as reported by Neumark-Sztainer, Story, Perry & Casey (1999) students may want to sleep longer in the morning instead of taking time to eat or prepare breakfast, do not want to wait in a long lunch line, and prefer eating at fast food establishments because the food is served quickly.

2.2.3 BMI status

A study done in Turkey reported that 25.7% of the subjects were underweight (Sanlier & Unusan, 2007). Possible explanation for this is due to students may unable to find enough food. One of the most influential factors that affect their food intake was food availability. Some of them may get used to parents preparing the food for them at home and when it came to campus life, they had to find the food themselves. It could have impact to them and affected their food consumption (Ayranci et al. 2010). The percentage for overweight student was 15.2%.

This percentage was quite low as compared to foreign countries studies. A study done by Mohammadpour-Ahranjani, Rashidi, Karandish, Eshraghian, & Kalantari (2004) in Tehran showed that the percentage of overweight for the samples of student was 21.1% but if comparing to study done by Ayranci et al. 2010, they showed that the prevalence of overweight in their study was only 4.4%. This might be due the differences in cultural, environment and type of food available in each country.

2.2.4 Parents Income

According to a study done in United States of America by Truong & Sturm 2005, they had study on difference in body mass index trend across relative-income groups. From the results obtained they confirmed that for every year, BMIs were higher for the lowest-income group than for the highest-income group. They found out that from 1986 to 1991, the highest-income group gained slightly less weight than the lowest-income group, but the 2 groups exhibited parallel trends from 1992 to 2002, and they found no

statistically significant difference in increased BMI between the 2 groups. The BMI gap between the lowest-income and highest-income groups is approximately 7 years; that is, the average BMI of the highest income group will reach the current average BMI of the lowest-income group in 7 years. From 1992 to 2002 they found out that the lowest-income group gaining more weight than the highest-income group.

2.3 Theoretical / Conceptual Framework

2.3.1 Theoretical framework

The theoretical framework underlying this study was derived from Ajzen and Fishbein's (1980) Theory of Reasoned Action. This theory then had been developed further into Theory of Planned Behavior since theory of reasoned action only focus on voluntary behavior and not perceived behavior.

The Theory of Planned Behavior is a theory which predicts deliberate behavior, because behavior can be deliberative and planned. The Theory of Planned Behavior is probably one of the best studied and applied theories. For the past two decades, the Theory of Planned Behavior has been widely applied and extended to studies on individual behavior, especially in the prediction of individual's intention to behave and the actual behavior. Since then, the model has been used in many areas of behavior research. For example, it has been applied extensively in the study of healthy or unhealthy behaviors, such as binge drinking, exercise, or smoking.

A major assumption underlying the theory is that people are usually rational and will make predictable decision in well-defined circumstances. The model is predicated on the assumption that intention to act is the most immediate determinant of behavior, and all other factors influencing behavior will be mediated to behavioral intention.

Figure below shows how behavioral intentions are thought to be influenced by attitude towards behaviors and subjective norms. Attitude, in this case are determined by the belief that a desire outcome will occur if a particular behavior is followed, and the outcome will be beneficial to health. By this case that desire may be ideal weight of students and particular behavior could be healthy eating habits and lifestyle activity that may improve the weight itself.

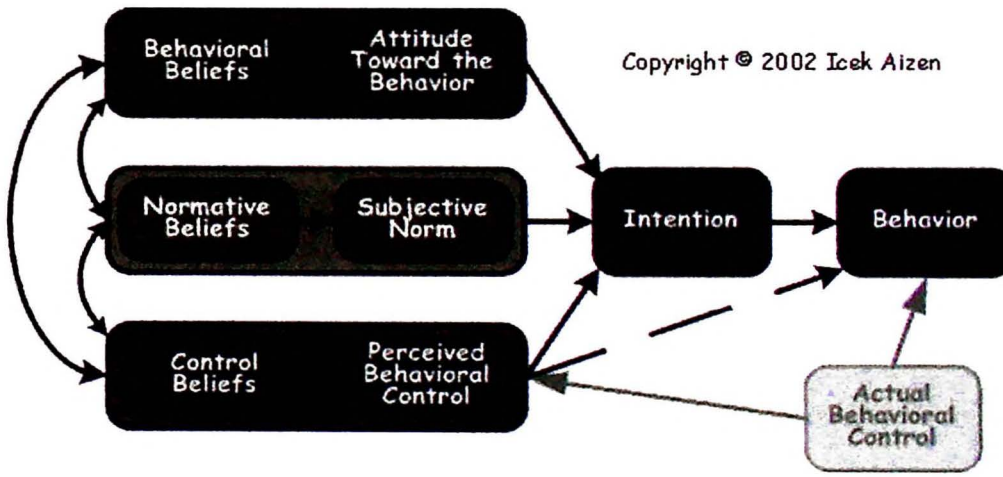

Figure 2.1 Major elements of the Theory of Planned Behavior

Subjective norms in this case related to a person's beliefs about what other people think he or she could do, and by an individual's motivation to comply with those other people's wishes. These social influences vary in strength related to the degree to which the individual values social approval by a particular group.

