

AWARENESS ON THE IMPACT OF INSTANT NOODLES CONSUMPTIONS
AMONG UNDERGRADUATE STUDENTS IN HEALTH CAMPUS, USM

by

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TABLE OF CONTENT

DECLARATION	II
CERTIFICATE	III
ACKNOWLEDGEMENTS	IV
TABLE OF CONTENT	V
LIST OF TABLES	VIII
LIST OF FIGURES	IX
ABSTRACT	X
ABSTRAK.....	XI
Chapter 1	1
1.1 Background of Study	1
1.2 Problems Statement	4
1.3 Research Objectives	6
1.4 Research Questions	6
1.5 Hypothesis	7
1.6 Definition of Operational Terms	7
1.7 Significance of the Study.....	8
Chapter 2	9
2.1 Introduction	9
2.2 Review of literature	9
2.2.1 Prevalence of instant noodle consumption	9
2.2.2 The associated factors of instant noodle consumption	10
2.2.3 The impact of instant noodles intake to the consumer.....	11
2.2.4 Awareness of the impact of heavy instant noodle consumption.....	12
2.3 Theoretical and Conceptual Framework	13
Chapter 3	16
3.1 Research Design	16
3.2 Population and Setting.....	16
3.3 Sampling Plan.....	16
3.3.1 Sample	16

3.3.2 Sampling Method.....	17
3.3.3 Sampling Size	18
3.4 Variables.....	19
3.4.1 Variables Measurement	19
3.5 Instrumentation.....	19
3.5.1 Instrument	19
3.5.2 Validity and Reliability.....	21
3.6 Ethical Considerations.....	21
3.7 Data Collection Plan.....	22
3.8 Data Analysis.....	24
Chapter 4	25
Data Analysis and Results.....	25
4.1 Introduction	25
4.2 Socio-demographic Characteristics	26
4.3 Health History	27
4.3.1 Status of Menstrual Periods.	27
4.3.2 Medical Problem.....	27
4.3.3 Medication Intake	28
4.3.4 Body Mass Index (BMI)	28
4.4 Behaviour towards Instant Noodles Consumption	29
4.4.1 Instant Noodle of favourite brand.....	29
4.4.2 Instant Noodles Consumption.....	29
4.4.3 Quantity of Instant Noodles Consumption	30
4.4.4 Common Time of Instant Noodle Consumption.....	30
4.4.5 Frequency of Buying Instant Noodles	31
4.4.6 The Impact of Instant Noodles Consumption.....	31
4.5 Factor Associated to the Consumption of Instant Noodles.	32
4.6 Awareness Level on the Impact of Heavy Instant Noodle Consumption	34
CHAPTER 5.....	35
5.1 Introduction	35
5.2 Prevalence of Instant Noodles Consumption	35
5.3 Association between Selected Socio-demographic data (Gender, Race, Family Income and Parental Attention) and Instant Noodle Consumption.....	36
5.3.1 Gender and Instant Noodle Consumption.....	36

5.3.2 Race and Instant Noodle Consumption	37
5.3.3 Family Income and Instant Noodle Consumption	37
5.3.4 Parental Attention and Instant Noodle Consumption	38
5.4 Association between Health History and Instant Noodle Consumption	38
5.4.1 Menstrual Period and Instant Noodle Consumption.....	38
5.4.2 Body Mass Index (BMI) and Instant Noodle Consumption.....	39
5.5 Impact of Instant Noodle Consumption on Health.....	40
5.6 Awareness Level on Impact of Instant Noodles Consumption	41
5.7 Strength and Limitation of Study	41
Chapter 6	43
6.1 Introduction	43
6.2 Summary of the Study Findings	43
6.3 Implication and Recommendation.....	43
6.3.1 Implication to Nursing Practice	43
6.3.2 Implication to Nursing Education.....	44
6.3.3 Recommendation for Future Research	44
6.4 Conclusion.....	45
References	46
Appendices	50
Appendix I: Questionnaire	50
Appendix II: Research information – Participant.....	55
Appendix III: Participant Information and Consent Form	58
Appendix IV: Gantt Chart	59
Appendix V: Permission from Author	60
Appendix VI: Permission Letter Conduct Research	61
Appendix VII: Ethical Approval	63

LIST OF TABLES

Table 4.1	Frequency and Percentage of Socio-demographic Characteristics of Respondents (n=232)	26
Table 4.2	Descriptive of Respondents on Medication (n=232)	28
Table 4.3	Frequency and Percentage of Instant Noodles Intake (n=232)	29
Table 4.4	Frequency of Buying Instant Noodles (n=232)	31
Table 4.5	Frequency (%) of the Respondent had Symptoms after Consumed Instant Noodle (n=232)	31
Table 4.6	Factor Associated to the Consumption of Instant Noodles (n=232) ..	33
Table 4.7	Awareness Level on the Impact of Heavy Instant Noodle Consumption (n=232)	34

LIST OF FIGURES

Figure 1.1	Global Demand for Instant Noodles	1
Figure 1.2	Indomie Instant Noodle.....	8
Figure 2.2	Theoretical Framework of the Precaution Adoption Model (PAM).....	3
Figure 2.3	Conceptual Framework of PAM.....	13
Figure 3.3	Calculation of Sample Size by G-Power 3.1.9	18
Figure 3.7	Flow Chart of Data Collections	2
Figure 4.1	Respondents from PPSP, PPSG and PPSK of Health Campus, USM (n=232).....	25
Figure 4.2	Respondents' Menstrual Period Status (n=232).....	27
Figure 4.3	Respondents' Medical Problem (n=232).....	27
Figure 4.4	Frequency and Percentage BMI of Respondents (n=232).....	28
Figure 4.5	Favourite Brand (n=232).....	29
Figure 4.6	Percentage of Instant Noodle Consumed by the Respondents Per Intake.....	30
Figure 4.7	Common Time Instant Noodles Consumption (n=232).....	30

AWARENESS ON THE IMPACT OF INSTANT NOODLES CONSUMPTION AMONG UNDERGRADUATE STUDENTS IN HEALTH CAMPUS, UNIVERSITI SAINS MALAYSIA (USM).

ABSTRACT

Instant noodle is a highly processed food that lacks nutritive value. It had consumed by people nowadays due to reasonable price, tasty and easy to serve. Instant noodle consumption become rise and it also have the impact on health. The aim of this study was to determine the prevalence and awareness level on the impact of instant noodles consumption among undergraduate students in health campus, USM. A cross-sectional design was used in this study. Two hundred thirty two (232) students were recruited in this study by cluster random sampling of undergraduate students in health campus, USM from January until February 2016. A self-administered questionnaire was used to collect data. Data was analysed using the Statistical Package for the Social Sciences (SPSS) version 22.0 for windows and Stata software 13. Pearson Chi Square, Fisher's Exact Test and One-way Anova analyses were conducted to explore the association between socio-demographic characteristic, health history and instant noodles consumption. A p value ≤ 0.05 was considered statistically significant. One hundred twenty six respondents (54.3%) reported rare instant noodles consumption with moderate (mean=3.94) awareness level on the impact of instant noodle. 142 of respondent were categorized in normal body mass index (BMI), 20.3% of respondent underweight and 3.4% of respondent were obese. There was a significant association between gender and parental attention with prevalence of instant noodles consumption. Burning sensation on stomach (23.7%), bloating and irregular bowel movement (23.3%) and headache (18.1%) were the symptoms presented by respondents after consumed instant noodle. This study revealed the prevalence and awareness on the impact instant noodles consumption among students in health campus was moderate. The findings of the present study indicate a need for health education and promotion on impact of instant noodle to health and healthy nutrition to improve understanding about impact of instant noodles to health committee and public

KESEDARAN TENTANG KESAN PENGAMBILAN MI SEGERA DALAM KALANGAN PELAJAR SARJANA MUDA DI KAMPUS KESIHATAN, UNIVERSITI SAINS MALAYSIA (USM).

ABSTRAK

Mi segera adalah makanan yang diproses dan tidak berkhasiat. Ia telah digunakan oleh ramai orang pada masa kini disebabkan oleh harga yang berpatutan, lazat dan mudah untuk disediakan. Penggunaan mi segera semakin meningkat dan ia juga mempunyai kesan ke atas kesihatan. Tujuan kajian ini adalah untuk menentukan tahap kelaziman dan kesedaran mengenai kesan penggunaan mi segera dalam kalangan pelajar sarjana muda di kampus kesihatan, USM. Satu reka bentuk keratan rentas telah digunakan dalam kajian ini. Dua ratus tiga puluh dua pelajar telah diambil dalam kajian ini dengan menggunakan kaedah persampelan rawak kelompok pelajar praibazah pertama di kampus kesihatan, USM dari Januari sehingga Februari 2016. Borang soal selidik telah digunakan untuk mengumpul data. Data dianalisis dengan menggunakan Pakej perisian SPSS versi 22.0 dan perisian Stata 13. Pearson Chi Square, ujian Fisher's Exact dan Satu hala Anova analisis telah digunakan untuk membandingkan perkaitan antara pengambilan mi segera dan sosio-demografi data. Kepentingan statistik dianggap pada $p\text{-nilai} \leq 0.05$. Satu ratus dua puluh enam responden (54.3%) melaporkan jarang mengambil mi segera dengan tahap kesedaran mengenai kesan mi segera adalah sederhana (purata = 3.94). 142 responden dikategorikan dalam indeks jisim badan normal (BMI), 20.3% daripada responden kurang berat badan dan 3.4% daripada responden adalah obes. Pedih perut (23.7%), kembung dan pergerakan yang tidak teratur air besar (23.3%) dan sakit kepala (18.1%) telah gejala yang dikemukakan oleh responden selepas dimakan mi segera. Terdapat hubungan signifikan antara jantina dan perhatian ibubapa dengan kelaziman pengambilan mi segera. Kajian ini menunjukkan kelaziman dan kesedaran mengenai kesan pengambilan mi segera dalam kalangan pelajar di kampus kesihatan adalah sederhana. Dapatan kajian ini menunjukkan keperluan untuk memberikan pendidikan kesihatan dan promosi mengenai kesan mi segera pada kesihatan dan pemakanan sihat bagi meningkatkan pemahaman berkaitan kesan mi segera kepada kakitangan kesihatan dan orang awam.

Chapter 1

Introduction

1.1 Background of Study

Noodles have become an internationally recognized food and it is consumed in more 80 countries over the world. Noodles are the staple food in some Asian countries like China, Japan, and Korea. Ramen or noodle is difference to instant noodle. According to Barton (2015), noodle made of wheat and all the noodles are cooked fresh, wet and dry like instant noodle. Instant noodles content are more-or-less similar to and is prepared dry. Instant noodle is classified as fast food. Based on the World Instant Noodles Association (WINA), in 2014, the first ranking of global demand for instant noodles in 2014 is China (44,400), followed by Indonesia (13,430) and Japan (5,500). While Malaysia was at the 13th ranking out of 43 countries listed with 1,340 billion package instant noodles demands per year, as shown in Figure 1.1. In addition, instant noodles industry supplies 95.4 billion serving annually to consumer throughout the world include Malaysia. This number is expected to increases due to financial resources.