Intentions to act are thus jointly determined by attitudes and subjective norms. Simply, the theory predicts that a person is most likely to intend to adopt, maintain or change a behavior if that person believe the behavior will benefit their health, is socially desirable and feels social pressure to behave in that way. According to the theory, if these believe and social pressures are strong enough, this intention to behave will subsequently be transferred into behavior.

Perceived behavioral control is the third influence on behavioral intentions. This recognizes that a person's intentions will become significantly greater if they feel they have greater personal control over a behavior.

2.3.2 Conceptual framework of the study

The Theory of Planned Behavior by Ajzen and Fishbein can explain the eating habits and lifestyle factors among School of Health Sciences students. Attitude towards behavior here is attitude towards healthy eating habits and lifestyle. Subjective norms here are students' belief on what he or she could do to make themselves acceptable among friends. It depends on surrounding and circumstances. For example if their friends love sporting, they most likely to consider sporting too to be valued by their friends.

Perceived behavioral control refer to power of the students themselves to control their life either to eat healthily and get a healthy lifestyle or not.

Conceptual framework

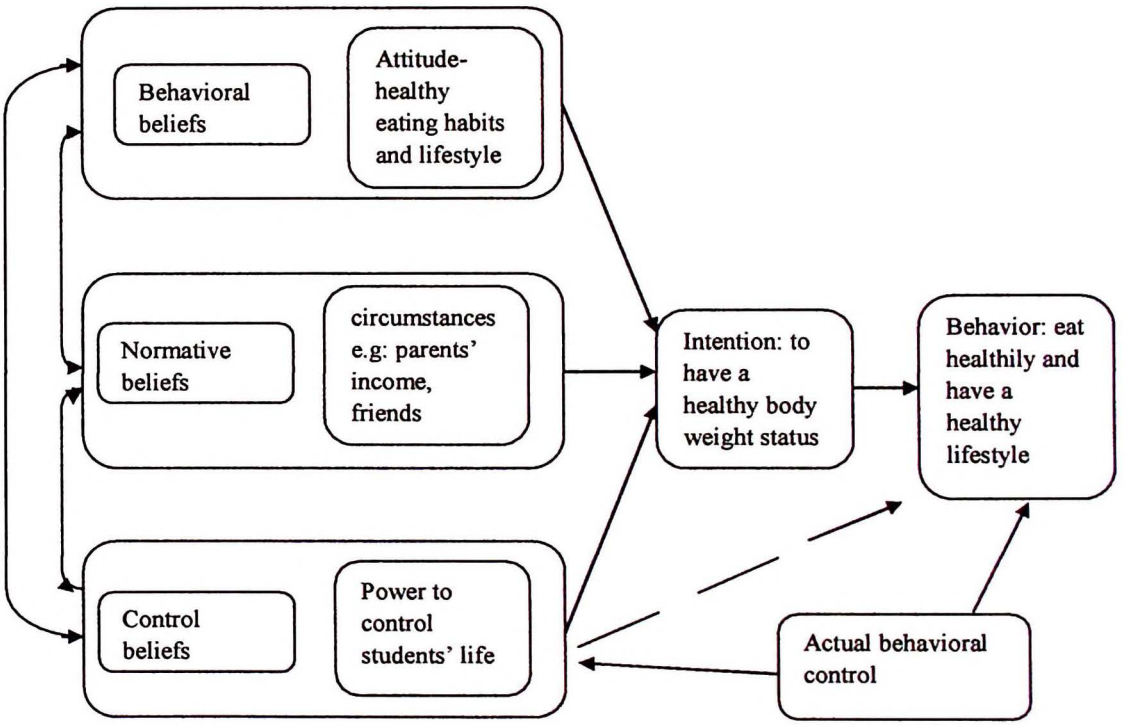

Figure 2.2 Conceptual framework to study adapted from the Theory of Planned Behavior.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This study used cross sectional quantitative research design. For this study, it might be going to determine whether there was significance relationship between eating habits, lifestyle factors and parents' income towards School of Health Sciences students' body weight status. Thus, School of Health Sciences students became respondents in this study. The self-administered questionnaire was used in order to collect data.

3.2 Population and Setting

Study was focused on undergraduate School of Health Sciences students from Year 1 until Year 4. Thus, the population of study was School of Health Sciences students. This study setting was conducted in School of Health Science in USMKK. Total population for degree courses in School of Health Sciences from year 1 until year 4 was 1002 students. In table 3.1 are listed the totals of students from each course in the School of Health Sciences, Universiti Sains Malaysia Health Campus.

Table 3.1 Number of degree students in School of Health Sciences

Courses	Total number of students
Audiology	58
Biomedicine	120
Dietetics	108
Nursing	148
Forensic Science	128
Sports Science	71
Medical Radiation	106
Speech Pathology	48
Nutrition	119
Environmental and Occupational Health	96
Total students	**1002**

3.3 Sampling Plan

3.3.1 Sample Size

Sample was selected randomly from School of Health Sciences students who were from Year 1 until Year 4 who fulfilled the inclusion and exclusion criteria as stated.

3.3.2 Sampling Method

The random stratified sampling method was used in this study. Since School of Health Sciences consist of 11 courses, a number of respondents from each course were selected equally which was equal to nine respondents per each courses for each year. Random stratified sampling was chosen because there were different courses in School of Health Sciences and this study was going to be fair in selecting the sample from each course.

Inclusion and Exclusion Criteria

. The respondents that met the inclusion criteria set by this study were included in this research. Meanwhile, respondents who were in the group of exclusion criteria were excluded.

Inclusion Criteria

- Undergraduate School of Health Sciences students from Year 1 until Year 4

- Aged from 19 years old until 25 years old
- Students who understood Malay or English language
- Willing to participate in this study

Exclusion Criteria

- Medical students, dental students, post graduate students or other students who were not students of School of Health Sciences.
- Diploma students of nursing
- Aged 26 years old and above
- Refused to participate in this study

3.3.3 Sampling Size

This study was conducted among School of Health Sciences students from Year 1 until Year 4. The current total students of School of Health Sciences minus diploma nursing students were 1002. Therefore here 1002 students were presented the total population.

In order to calculate the sample size (n) needed in this research, the Raosoff formula had been used. By setting the margin error accepted is 5% and confidence level at 95%, the sample size obtained was 295 students (n=295). However, 10% dropout rate was added to the calculated sample size. So the total number of sample in this study was:

n = 278 students + 10% dropout

= 278 + 28

= 306 students would became respondent in this research

In this study researcher only abled to obtain 204 respondents but already included all proggrammes, which was less than the total expected number of sample for this study. The main reason was due to lack of cooperation between students especially year 4 students who were busy with assignments and hardly to get appointment to involve in this study.

3.4 Variables

3.4.1 Variables measurement

Independent Variables: Eating behavior, lifestyle factors and parents' income

All the variables data of independent variables was collected through self-administered questionnaire that involved socio-demographic data such as student's age, weight, height, their parents' incomes, the number of daily main meals they consumed, whether they had ever dieted, whether they had sufficient information on diet, and the sources of nutritional information that they received. All the data was filled out by the respondents themselves.

The total score for eating behavior were 52. It then was categorized to low, moderate and good eating behavior. Range of eating behavior of 0-17 was scored as low;

18-34 was scored as moderate and 35-52 was scored as good eating behavior. Range of lifestyle factors of 0-2 was scored as low, 3-4 as moderate and 5-6 as good lifestyle.

Dependent Variables: body weight status

For the determination of body weight status either normal, underweight or overweight, a body mass index (BMI) was used. Body mass index (BMI) is a useful and simple index in classifying range of weight. It is defined as weight in kilograms divided by the square of heights in meters (kg/m^2) (WHO 2004). Students with BMI values that corresponds with adult Asian BMI that was lower than $18.5kg/m^2$ is classified as underweight, students with BMI values that corresponds with adult Asian BMI in between $18.5kg/m^2$ to $22.9kg/m^2$ was under normal weight and students with BMI values that corresponds with adult Asian BMI of more than $23kg/m^2$ was classified as overweight (WHO 2004).

Table 3.2 Value of BMI (kg/m^2)

Low	<18.5
Normal	18.5-22.9
Overweight	>23

3.5 Instrumentation

In this study, eating behavior and lifestyle factors that influence School of Health Sciences students' body weight status was conducted using self-administered questionnaire formulated by Ayranci et al. 2010, filled out by students. These questionnaires consist of two parts. The first part consists of demographic data while the second part is questions related to eating behaviors and lifestyle factors.

3.5.1 Instruments

The questionnaires were adapted from Ayranci et al. 2010 and have two parts. Part A consists of demographic data and here this study was focusing on the height and weight. Height will be measured in meter and weight will be measured in kilogram to get the BMI value. Body mass index (BMI) is defined as weight in kilograms divided by the square of heights in meters (kg/m^2). Part B had 29 questions in it. It is concerning diet, eating behavior and lifestyle factors of students adapted from Ayranci et al. 2010. Item 1-26 concerning on eating behavior. . Item 27-29 concerning lifestyle factors. The format of the answers used 3 points Likert-scale. They are either always, sometimes or never. Never will be scored as 0, sometimes will be scored as 1 and always will be scored as 2.

3.5.2 Translation of Instrument

The instrument was originally in English version but the samples in this study would be mainly Malay students. This instrument was modified in Question 8. The