Country / Region		2010	2011	2012	2013	2014
1	China / Hong Kong	42,300	42,470	44,030	46,220	44,400
2	Indonesia	14,400	14,530	14,750	14,900	13,430
3	Japan	5,290	5,510	5,410	5,520	5,500
4	India	2,940	3,530	4,360	4,980	5,340
5	Vietnam	4,320	4,900	5,060	5,200	5,000
6	USA	4,180	4,270	4,340	4,350	4,280
7	Republic of Korea	3,410	3,590	3,520	3,630	3,590
8	Thailand	2,710	2,880	2,960	3,020	3,070
9	Philippines	2,700	2,840	2,720	2,720	2,800
10	Brazil	2,000	2,140	2,320	2,480	2,360
11	Russia	1,900	2,060	2,090	2,120	1,940
12	Nigeria	1,180	1,260	1,340	1,430	1,520
13	Malaysia	1,220	1,320	1,300	1,350	1,340
14	Nepal	730	820	890	1,020	1,110

Figure 1.1: Global Demand for Instant Noodles. Source: WINA (2015)

Instant noodle is one criteria of food insecurity as it is the first choice of food during financial constrain (Gellagos et al. 2014). According to Food and Agriculture Organisation (2009), food insecurity is a state of being unable to access and get sufficient nutritious food that meet their dietary needs and food preferences for an active and healthy lifestyle (, 2009). Several major determinants of food insecurity are poverty, lower income, single parent households, un-employed (Chavez et al. 2007). A study in Australia stated that 14% of tertiary students facing financial constrain had food insecurity and 24% was at risk of food insecurity (Gallegos et al. 2014). Instant noodle has become the food of choice lately due to its convenience and reasonable price (Ganasegeran et al. 2012). Furthermore, instant noodles are likely to be consumed because of longer shelf-life, ease to prepare and has excellent flavour. A cup type noodles are faster and ready to serve. While a bag type noodles takes within 3-4 minutes to serve (Gulia et al. 2015). The difference of time preparing noodle depends on their processing and classification.

Nevertheless, frequent instant noodle consumption had some side effect to the consumer. It is often criticized as unhealthy because of higher in carbohydrates but low in fibres, vitamins, and minerals (Park et al. 2011). For example, in a study by Shin (2014), it was reported that frequent instant noodles intake would lead to metabolic syndrome and cardio-metabolic syndrome such as heart disease, diabetes or stroke. Besides that, it also can cause obesity due to higher fat and oil in it. Based on a previous study, instant noodles is also one of the factors contribute to endometrial cancer among women (Shin, 2014). Endometrium cancer is the fourth most common cancer in women in Peninsular Malaysia (Lum, 2007).

Instant noodle is a highly processed food that lacks nutritive value. Every single serving of instant noodle is highly in carbohydrates, sodium and other food additives but lower in fibers, vitamins and minerals (CAP, 2014). According to the Codex Standards (FOA standards) instant noodle was listed as additive foods in the Codex Standards because of the additional sodium additive content. Sodium additives are the main reason why instant noodles are high in sodium. The function of food organization and agriculture (FOA) is to collect, analyze, interpret and disseminate information relating to nutrition, food and agriculture (FOA, 2010).

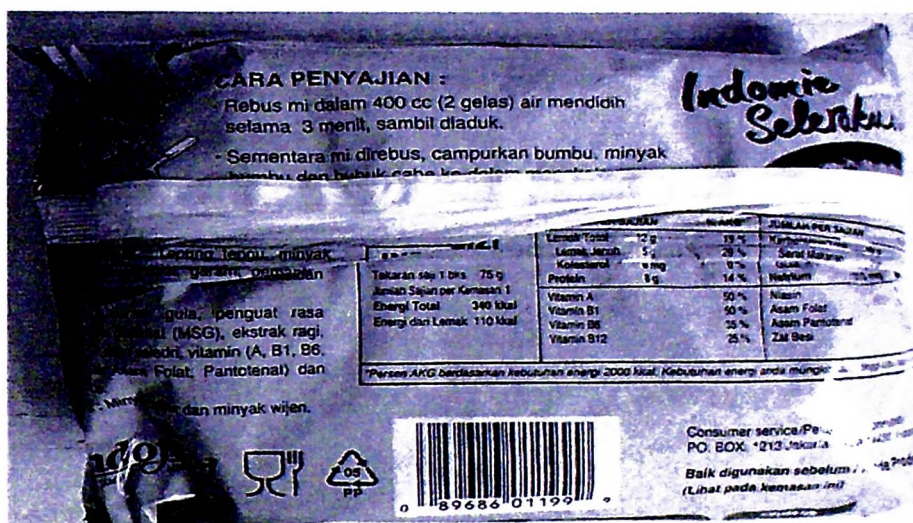


Figure 1.2: Indomie Instant Noodle.

Higher intake of instant noodle may lead to low quality of life due to the consumption of unhealthy food that leads to many possible diseases. The sodium content in a pack of instant noodles is $> 6.4\text{g}$ / packet, which was 3.2 times higher than the recommended rate ($1.5 - 2\text{g}$ / day). This consumption contributed to approximately 30% of the total sodium intake (Park et al. 2011).

According to Gan et al. (2011) in a study on eating habits which was conducted among university students in a medical school in Malaysia, they found that university students tend to make their own food choices based on the cost of food and availability of fast food. Most of their respondents (30%) had lack of knowledge about healthy food choices that may negatively affect their eating habits and nutritional status. While Savige et al. (2007) stated that, some of the common unhealthy eating habits reported among young adults included meal skipping, snacking and fast food consumptions such as instant noodle.

In the Health Campus, Universiti Sains Malaysia (USM), there are 2045 undergraduate students from three different schools; School of Medical Sciences, School of Dental and School of Health Sciences. Based on this number, most of the students attend routine classes, on-calls, passive exercises and a small amount of student did physical activities. Thus, the probability to consume non healthy food was higher due to university life and financial resources (Ahmed, 2011).

1.2 Problems Statement

Based on the World Instant Noodles Association, the number of instant noodle consumption in Malaysia and the demand is increasing due to decreases of financial resources and fast paced of economic transition (Al-Naggar, 2013). Additionally, instant noodle also has been classified as one of criteria of food insecurity (Gallegos and Ong, 2011). University students often fall into the food insecurity state (James et al. 2007) due to university's life and restrict financial sources as mentioned earlier. Thus, they tend to look for simple, affordable and easy to get such as instant noodle, fries, and burger.

Studies on instant noodle consumption were mostly conducted in Western and other Asian countries (Baker & Friel, 2014). At this stage the researcher only managed to find two published studies pertaining to instant noodle conducted in Malaysia but their focus were different. One of the studies looking at lifestyle practices among Malaysian University Students (Al-Naggar, 2013) including dietary intake. While the other one assessing primary school students' knowledge on fast food (Sharifah Intan Zainun, 2013). However, study on instant noodle consumption among young adult population is scarce. It is established that instant noodle consist higher in salt. Thus it will lead to health problem such as hypertension, stroke and kidney problem.

Apart from that, numerous study have concluded that food insecurity is associated with poor health and nutrition outcomes, poor psychological and cognitive functioning, substandard academic achievement, and increase risk of chronic disease due to overweight or malnutrition as well as endometrial cancer (Huddleston-Casas et al. 2009; Shin et al. 2014). According to Gallegos, food insecurity will affect the students' performance and academic achievement for uncontrolled consumption of fast food such as instant noodle (Gallegos et al. 2014). The existences of food insecurity such as frequent and heavy instant noodles consumption among university students is likely to have a range of serious consequences in short and long term. All of this issue has inspired the researcher to conduct this study on undergraduate student in Health Campus.

1.3 Research Objectives

1.3.1 General Objectives

To determine undergraduate students' awareness on the impact of instant noodles consumption.

1.3.2 Specific Objectives

1. To identify the prevalence of instant noodles consumption among undergraduates students in Health Campus, USM.
2. To determine the associated factors of heavy instant noodles consumption among students.
3. To determine the impact of instant noodle consumption on undergraduate student's health.
4. To assess the students' awareness on the impact of instant noodle consumption.

1.4 Research Questions

- a) What is the prevalence of instant noodles consumption among undergraduate students in Health Campus?
- b) What are the associated factors of heavy instant noodles consumption among students?
- c) What are the impacts of instant noodle consumption on undergraduate student's health?
- d) What is the students' awareness on the impact of noodles consumptions?

1.5 Hypothesis

1. $H_0 1$ = There is no significant association between selected socio-demographic characteristics (gender, race, family income, parental attention), health history (BMI and menstrual period) and instant noodles intake among students.

H_{A1} = There is a significant association between selected demographic characteristics (gender, race, family income, parental attention), health history (BMI and menstrual period) and instant noodles intake among students.

1.6 Definition of Operational Terms

Noodle	- A food paste made usually with egg and shaped in ribbon form (Matsuo, 2008)
Instant noodle	- Instant noodles are a precooked and usually dried noodle block, sold with flavouring powder and seasoning oil (Matsuo, 2008)
Instant noodle consumption	- Intake of instant noodles
Undergraduate students	- A students who is studying for their first degree at a college or university (Cambridge Dictionary Online, 2015) In this study, undergraduate students referred to student of Medical, Dental and Health Sciences of Health Campus, USM.
Cardio-metabolic syndrome	- Cardio-metabolic syndrome is a clustering of interrelated risk factors that promote the

developments of atherosclerotic vascular disease
and type 2 diabetes mellitus (Ashen, 2008)

1.7 Significance of the Study

Heavy intake of instant noodle had been proven to have a considerable impact on health. Young adult such as university student are prone to consume instant noodle because of several reasons as mention earlier. Thus, it is important to raise their awareness about the impact of instant noodle. The intention of this study is to explore this phenomenon and encourage them to turn to healthy food to maintain their healthy life style.

Chapter 2

Literature Review

2.1 Introduction

This chapter is the reviewing of current literature related to instant noodles consumption. The literatures were included and discuss to help justify this study and determine the research design and tools that is required to achieve its objectives. The review consists of issues on the prevalence of instant noodle consumption, the associated factors and the side effect of instant noodles consumption.

2.2 Review of literature

2.2.1 Prevalence of instant noodle consumption

The popularity of instant noodles has been increasing very rapidly during recent decades due to their reasonable price and convenience. In 2004, Malaysians consumed about 870 million packets of instant noodles but increasing by 2008, 1,210 million packet (CAP, 2014). This is an increase of nearly 40% in 4 years. Moreover, the consumptions of instant noodles are relatively high among Asian populations, especially among South Koreans (Fu, 2008). In a Korean study, it was indicated that 6299 adult aged from 19-64 years old consumed instant noodles. Of this number, 3825 were women and 2474 men (Shin et al. 2014).

College students rarely have time to cook due to they have to spend most of their time for studying, completing last minute assignment, test and last minute revision. Students often spend more time on assignments and other activities until they even skip meal times and end up binge eating later (Martin, 2012). While in Malaysia, students rarely have time to cook maybe due to 100% exam-oriented education system (Al-Naggar, 2013).

Furthermore, in Malaysia, instant noodles has become as a must have food in every kitchen and a regular item in supermarket trolleys as there are as many varieties of instant noodles (NSTP, 2007).

2.2.2 The associated factors of instant noodle consumption

There are many reasons why people eat instant noodle. Hungry is the basic reason of instant noodle consumption but there are many other reasons. For examples they want to eat because of convenience or just following friend or because of the taste. A nano research found that the behavior of instant noodle consumers is “I think eating” 22.8%. This is followed by “hungry” (16.3%) and “to save money” (15.6%). Furthermore, the study also indicated that, higher instant noodles intake are related to gender, race, income, and knowledge. Moreover, 25.5% factors indicated the prevalence of food insecurity influence by some socio-demographic data (Gallegos et al. 2014).

In the study by Park et al. (2011), 86.8% participants aged 20-49 years accounted as instant noodles consumers (INC). Participants aged 50-64 years old or 65 years and older accounted for only 9.5% and 3.8% of the INC group. In addition, men (63.5%) consumed more instant noodles than women (36.5%). Based on that study in korea, men consumed more instant noodles than women. Men consumed 23.7 g instant noodles per day, whereas women consumed 11.1 g per day (Park et al. 2011).

Park et al. (2011) further reported that 84.5% of the participants in the INC group had higher school education or a higher level of education, whereas 31.3% of participants in the non-INC group had a middle school or lower level of education, which is twice the proportion in the INC group (Park et al. 2011). More participants of higher education level consumed instant noodles rather than middle school or lower education level.

In other study by Gallegos and Ong (2011), low household income and reliance on income support were indicated as substantially associated to the food insecurity. Moreover, food insecurity is higher among students who were not living with their parents (Gallegos and Ong, 2011). Poor health may arise from financial difficulty and inability to access sufficient amount of healthy food as it would effects their learning ability. The same study also found that, university students were often belongs to poor food security group similar to those who received government payment, and they had fair or poor general health due to financial difficulties (Gallegos and Ong, 2011). Obviously, instant noodles are the most popular food especially among colleges and university students despite of the negative health connotation (Roziana, 2007).

2.2.3 The impact of instant noodles intake to the consumer

As mentioned earlier in Chapter 1, instant noodle contain of high sodium. Accordingly, high sodium consumption is linked to a variety of diseases such as hypertension, heart disease, stroke and kidney damage (Ramenreporter, 2015). For example in Shin et al. (2014), they indicated a positive association between instant noodles with metabolic syndrome and abdominal obesity due to the combination effect of high energy density (381-464 kcal/100g), high glycemic loads with refined carbohydrates, high saturated fat content (66.2-87.2 kcal/100g) and high sodium (1.7-2.5 g/serving).

Besides lower quality of life, metabolic syndrome and abdominal obesity, the higher consumption of instant noodle also may lead to endometrial cancer as reported in research by Takayama, (2013). In this study, the researcher found a positive relationship between high intake of instant noodles and endometrial cancer. Additionally, instant noodles consumption is indicated as associated to a higher risk of gastric cancer (Park et al. 2011).

Monosodium glutamate, which is also known as “MSG”, is an additive that enhances the flavor of food. It is commonly found in processed meats, canned soups and many other packaged foods, including instant noodles. Minton (2010), emphasized that people who eat more MSG are more likely to be overweight or obese. The most significant hazard in instant noodles is too much preservatives and MSG during processing. Besides act as flavor enhancer, MSG also is a silent killer. Ingesting too much preservative in foods and drink will increase probability to get cancer (Ahmed, 2011). Free glutamic acid (MSG is approximately 78 % free glutamic acid) is the same neurotransmitter that your brain, nervous system, eyes, pancreases, and other organs use to initiate certain process in your body (Mercola, 2009). When the intake of MSG increased, the natural functioning of endogenous glutamate is manipulated. Moreover, it is also suspected to cause some symptoms such as sweating, facial flushing, headache, depression, chest pain or difficulty in breathing and weakness (Minton, 2010).

2.2.4 Awareness of the impact of heavy instant noodle consumption

Nutritional awareness is a significant element in treating a lot of illnesses. According to marketing researchers the most serious obstacle faced by the instant noodles makers was the growing awareness of its negative effects on human health (Asiasentinel, 2010). Moreover, a study in Malaysia indicates poor practice of healthy lifestyle among university students (Redhwan, 2012). Most of the university students already have the knowledge on the side effects of instant noodles but had low awareness of the impact (Lim, 2015). Healthy lifestyle includes physical activities and nutritional status. However, awareness on the impact of heavy instant noodles consumption has not specifically being study. But they were some studies showed that most university students are not familiar with the requirement of healthy food for their body (Barzegari et al. 2011).

2.3 Theoretical and Conceptual Framework

The precaution adoption model (PAM) was used in this study to help the researcher understands the population under study. PAM is created by Weinstein and published in 1992 with the goal to explain how individuals come to the decision to take action about the risk and how they translate that decision into action. Besides that, this model proposes that behaviour change proceeds through a series of stages, starting with individuals being unaware of health or food-related risk. It also link to awareness and action (Weinstein, 1992).

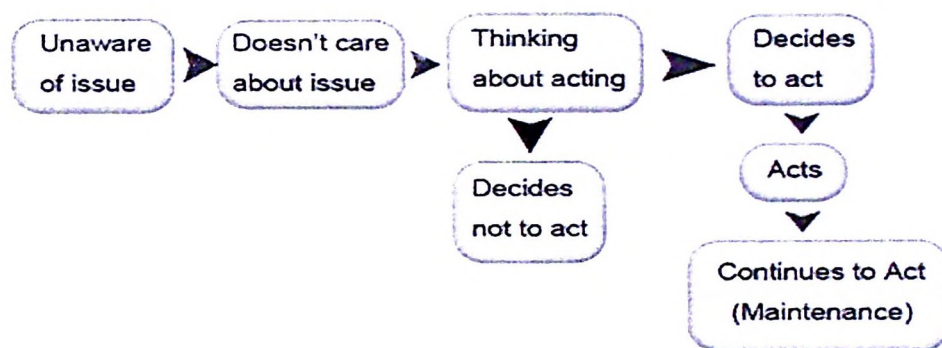


Figure 2.3: The Precaution Adoption Model (PAM). Source: Instructional Design Fusions, 2010

In addition, this model is useful in helping nutrition educators and health practitioner to understand that different people will have difference reactions towards health education on food provided to them. Some of them may not take any actions on the issue that health professionals think it is important (Weinsten et al. 2008).

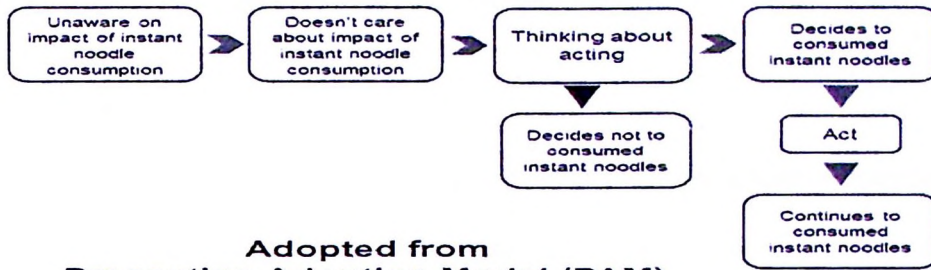
According to Weinstein et al. (2008) at an initial point of time, people are unaware of health issue. When they first learn something about the issue, they no longer unaware, but they are not yet engaged by it either. People, who reach the decision-making stage, have become engaged by the issue and are considering their response.

This decision-making stage process can be resulted in one of these three outcomes: 1) they may suspend judgement, 2) remaining to thinking about for the moment or they may decide to take no action, 3) moving decides to act and halting the precaution, moving to act. For those who decide to adopt the precaution, the next step is to initiate the behaviour. The steps, if relevant, indicates that the behaviour has been maintained over time. The model helps the researcher to understand on behaviour changes (Weinstein, 1992).

This model has been applied in a study by Brug, Glanz and Kok, (1997). The study examined whether eating practices and psychosocial factors differed across stages of change food and vegetables. From the results, there is significant differences were found between stages of change in dietary intake. The results are more positive in action and maintenance than the pre-action stages (Brug, Glanz&Kok, 1997). The researcher discovered that it is useful in identifying the human behaviour toward nutritional intake. It helps the researcher to understand on behaviour changes (Weinstein, 1992).

In addition, Toyama Birth Cohort study in Japan found that, junior high school who frequently consumed instant noodles (3 times/ week) had lower quality of life (Wang et al. 2008). Low and moderate awareness level on impact of instant noodle consumption were coherent with study by Hakim et al. (2012), student who ate fast food establishment had lower intake of healthy food and it increase since beginning of college.

Conceptual Framework



Adopted from
Precaution Adoption Model (PAM).

Source: Instructional Design Fusion, 2010.

Figure 2.4: Conceptual Framework of the Precaution Adoption Model (PAM).

Through the selected theory, the researcher came to assumption that when respondents first learn the impact of instant noodles, they will no longer aware, but they are not yet engaged by it either. People, who reach the decision-making stage, have become engaged by the issue and are considering their response.

The respondents suspended judgement regarding the impact of instant noodle consumption and thinking about to acting whether decides not to consume instant noodles or decides to consume instant noodles. For those who decide to adopt the precaution, the next step is to initiate the behaviour. The steps, if relevant, indicates that the behaviour has been maintained over time.

Chapter 3

Method and Methodology

3.1 Research Design

This study was a cross-sectional survey and using descriptive quantitative approached. This design was chosen to explore information on instant noodles intake among the population under study.

3.2 Population and Setting

This study was conducted among undergraduate students who registered at the three schools in Health campus, USM Kubang Kerian; School of Health Sciences (PPSK), School of Medical Sciences (PPSP) and School of Dental (PPSG).

3.3 Sampling Plan

3.3.1 Sample

Inclusion criteria

1. Male and Female undergraduate students of Health Campus, USM
2. Agreed to participate in this research

Exclusion criteria

1. Undergraduate students from other university
2. Post graduate students of Health Campus, USM

3.3.2 Sampling Method

This study had used cluster random sampling method. Cluster sampling means the researcher divides the population into several groups called clusters. A simple random sample of cluster is a selected from the population. This method is suitable for a survey on a larger sampling frame such as an institution like USM (Ahmed, 2009). Following were the steps taken by the researcher for sample selection.

Potential participant was classified into several clusters according to course and year of study. Altogether, there were 49 clusters identified in Health Campus. The researcher used SPSS 22.0 to randomly select the cluster. In order to achieve the targeted number of students, the researcher set the minimum number of 40 students for each cluster. According to the Academic Office of PPSK, 40 is the minimum number of student in a course. Accordingly, two hundred and forty was indicated on the sample size for this study by randomly selected 6 clusters out of 49 clusters through SPSS 22.0 as shown in Figure 3.3.

Cluster sampling referred to a sampling method that has the following properties:

- The population is divided into N groups, called clusters.
- The researcher randomly selects n clusters to include in the sample.
- The number of observations within each cluster M_i is known as $M = M_1 + M_2 + M_3 + \dots + M_{N-1} + M_N$. (Ahmed, 2009)

For this sampling method, eligible undergraduate student was selected based on the inclusion and exclusion criteria for this study. Only those who fulfilled the inclusion criteria were invited to participate in the study.

3.3.3 Sampling Size

The sample size for this study was identified using G-Power 3.1.9 calculation software. The parameter used in calculation, was effect size = 0.3 (medium), and significance $\alpha = 0.05$, and power = 0.8. The recommended sample size was 133 by using $df = 4$. Based on the calculation, the sample size adequate for this study is 133.

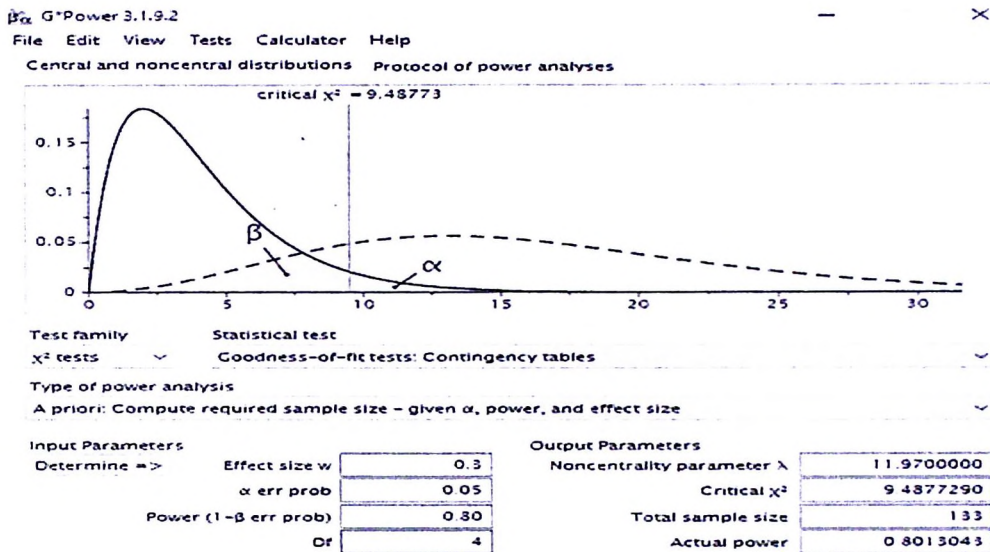


Figure 3.3: Calculation of sample size by G-Power 3.1.9

Cluster effect size: (Total sample size x cluster effect) + drop out

: (133 x 1.5) + 20%

: 200 + 40

: 240

The total sampling size for this study was: 240 participants.

3.4 Variables

3.4.1 Variables Measurement

- The independent variables for this study were selected socio-demographic data (gender, race, family income, parental attention) and health history (body mass index (BMI) and menstrual periods).
- The dependent variable for this study was prevalence instant noodle consumptions and awareness on the impact of instant noodle consumptions among undergraduate Health Campus Students, USM.

3.5 Instrumentation

3.5.1 Instrument

Data for this study was obtained through a set of self-administered questionnaires consists of four main sections; Part A, Part B and Part C. Question in part B was adapted from Krittayannop, 2006.

Part A: Socio-demographic data and health history.

This section comprises of 24 questions to gather data on age, gender, race, school, year of study, monthly family income, total number of people supported in this income, health history and medical history. Health history consists of 4 items; age of first menstrual period, menstrual period, height and weight. For the medical history, it consists of 12 items. Item 13 referred to history of medical problem, item 14 referred to medication and items 15, 16, 17, 18, 19, 20, 21, 22, 23, 24; referred to symptoms of post consuming instant noodles.

Part B: Instant noodles consumptions

This section comprises items 25, 26, 27, 28, 29, and 30 (Krittayannop, 2006). The question are used to obtain data on the instant noodles favourite brand, frequency of intake, and time most being consume instant noodles. The prevalence of instant noodle consumptions (Krittayannop, 2006) had been categories as below:

Rare = once a month or less than once a month

Moderate = once a week or 2-3 times per month

Heavy = more than 3 times per week or 2-3 times per week

Part C: Awareness on the impact of instant noodle consumption on health

This part way used to find data on the students' awareness regarding the impact of instant noodles and the instant noodles consumptions and the content of instant noodles. Altogether, there are nine items. The researcher had used scoring method by Krittayannop (2006) to classify the awareness level on the impact of instant noodles. Mean value was used to identify the level of awareness.

4.21 – 5.00 = most awareness

3.41- 4.20 = more awareness

2.61 – 3.40 = moderate

1.81-2.60 = less awareness

1.00-1.80 = least awareness

3.5.2 Validity and Reliability

The validity and reliability of each instrument used for this study are important in order to make sure they are suitable for the population in Malaysia and easy to understand by the participants. Content validity of the instrument was carried out by sending the questionnaires to three (3) content experts who are the lecturers of nursing and dietetic programs.

Prior to the real study, a pilot study was done on 45 Diploma (Year 1 until 3) and 4th year bachelor nursing students of Health Campus, USM to ensure the reliability of the questionnaire. They were selected based on the inclusion and exclusion criteria of this study. The Cronbach's alpha for awareness level on the impact of instant noodle was 0.819. It means the instrument was suitable to be used in the real study.

3.6 Ethical Considerations

Ethical approval to conduct the study was obtained from Research Ethical Committee (Human), Universiti Sains Malaysia. Permission to conduct the study was obtained from the Director of Health Campus and the Dean of the three schools. Explanation on the purposes of the study was given to the participants prior to survey. Apart from that, the information regarding involvement and discontinued of this study honestly explained to them. Participants were informed that all the information from the study will be kept confidential, anonymous and will be used for academic purposes only. The study is a non-invasive and would not affect their academic status if they participate or decline the participation. Written consent then obtained from each participant prior to answering the questionnaire.

3.7 Data Collection Plan

Data for this study was collected after getting the approval from the Research Ethical Committee (Human). After the consent had been obtained from the participant, self-administered questionnaires was distributed to each participants who fulfilled the inclusion criteria and willing to take part in the study. It took about 30 minutes for each respondent to complete the questionnaire. The researcher had checked the completeness of the questionnaire. The flow of data collection for this study is shown in Figure 3.1.

3.7.1 Flow Chart of Data Collection

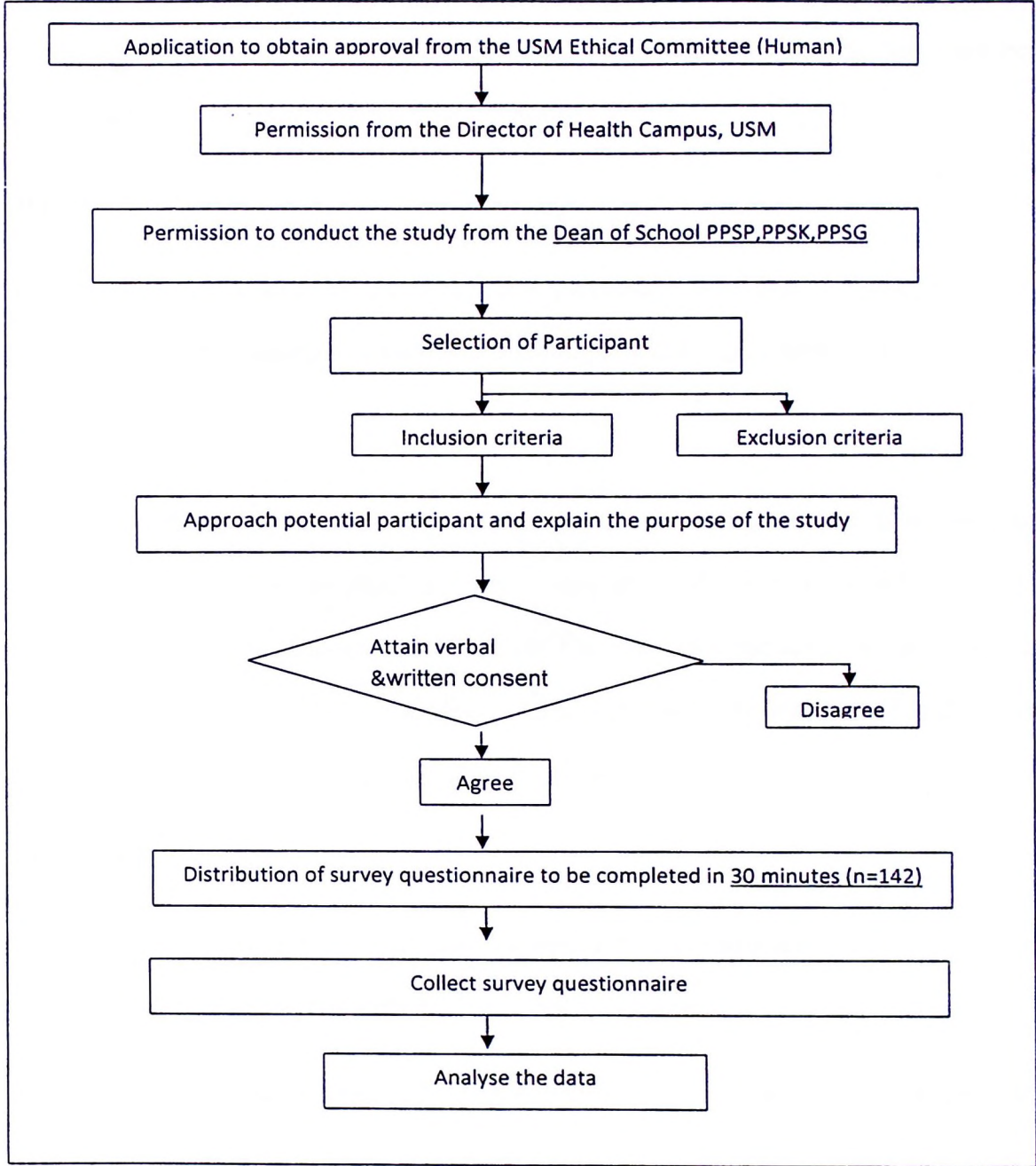


Figure 3.7: Flow Chart of Data Collections.

3.8 Data Analysis

All the data had been processed by using the Statistical Package for Social Science (SPSS) software, version 22.0 for Windows and Stata software 13. The data then be analysed descriptively and inferentially as follows:

Objective 1:

Descriptive analysis such as frequency and percentage was used to determine the prevalence of instant noodles consumptions among health campus students USM.

Objective 2:

Chi-square had used to determine the association between categorical variables such as gender, race, family income, parental support and instant noodles intake (rare/moderate/heavy). One-way ANOVA and Fisher's exact test also used to compare the difference between instant noodles intake (rare/moderate/heavy) and numerical variables are example age, weight, total of off people supported.

Objective 3:

Descriptive analysis such as mean and standard deviation was used to determine the awareness level on impact of instant noodles consumptions.

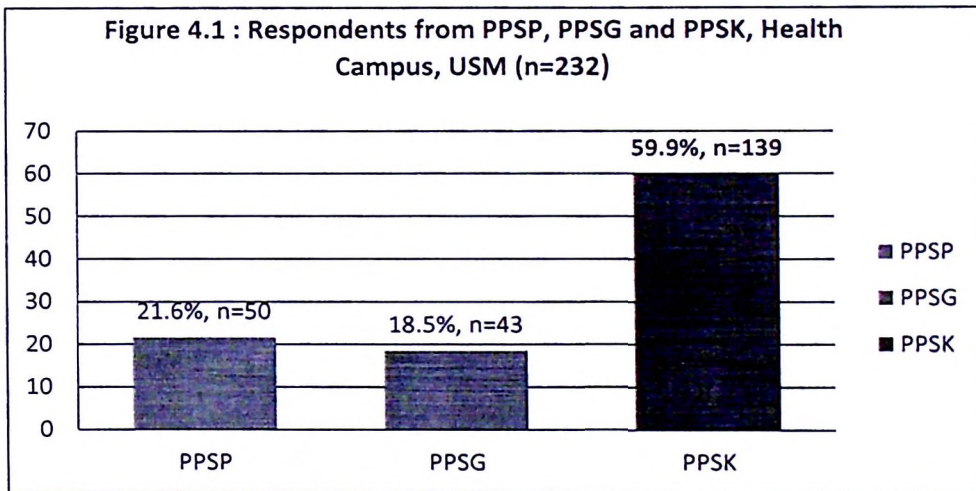
At the 5% level of significance, all null hypotheses rejected if the p value is less than 0.05.

Chapter 4

Data Analysis and Results

4.1 Introduction

This chapter reports the study data and results analysis obtained from respondents among undergraduate student of three schools in Health Campus, Universiti Sains Malaysia. It includes data on respondent's selected socio-demographic characteristic (gender, race, family income and parent attention) and health history in relation to instant noodle consumption. Besides that, respondents' levels of awareness on the negative impact of higher instant noodle consumption are also presented. Out of 240 questionnaires distributed, 232 were included in the study



Based on the figure above, 232 respondents, 50 (21.6%) from PPSP, 43 (18.5%) from PPSG and 139 (59.9%) from PPSK as shown in Figure 4.1.

4.2 Socio-demographic Characteristics

Table 4.1 shows the majority of respondents were female 85.3% (n=198) and Malay 70.7% (n=164). Most of respondents (59.1%, n=137) from family with monthly income between RM 2000 to RM 9000. With regards to parent's attention, majority (53%, n=123) respondents had 3 to 5 siblings.

Table 4.1: Socio-demographic characteristics of respondents (n=232)

	Demographic Data	Frequency	Percentage (%)
Gender	Male	34	14.7
	Female	198	85.3
Race	Malay	164	70.7
	Chinese	33	14.2
	Indian	16	6.9
	Others	19	8.2
Family Income	RM 400 – RM 1900	73	31.5
	RM 2000 – RM 9000	137	59.1
	RM 10,000 – RM 120, 000	22	9.5
Parents Attention	1-2 siblings	50	21.6
	3-5 siblings	123	53.0
	6-8 siblings	53	22.8
	9-11 siblings	5	2.2
	Over 12 siblings	1	0.4

4.3 Health History

4.3.1 Status of Menstrual Periods.

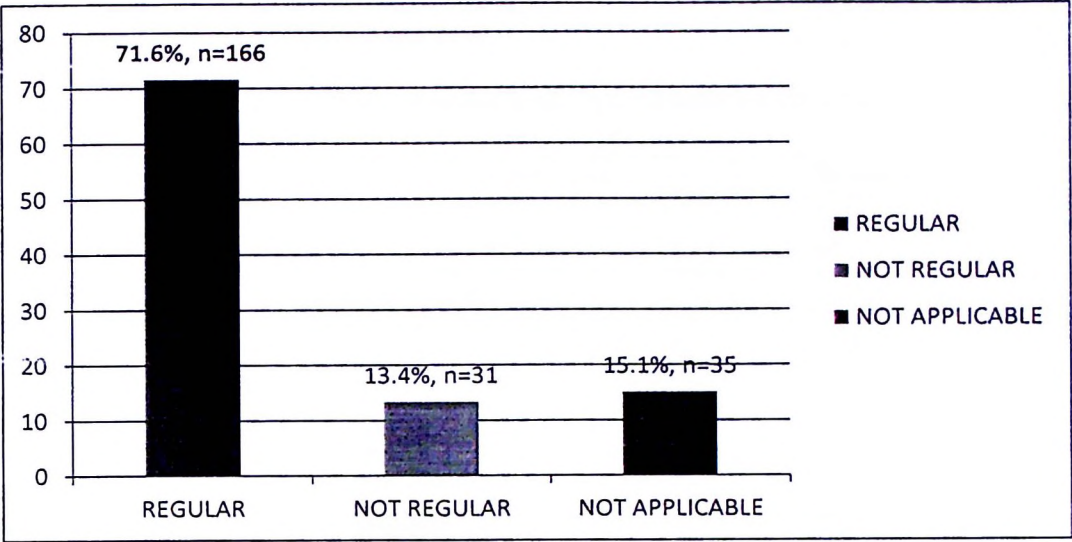


Figure 4.2: Respondents’ menstrual period status (n=232)

Based on the Figure 4.2, most of the respondents had regular menstrual periods (71.6%, n=166). Not applicable data represented male respondents (15.1%, n=35).

4.3.2 Medical Problem

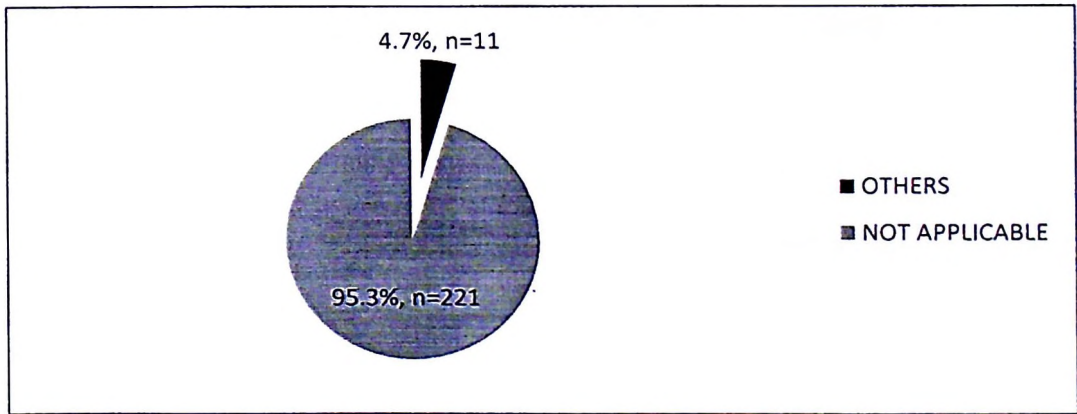


Figure 4.3: Respondents’ medical problems (n=232)

Most of the respondents in this study did not have medical problem (95.3%, n=221) (Figure 4.3). Only eleven percent had medical problem such as gastritis and asthma.

4.3.3 Medication Intake

With regard to the respondents that on medication, 97% of respondents do not takes any medication as shows in Table 4.2.

Table 4.2: Respondents' on medication (n=232).

Medication	Frequency	Percentage (%)
Yes	7	3
No	225	97

4.3.4 Body Mass Index (BMI)

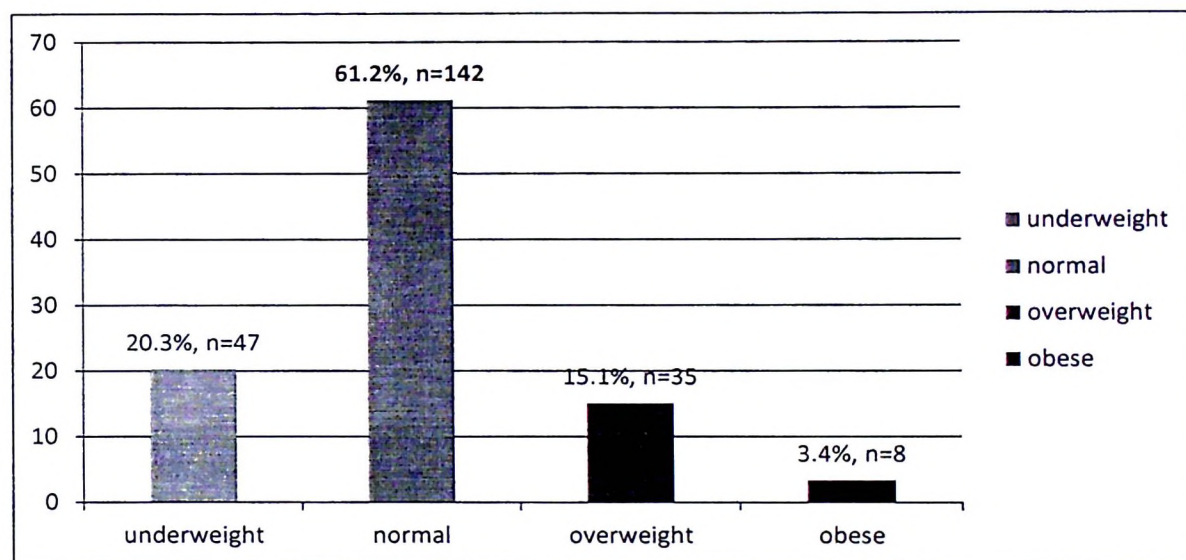


Figure 4.4: Respondent's BMI status. (n=232).

According to Figure 4.4, most of the respondents had normal BMI (61.2%, n=142). While, 3.4% (n=8) of the respondents were obese.

4.4 Behaviour towards Instant Noodles Consumption

4.4.1 Instant Noodle of favourite brand

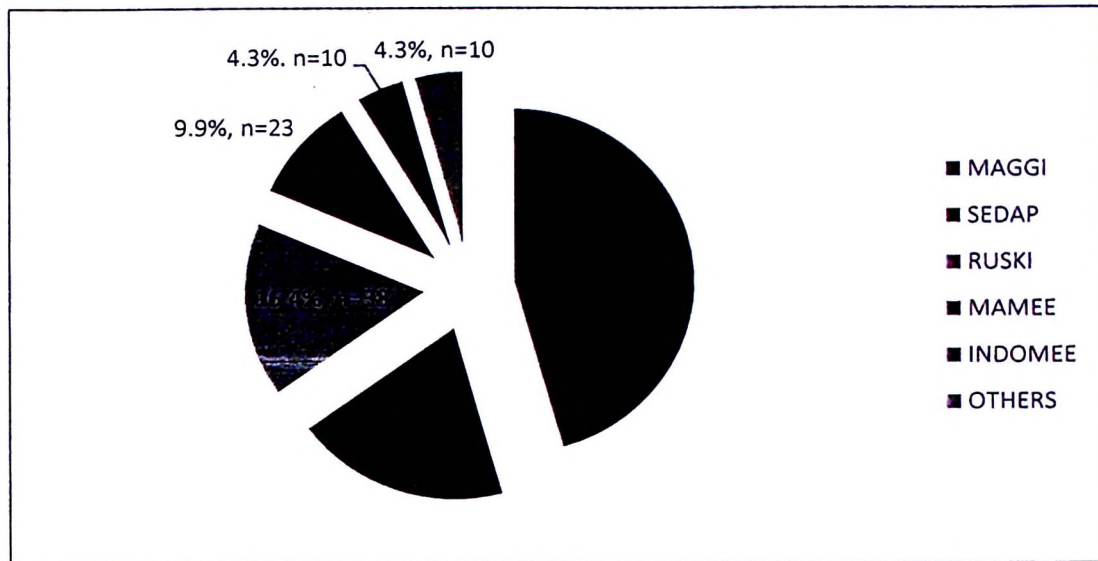


Figure 4.5: Favourite brand. (n=232).

The respondents have been asked about their favourite brands of instant noodles and most of them preferred Maggi brand 45.7% (n=106).

4.4.2 Instant Noodles Consumption

Based on Table 4.3, most of the respondents categorised themselves as rare consumers (54.3%), followed by moderately (24.6%) and only 21.1% respondents were heavy instant noodles consumers.

Table 4.3: Instant noodles consumption (n=232)

Intake of instant noodles	Frequency	Percentage (%)
Rare	126	54.3
Moderate	57	24.6
Heavy	49	21.1

4.4.3 Quantity of Instant Noodles Consumption

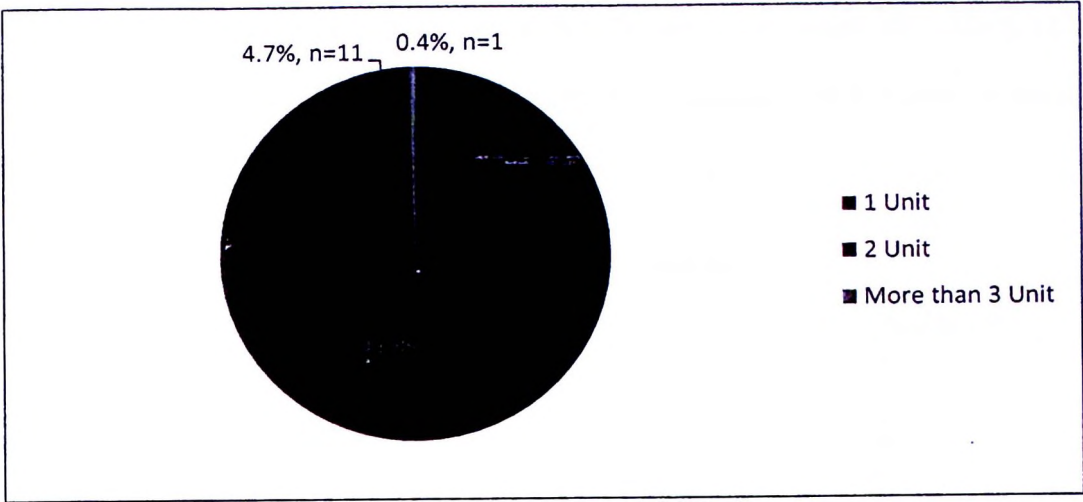


Figure 4.6: Instant noodle consumed by the respondents per intake. (n=232)

With regards to the quantity of intake, most of the respondents consumed 1 unit of instant noodle per intake (94.8%, n=220) (Figure 4.6).

4.4.4 Common Time of Instant Noodle Consumption.

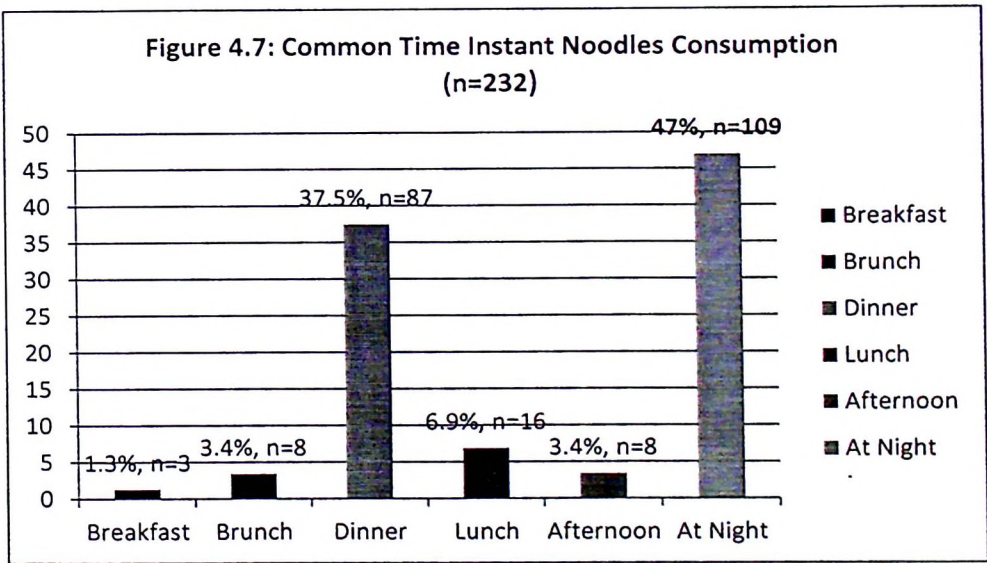


Figure 4.7 shows that, the most common time the respondents consumed instant was at night 47.0% (n=109)

4.4.5 Frequency of Buying Instant Noodles

The respondents for this study were also asked the frequency of buying instant noodle. Most of the respondent used to buy instant noodles less than once a month 59.5% (n=138).

Table 4.4: Frequency of buying instant noodles (n=232)

Frequency of buying instant noodles	Frequency	Percentage (%)
More than 3 times a week	0	0
2-3 times/week	3	1.3
Once a week	5	2.2
2-3 times/month	14	6.0
Once a month	71	30.6
Less than once a month	138	59.5

4.4.6 The Impact of Instant Noodles Consumption

Besides the frequency, quantity and time of consuming instant noodles, the respondents were also asked whether or not they know the impact of higher consumption of instant noodles. Some of the respondents claimed they had were bloating and irregular bowel movement (23.3%, n=54), burning sensation on stomach (23.7%, n=55) and headache (18.1%, n=42) (Table 4.5).

Table 4.5: Frequency (%) of the respondent had symptoms after consumed instant noodle. (n=232)

Symptoms	Frequency (%) of the respondent had symptoms when consumed instant noodle	
	NO	YES
Infection of hairs follicle	203 (87.5)	29 (12.5)
Headache	190 (81.9)	42 (18.1)
Depression	218 (94.0)	14 (6.0)
Facial Flushing	215 (92.7)	17 (7.3)
Chest Pain	220 (94.8)	12 (5.2)
Palpitation (irregular heart beat)	218 (94.0)	14 (6.0)
Difficulty in breathing	227 (97.8)	5 (2.2)
Burning sensation on stomach	177 (76.3)	55 (23.7)
Bloating and irregular bowel movement	178 (76.7)	54 (23.3)
Fatigue	205 (88.4)	27 (11.6)

4.5 Factor Associated to the Consumption of Instant Noodles.

The factors associated to the consumption of instant noodle are gender, race, family income, parent attention, menstrual period and body mass index range as reported in previous study (Chung et al., 2010). In this study, these issues were also examined. Table 4.6 shows significant association between gender and frequency of instant noodles consumptions with p-value was less than 0.05 (p-value= 0.044). Thus, the null hypothesis was rejected. Most of them were female respondents (85.3%, n=198).

Besides that, parents' attention also had a significant association with the instant noodles consuming at p-value less than 0.05 (p-value= 0.043). Thus, the null hypothesis was rejected.

While gender, races, family income, menstrual period and body mass index range were not significantly associated with the frequency of instant noodle consumption. Thus, the null hypothesis could not be accepted.

Table 4.6: Factor associated to the consumption of instant noodles. (n=232)

Socio-demographic	Frequency of consuming (%)			X ² (df)	p-value
	Rare	Moderate	Heavy		
Gender				2.618(1)	0.044 ^{c*}
Male	24 (70.6%)	6 (17.6%)	4 (11.8%)		
Female	102 (51.5%)	51 (25.8%)	45 (22.7%)		
Race					0.710 ^b
Malay	90 (54.9%)	38 (23.2%)	36 (22.0%)		
Chinese	15 (45.5%)	11 (33.3%)	7 (21.2%)		
Indian	11 (68.8%)	2 (12.5%)	3 (18.8%)		
Others	10 (52.6%)	6 (31.6%)	3 (15.8%)		
Family Income				6.101(4)	0.192 ^a
RM400 – RM 1900	17 (77.3%)	2 (9.1%)	3 (13.6%)		
RM 2000 – RM 9000	74 (54.0%)	34 (24.8%)	29 (21.2%)		
RM 10,000 – RM 120, 000	35 (47.9%)	21 (28.8%)	17 (23.3%)		
Parents Attention				15.956(8)	0.043 ^{a*}
1-2 siblings	32 (64.0%)	8 (16.0%)	10 (20.0%)		
3-5 siblings	62 (50.4%)	39 (31.7%)	22 (17.9%)		
6-8 siblings	30 (56.6%)	9 (17.0%)	14 (26.4%)		
9-11 siblings	2 (40.0%)	0 (0.0%)	3 (60.0%)		
Over 12 siblings	0 (0.0%)	1 (100%)	0 (0.0%)		
Menstrual Period				8.246(4)	0.083 ^a
Regular	88 (53.0%)	39 (23.5%)	39 (23.5%)		
Not regular	13 (41.9%)	12 (38.7%)	6 (19.4%)		
Not applicable	25 (71.4%)	6 (17.1%)	4 (11.4%)		
BMI Range				0.697(2)	0.495 ^c
Underweight	26 (55.3%)	14 (29.8%)	7 (14.9%)		
Normal	80 (56.3%)	32 (22.5%)	30 (21.1%)		
Overweight	16 (45.7%)	8 (22.9%)	11 (31.4%)		
Obese	4 (50.0%)	3 (37.5%)	1 (12.5%)		

^aPearson Chi-square test

^bFisher's Exact test

^cOne-way Anova test

- P-value less than 0.05 is statistically significant

4.6 Awareness Level on the Impact of Heavy Instant Noodle Consumption

Finding in Table 4.7 shows that, respondents' awareness level on the impact of heavy instant noodle consumptions was high with the total mean at 3.94. The majority of respondent had higher level of awareness with the score of 5 for instant noodles contain high flavour enhancer 61.6% (mean= 4.46) and that it contain MSG 57.8% (mean= 4.42). Some of the respondents are not sure either the cup type is dangerous compared to bag type instant noodles with the mean value was at 3.42 and the score of 3.

Table 4.7: Awareness on the impact of instant noodle consumptions (n=232)

Items	Percentage (%) of respondent on each awareness question					Mean	SD
	5	4	3	2	1		
Contain high sodium level	26.3	31.5	36.6	2.2	3.4	3.75	0.984
Cup type is dangerous compared to bag type	14.7	24.1	52.6	5.6	3.0	3.42	0.913
Takes 3 days to completely digested in stomach	30.2	20.3	36.6	9.9	3.0	3.65	1.103
Contain high flavour enhancer	61.6	26.7	9.1	0.9	1.7	4.46	0.831
Contain MSG is highly addictive food	57.8	30.2	9.9	0.4	1.7	4.42	0.823
MSG can caused increase BMI lead to obese	34.9	28.0	30.2	5.2	1.7	3.89	1.003
Can lead to chronic kidney disease for higher intake	47.8	31.0	15.5	3.9	1.7	4.19	0.954
One of the factors that contribute to cancer	38.4	29.7	28.9	1.3	1.7	4.02	0.940
Can caused endometrial cancer	24.1	25.0	46.1	3.0	1.7	3.67	0.934
Total						3.94	0.943

*5=strongly agree, 4=agree, 3=not sure, 2= disagree, 1= strongly disagree

CHAPTER 5

Discussion

5.1 Introduction

The previous chapter present the findings of the study while this chapter presents discussion on the findings in detailed.

5.2 Prevalence of Instant Noodles Consumption

The consumption of instant noodles among undergraduate students at three schools was at low rate. This finding is concurrent with previous study conducted in United State in 2009, whereby 57% of the respondents were rarely consumed instant noodle (Chung et al., 2010). However, according to Shin et al., (2013) the prevalence of instant noodle consumption is relatively high among Asian culture especially South Koreans where instant noodles is their staple food with 86.8% from 774 respondents at the age 20-49 years old consumed instant noodle. While Malaysian became the 13th in the rank out of 43 countries that consumed instant noodle (WINA, 2015). Besides that, a different finding was reported in Selangor. It was reported that, majority (62.4%, n=200) of the student consumed fast food several times a week (Hakim et al., 2012). In addition, instant noodle was one of the fast food and the study was conducted on university students at the age of 20 years old. The different in finding could be due to difference of population study and knowledge regarding impact of instant noodle on health.

5.3 Association between Selected Socio-demographic data (Gender, Race, Family Income and Parental Attention) and Instant Noodle Consumption

5.3.1 Gender and Instant Noodle Consumption

The findings of this study exhibited a significant association between the prevalence of instant noodle consumption and respondents' gender. This indicated that number of female respondents was higher compared to male respondents. However, when compared between genders, the male had consumed more instant noodles than the female. Park et al. (2011) also found similar finding that male (63.5%) consumed more instant noodle than female (36.5%). The study was conducted in 2010 among Korean adults. Besides that, study by Shin et al. (2014), showed higher frequency of instant noodle intake by a mean of 2 times/week in male and 1.2 times/week in female. Eating behaviour between male and female were different whereby men consumed double of female eating behaviour (Chung et al., 2010) but there were different in finding of the study. However, according to Chung et al. (2010), the relationship between gender and instant noodle consumption were not significant. This may be due to the study was conducted in United State (US), America and they had less consumed instant noodles.

5.3.2 Race and Instant Noodle Consumption

Race was not a significant factor to instant noodle consumption in this study. This is because the majority of respondents in this study were Malay. Majority of the Malaysian citizen are Malay and this is the first study specific on instant noodle consumption in Malaysia. The researcher could not compare the findings with other studies conducted in other countries. This is because most of the studies on instant noodle were mainly conducted on the same race. Instead of Korea, China is one of the Asian countries which instant noodle is originated as well as it is a popular food among Chinese group (Fu, 2008). But, a study by Chung et al. (2010) stated that there were significant differences of ethnicity (Hispanic, non-Hispanic black, non-Hispanic white and others) and instant noodle consumption. The findings of the study where not compatible due to difference group of race and ethnicity and majority of the respondents were Malay.

5.3.3 Family Income and Instant Noodle Consumption

Based on the finding of this study, respondents' family income had no significant association with the prevalence of instant noodle consumption. This is similar to a study by Krittayaannop in Thailand. The study was done on adult and the p-value was 0.157 (p-value: <0.05). In addition, study of noodle consumption pattern in Americans was in contrast to this study. The study shows that, noodle consumption was highest in the lower income group (Chung et al. 2010); Gallegos et al. 2014)). While, according to Park et al. (2011), 41.9% of the participants of middle income group had consumed instant noodle. This study also showed family income was significant to the instant noodle consumption. The different in finding could be due to the different population and setting of study.

5.3.4 Parental Attention and Instant Noodle Consumption

The study finding also indicated that, parental attention was significantly associated to the prevalence of instant noodle consumption. This finding is consistent with previous studies on factors contribute to food insecurity showing that more parental attention or bigger numbers of siblings in family was associated with high food insecurity (Gallegos et al., 2014). The increase in prevalence of instant noodle consumption was related to many family members or siblings that stay together with the parents. Besides that, studies by Angeliki et al. (2012) stated that, student living away from family home tends to develop poor eating habits and consumed unhealthy food and high cost of food. This is because they cannot leave the eating habits at home even they migrate. According to Krittayaannop, parental attention was not significantly associated to instant noodle consumption with the p-value: 0.736 (p-value: < 0.05). This could be due to the higher family income even their parental attention also high.

5.4 Association between Health History and Instant Noodle Consumption

5.4.1 Menstrual Period and Instant Noodle Consumption

Based on the finding of this study, there was no significant association between menstrual period and prevalence of instant noodle consumption. Majority of the respondent had normal menstrual period and only 13.4% of respondents had irregular menstrual periods. However, according to Shin et al. (2014), with the age of 19-64 years old, instant noodle consumption alone might increase the risk of metabolic syndrome and disturbed the hormones reproductive of female. This is supported by Brich (2014), that women in particular might be susceptible to these negative health effects because of the abnormal hormones estrogen and abnormal menstrual period when consumed too much instant noodles. The finding of this study might be due to all of them not heavily consumed instant noodle.

5.4.2 Body Mass Index (BMI) and Instant Noodle Consumption

The finding of this study indicated that BMI was not significantly associated to the instant noodle consumption. Similar finding was reported in Park et al. This finding is consistent with previous study among undergraduate student of University in Selangor. 20.9% of female student underweight and 10% of female student were obese while 16.7% male students were underweight and 17.8% were obese (Hakim et al. 2012). According to Huda and Ruzita (2011), the prevalence of underweight among female students was higher than male students. While, energy intake among male students were higher compared to female students. Female were more concern about body weight, body shape and eating than males. In addition, Gan et al. (2011) stated that, snaking pattern shown to give negative effects on the body weight and university student's behaviour. In addition, most university student did not meet the recommended intakes for most of the macronutrient and micronutrient (Sanlier and Unusan, 2007).

5.5 Impact of Instant Noodle Consumption on Health

Some of the impacts of instant noodle identified in this study were headache, burning sensation on stomach and bloating and irregular bowel movement. As mentioned earlier, monosodium glutamate (MSG) is one of the ingredients in instant noodle. It can trigger an allergic reaction in 1 to 2 % of the population. Individual who are allergic to MSG can get burning sensation of chest and facial flushing or pain and headache (CAP, 2014). Instant noodles also could lead to stomach pain due to gastric function imbalance (Park et al. (2011). Gastric function imbalance happened because of eating plenty instant noodles. Some of the sign and symptom of MSG allergic also present in this study such as headache, burning sensation on stomach and bloating and irregular bowel movement.

Sign and symptoms present after consumed instant noodle on health could determine whether an individual is allergic to MSG. It is known that, instant noodle also high in sodium. Increase sodium is linked to stroke and kidney damage. Increase sodium also lead to headache due to increase blood viscosity. Some chemicals found in instant noodles are also capable of causing cancer. For example dioxin and plasticisers leached from containers in the presence of hot water (CAP, 2014). According to World Health Organisation (WHO) in 2012, at least 30% of all cancers could be prevented through healthy diet. Symptom present after one to seven days of consumed instant noodles was early sign and symptoms of cancer and metabolic syndrome (Shin et al. 2014).

5.6 Awareness Level on Impact of Instant Noodles Consumption

The finding of this study shows that the awareness level of respondents toward the impact of instant noodle consumption was moderate. This is concurrent with the level of instant noodle consumption- rare. According to Gan et al. (2011), the selection of unhealthy food, the ease of availability of fast food, high cost of healthy food could have negative impact on university student's eating behaviour. Most of respondent knew the impact of instant noodle. This is similar to Hakim et al. (2012).

This is because fast foods like instant noodle are quickly to be prepared and most people afford to have it. Besides that, the students would not have much time to prepared food at college (Hakim et al., 2012). The consumption of instant noodle among undergraduate student in this study was low. This means that the respondent may had some awareness towards the impact of instant noodle.

5.7 Strength and Limitation of Study

This study may serve as preliminary subjective data on instant noodle consumption study and on the impact of instant noodles consumptions among undergraduate students in health campus, Universiti Sains Malaysia. Besides that, this study also shows the needs for every person concern on their health in term of their nutritional intake to prevent from disease. On the other hand, the questionnaire used was in its original version which is English Language that enables better understandings by the respondents since the health campus students were taught in English. The questionnaire used in this study had been tested for its reliability with Cronbach's alpha value of more than 0.7. This indicated that the questionnaire is desirable for basic research or evaluation studies

However, there were some limitations of this study. The sample size was too small and involving students of certain course only. Thus, the result could not be generalized to all students of health campus. The researcher also was unable to perform Part D of the questionnaire due to some technical problem and time limitation.

The findings of this study also may help to advance the understanding of prevalence and awareness level on the bad effect of instant noodle among undergraduate student in USM. Besides, information from findings could raise the awareness between public and health care provider and professional in term of nutritional awareness and prevention of disease. This study also will provide a platform for further research in this area.

Chapter 6

Conclusions

6.1 Introduction

This study has highlighted the issues of undergraduate students of the impact of instant noodle consumption by looking at its association with socio-demographic characteristic. This chapter details the conclusion reached from the result. Suggestion and recommendation for future research were also provided.

6.2 Summary of the Study Findings

Prevalence and awareness level on the impact of instant noodle consumption were moderate among undergraduate students in Health Campus, USM. Majority of the respondents were categorised as rare instant noodle consumption but the awareness level was high for certain item related to instant noodles. Most of the respondents were health students and understand some of the side effect of instant noodle but they still consumed instant noodles. This is because the low awareness level, knowledge and lifestyle of university student.

6.3 Implication and Recommendation

6.3.1 Implication to Nursing Practice

This study revealed the awareness on the impact of instant noodle consumption among undergraduate students of health campus in USM is moderate. This findings indicates a need for health education on eating habit and long term side effect of instant noodles. This knowledge is important to improve awareness, knowledge and prevention of disease in health campus student in USM. The findings also help to raise awareness among undergraduate student of health campus in USM regarding the impact of instant noodles consumption to health.

This is because prevention of the disease and eating behaviour is essential to maintain healthy and as a precaution. Moderate level of awareness about impact of instant noodle consumption need to be addressed because it means that some of the students still having lack of awareness regarding eating behaviour, health food and disease prevention.

6.3.2 Implication to Nursing Education

Nutritional support in nursing education is very importance. It has long been recognised that nursing care which promotes nutritional intake when and as appropriate can aid recovery from illness and enhance the patients' quality of life. In addition, food and nutrition is one of the eight aspects of care highlighted in The Essence of Care (Department of Health, 2001). Nursing education related to nutritional and healthy food should be implements in nursing curriculum. This is because education is the key factor in enabling nurses to investigate nutritional care appropriately.

Nursing students need to be educated in the screening and assessment, planning, implementation and evaluation of nutritional care. Nowadays, registered nurse is becoming more involved in aspects of nutritional care relating to health education commonly used in hospital and community. Nutritional care is a multidisciplinary undertaking and the roles of other health care professionals need to be emphasised.

6.3.3 Recommendation for Future Research

It is suggested future to be done with larger sample size which involve different target groups such as adult in general population, school children and also health professional. Besides that, objective data such as respondents' vital sign and physical examination should be added to make the research more valuable.

6.4 Conclusion

Instant noodle consumption among undergraduate students in Health Campus was low. However, there is a need to increase their awareness level and further reduce the consumption of instant noodle. The impact of instant noodles to health should be emphasizes more to the public so that people can improve their nutritional and health status. The study provides a good platform for further research in this study area in the future.

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Appendices

Appendix I: Questionnaire

Questionnaire Form

Awareness on the Impact of Instant Noodles Consumptions among Undergraduate Students Health Campus, USM

This questionnaire consists of 3 parts which are Part A, Part B, Part C and Part D. Students' socio-demographic data and health history included in Part A while Part B is about instant noodles consumptions. Part C is regarding awareness level on the bad effects of instant noodles consumption and Part D is health assessment.

PART A: SOCIO-DEMOGRAPHIC DATA & HEALTH HISTORY

Instruction: Please fill in the blank or tick (✓) in the box provided

1. Date: _____

2. Age: _____ years old

3. Gender: Male ☐ Female ☐

4. Race: ☐ Malay ☐ Chinese ☐ Indian ☐ Others: (please specify: _____)

5. Your school:

PPSP ☐

PPSG ☐

PPSK ☐ (Please specify the program name: _____)

6. Year of study:

Year 1 ☐

Year 3 ☐

Year 5 ☐

Year 2 ☐

Year 4 ☐

7. Monthly Family Income: RM _____

8. Total number of people supported in this income:

_____ people

Health History

Question 9 and 10 is only meant for female student. Male student, proceed to question 11 and 12.

9. Your age at first menstrual period

____ Years old

☐ Not applicable

10. Your menstrual period

☐ Regular (2-7 days, every month, 21-35 days in a cycle)

☐ Not Regular (irregular days, month and cycle)

☐ Not applicable

11. Your Height: ____ cm

12. Your Weight: ____ kg

Medical History

13. Have you ever had any medical problem as below:

☐ Hypertension

☐ Heart Disease

☐ Diabetes Mellitus

☐ Cancer

☐ Chronic Kidney Disease

☐ Other (Please specify: _____)

☐ Not applicable

14. Are you on any medication?

☐ Yes (Please specify medication name: _____)

☐ No

Have you ever feels the following symptoms each time consuming instant noodle?

No.	Symptom	Yes	No
15.	Infection of hairs follicle. (Acne, Itchy)		
16.	Headache		
17.	Depression		
18.	Facial flushing		
19.	Chest pain		
20.	Palpitation (irregular heart beat)		
21.	Difficulty in breathing		
22.	Burning sensation on stomach		
23.	Bloating and irregular bowel movement		
24.	Fatigue		

PART B: INSTANT NOODLES CONSUMPTIONS

Instruction: the researcher is interested in knowing the prevalence of instant noodles consumptions. Please fill in the blank or tick (✓) in the box provide.

25. Brand of your favourite instant noodle. (You can tick (✓) more than one respond)

- ☐ Maggie
 ☐ Sedap
 ☐ Ruski
☐ Mamee
 ☐ Indomee
☐ Others (Please specify: _____)

26. Frequency of consuming instant noodle.

- ☐ More than 3 times/week
 ☐ 2-3 times/week
☐ Once a week
 ☐ 2-3 times/ month
☐ Once a month
 ☐ Less than once a month

27. Unit of consuming instant noodle per intake.

- ☐ 1 Unit
 ☐ 2 Units
☐ 3 Units
 ☐ More than 3 Units

28. Mostly time of consuming instant noodle.

- ☐ Breakfast
 ☐ Brunch
 ☐ Dinner
☐ Lunch
 ☐ Afternoon
 ☐ At night

29. Frequency of instant noodle bought.

- ☐ More than 3 times a week
 ☐ 2-3 times/week
☐ Once a week
 ☐ 2-3 times/month
☐ Once a month
 ☐ Less than once a month

30. Packet of instant noodle bought (5units / packet)

- ☐ 1 packet
 ☐ 2 packets
☐ 3 packets
 ☐ More than 3 packets

PART C: AWARENESS LEVEL ON THE BAD EFFECT OF INSTANT NOODLE CONSUMPTION ON HEALTH

Instruction: researcher interested to know your level of awareness level on the bad effect of instant noodles consumptions on health. Please tick (✓) in the table provided

(1-Strongly disagree, 2-Disagree, 3- Not Sure, 4- Agree 5- Strongly Agree)

No.	You know that instant noodle;	1	2	3	4	5
31.	Contain high sodium level (800 mg per 100g)					
32.	Cup type is dangerous compared to bag types					
33.	Takes 3 days to completely digested in stomach					
34.	Contain high flavour enhancer (example: MSG, E627, E635)					
35.	Contain monosodium glutamate (MSG) is highly addictive food					
36.	MSG can caused increase in Body Mass Index (BMI) lead to obese					
37.	Can lead to chronic kidney disease for higher intake					
38.	One of the factors that contributes to cancer					
39.	Can caused endometrial cancer					

PART D: HEALTH ASSESSMENT

40. Blood pressure: _____ mmHg

41. Heart rate: _____ per minute

42. Scalp condition:

☐ Alopecia/ hair lost

☐ Dandruff

End of Question

Thank You for Your Cooperation

Appendix II: Research information – Participant

RESEARCH INFORMATION FOR PARTICIPANT

Research Title : Awareness on the Impact of Instant Noodles
Consumptions among Undergraduate Students Health
Campus, USM

Researcher's Name : Nur Aqilah BintiAmeran

Researcher's ID Number : 116301

INTRODUCTION

This questionnaire is a study to assess the knowledges and awareness level on the bad effect of instant noodles consumptions among undergraduate students of Health Campus, USM.

You are invited to take part voluntarily in this research study. The questionnaires provided consist of 42 questions. Before agreeing to participate in this research study, it is important that you have to read and understand this form. It describes the purpose, procedures, benefits and risk of the study. It also describes the alternative procedures that are available to you and your right to withdraw from the study at any time. If you participate, you will receive a copy of this form to keep for your records.

PURPOSE OF THE STUDY

This study aimed to assess the awareness level on bad effect of instant noodles consumptions among undergraduate student in Health Campus, USM, KubangKerian, Kelantan.

QUALIFICATION OF PARTICIPATE

You are qualified to participate if you are:

- Male and female undergraduate students of Health Campus, USM
- Agreed to participate in this research

You are not qualified to participate if:

- Undergraduate students of other university
- Post graduate students at Health Campus, USM

STUDY PROCEDURES

If you agreed to participate in this study, you will be asked to complete a set of questionnaires distributed by the researcher. Following informed consent, you will complete self-administered questionnaires. The time taken to complete the questionnaire will be approximately 30 minutes.

BENEFITS

This research project will help enhance the knowledge regarding instant noodles and improve student's health.

RISKS

This study is a non-invasive study. However, the participants feel slightly full and stress stimulated while answering the questionnaire. As participant, you have to stop answering the questionnaire when being emotionally disturbed and there will be no risk because the study used a survey questionnaire. All information will be kept confidential.

PARTICIPATION IN THE STUDY

Your participation in this study is entirely voluntary. You may refuse to take part in the study or you may stop participating in the study at any time, without any loss of benefits to which you are otherwise entitled.

QUESTIONS

If you have any questions about this study or your rights, please contact:

Ms. Nur Aqilah Ameran
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Universiti Sains Malaysia
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16150 Kubang Kerian,
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If you have any questions regarding the Ethical Approval, please contact:

Mr. Mohd Bazlan Hafidz Mukrim
Secretary of Research Ethics Committee (Human) USM
Clinical Sciences Research Platform, USM Health Campus.
Tel. No.: 09-767 2354 / 09-767 2362
E-Mail : bazlan@usm.my or jepem@usm.my

CONFIDENTIALITY

Your personal information will be kept confidential by the researcher and will not be made publicly available unless disclosure is required by law. Data obtained from this study that does not identify you individually will be published for knowledge purposes. Your records may be reviewed by the researcher, the Ethical Review Board for this study, and regulatory authorities for the purpose of verifying data. Your personal information may be held and processed on a computer. By signing this consent form, you authorize the record review, information storage and data transfer described above.

SIGNATURES: _____

To be entered into the study, you must sign and provide the date on the signature page (see Appendix 4)

Appendix III: Participant Information and Consent Form

Participant Information and Consent Form

(Signature Page)

Research Title : Awareness on the Impact of Instant Noodles
Consumptions among Undergraduate Students Health
Campus, USM

Researcher's Name : Ms. Nur Aqilah BintiAmeran (No. Matric: 116301)

To become a part of this study, you must sign this page. By signing this page, I am confirming the following:

- I have read all the information in this Student Information and Consent Form **including any information regarding the risk in this study** and I have had time to think about it.
- All of my questions have been answered to my satisfaction.
- I voluntarily agree to be part of this research study, to follow the study procedures, and to provide necessary information to the researcher as requested.
- I may freely choose to stop being a part of this study at any time.
- I have received a copy of this Student Information and Consent Form to keep for myself.

Student's Name (Print or type)

Student's Initials

Student's I.C No. (New)

Student's I.C No. (Old)

Signature of Student

Date (dd/mm/yy)

Name and Signature of Individual

Date (dd/mm/yy)

Conducting Consent Discussion

(Print or Type)

Name & Signature of Witness

Date (dd/mm/yy)

Appendix IV: Gantt Chart

	Project Activities	2015				2016					
		<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mac</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>
1.	Selection of research topic, proposal preparation and presentation, ethical approval										
2.	Data collection										
3.	Data analysis										
4.	Thesis write up										
5.	Thesis draft submission for evaluation										
6.	Final presentation										
7.	Thesis correction & final report writing										
8.	Submission of thesis (final draft)										

PLANNED RESEARCH MILESTONE

October 2015	: Completion of proposal preparation
November 2015	: Completion of proposal presentation
December 2015	: Ethical approval granted
February 2016	: Completion of data collection
March 2016	: Completion of data analysis
May 2016	: Completion of thesis writing and final presentation
June 2016	: Thesis submission

AppendixV: Permission from Author

Nur Aqilah Ameransend via messenger. (04 October 2015 @ 0000)

Dear Madam SujittraKrittayaannop.... I'm Nur Aqilah Ameran, an undergraduate nursing student at UniversitiSains Malaysia, KubangKerian, Kelantan, Malaysia. I am in my final year now and is require to conduct a one semester research project. The proposed title of my research project is 'instant noodles intake among undergraduate students in Health Campus, USM'. I had read your article title: "CONSUMER BEHAVIOR AND INFLUENTIAL MARKETING FACTORS ON BUYING DECISION OF CHINESE EGG NOODLE IN NAKHONRATCHASIMA: A CASE STUDY OF CHAROENPOL COMPANY". I interested to use your questionnaire as one of my references. Thus, I would like to ask your permission to adapt the questionnaire and the scoring method used in your study. Your kind consideration is very much appreciated. I am looking forward for your reply. Thank you.

SujittraKrittayaannop replied via messenger. (05 October 2015 @ 2115)

Yes, Madam. I apologize for my late reply. Now I have to look after my 6 month baby boy. Thus, I did not come to connect FB frequently. But as you said, I am very glad to hear that my Independent Study will be beneficial for you. ^^

Nur Aqilah Ameran replied via messenger. (05 October 2015 @ 2220)

Do you give me permission to use your questionnaire in my study?

SujittraKrittayaannop replied via messenger. (05 October 2015 @ 2238)

Ofcourse!!!! ^^ My pleasure!!!!

Appendix VI: Permission Letter Conduct Research



UNIVERSITI
SAINS
MALAYSIA

PUSAT PENGAJIAN SAINS KESIHATAN
SCHOOL OF HEALTH SCIENCES
MEMORANDUM

No. Rujukan : PPSK(A)/PS/05 (152) Jld. IV
Tarikh : 30 November 2015
Daripada : Dekan
Pusat Pengajian Sains Kesihatan
Kepada : Pengarah
Hospital USM
Kampus Kesihatan
Dekan Pusat Pengajian Sains Perubatan
Dekan Pusat Pengajian Sains Pergigian
s.k. : Dr. Dariah Mohd Yusoff
Ketua Kursus GTJ312/6, PPSK

MEMOHON KEBENARAN MENJALANKAN PROJEK PENYELIDIKAN

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Adalah dimaklumkan bahawa dua (2) orang pelajar Sarjana Muda Sains Kesihatan (Kejurutawaran), Pusat Pengajian Sains Kesihatan Sidang Akademik 2015/2016 akan menjalankan projek penyelidikan yang melibatkan pelajar dan pekerja di Kampus Kesihatan, Universiti Sains Malaysia.

3. Berikut ialah nama pelajar dan tajuk kajian yang akan dijalankan oleh pelajar

BIL.	NAMA PELAJAR	NOMBOR MATRIK	TOPIK KAJIAN
1.	NUR ACILAH SINTI AMERAN	116301	Instant Noodles Consumption among Undergraduates Students in Health Campus, USM
2.	NUR HAMIMI BINTI CHE ALANG	116305	Knowledge of Cardiovascular Disease Risk Factors among Non-Academic Staffs at Health Campus, USM

4. Untuk makluman tuan, pelajar telah menjalani pembentangan proposal di Pusat Pengajian Sains Kesihatan yang turut diwakili oleh Ahli Jawatankuasa Etika (Manusia) Penyelidikan yang dilantik. Pelajar kini sedang menunggu keputusan etika secara rasmi untuk memulakan kajian.

KAMPUS KESIHATAN

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HEALTH CAMPUS



ISO 9001:2008 Certified

Appendix VII: Ethical Approval



Jawatankuasa Etika Penyelidikan Manusia USM (JEPeM)
Human Research Ethics Committee USM (HREC)

18th February 2016

Nur Aqilah Ameran
Undergraduate Student (Nursing)
School of Health Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan.

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JEPeM Code : USM/JEPeM/15100422

Protocol Title : Awareness on the Impact of Instant Noodles Consumptions among Undergraduate Students in Health Campus, USM.

Dear Mr/Miss,

We wish to inform you that your study protocol has been reviewed and is hereby granted approval for implementation by the Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia (JEPeM-USM). Your study has been assigned study protocol code **USM/JEPeM/15100422**, which should be used for all communication to the JEPeM-USM related to this study. This ethical clearance is valid from **February 2016** until **January 2017**.

The following documents have been approved for use in the study.

1. Research Proposal

In addition to the abovementioned documents, the following technical document was included in the review on which this approval was based:

1. Participant Information Sheet and Consent Form (English version)
2. Questionnaire – (English version)

Attached document is the list of members of JEPeM-USM present during the full board meeting reviewing your protocol.

While the study is in progress, we request you to submit to us the following documents:

1. Application for renewal of ethical approval 60 days before the expiration date of this approval through submission of JEPeM-USM FORM 3(B) 2014: Continuing Review Application Form. Subsequently this need to be done yearly as long as the research goes on.
2. Any changes in the protocol, especially those that may adversely affect the safety of the participants during the conduct of the trial including changes in personnel, must be submitted or reported using JEPeM-USM FORM 3(A) 2014: Study Protocol Amendment Submission Form.
3. Revisions in the informed consent form using the JEPeM-USM FORM 3(A) 2014: Study Protocol Amendment Submission Form.
4. Reports of adverse events including from other study sites (national, international) using the JEPeM-USM FORM 3(G) 2014: Adverse Events Report.
5. Notice of early termination of the study and reasons for such using JEPeM-USM FORM 3(E) 2014.
6. Any event which may have ethical significance.
7. Any information which is needed by the JEPeM-USM to do ongoing review.
8. Notice of time of completion of the study using JEPeM-USM FORM 3(C) 2014: Final Report Form.

Please note that forms may be downloaded from the JEPeM-USM website: www.jepem.kk.usm.my

<Approval><Nur Aqilah><USM/JEPeM/15100422

Page 1 of 2