

**KNOWLEDGE, PERCEPTION AND PATTERN OF CONSUMPTION OF
INSTANT NOODLE WITH THE SEASONING AMONG
UNDERGRADUATES OF OBAFEMI AWOLOWO UNIVERSITY,
ILE-IFE, OSUN STATE**

BY

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CERTIFICATION

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DEDICATION

This research work is dedicated to the Almighty God for His abundant blessings and for seeing me through this programme.

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ABSTRACT

Evidence has shown that high intake of salt may contribute to the increase in non-communicable diseases such as high blood pressure (HBP). Consumption of food items with high salt content has great potential to predispose individuals to HBP. Knowledge, pattern of consumption and perception of the risk factor associated with consumption of salt being used as food seasoning among undergraduate has not been fully explored. This study therefore was aimed at assessing the knowledge, perception and pattern of consumption of instant noodle (IN) with the seasoning among undergraduates of Obafemi Awolowo University, Ile Ife, Nigeria.

A descriptive cross-sectional study was conducted among 421 randomly selected undergraduates. A three-stage sampling technique involving simple random and proportionate sampling techniques was used. A validated semi-structured, self-administered questionnaire which contains a 14-point knowledge scale questions, questions relating to pattern of consumption, perception towards the use of IN seasoning and perceived factors that encourage IN consumption with the seasoning. Knowledge scores ≤ 7 and > 7 were classified as poor and good respectively. The data were analysed using descriptive statistics and Chi-square test at $p=0.05$ level of significance.

Respondents' age was 20.0 ± 2.7 years, 51.1% were females, and 32.8% were in Basic Sciences, 27.8% from Social Sciences, Engineering 12.4%, and Art 27.1%. Knowledge score was 7.0 ± 3.2 ; respondents with poor and good knowledge about instant noodle seasoning (INS) were 49.4% and 50.6%, respectively. Majority (68.4%) believed that IN with the seasoning contained constituents that could pose danger to health and 83.4% agreed that high salt intake could lead to increase blood pressure. Many (53.7%) of the respondents perceived that there was a high salt content in INS, However, many (54.7%) made use of all the spices of the noodles when cooking it. Most (92.0%) ate IN with the seasoning because it takes less time to prepare. More than one-third of the respondents had the perception that instant noodles is (38.5%) and isn't (34.9%) a healthy food. Many (72.9%) reported that IN is their choice food whenever they did not have time to cook and 70.3% claimed they ate IN because it is cheap. Most (98.3%) of the respondents' stated that they consume instant noodles and majority (72.9%) of them eat it both in school and at home and about 70% of the respondents' had been eating instant noodles for more than five years. There was

a significant association between respondents' sex and their knowledge about INS; more females (57.7%) had good knowledge about IN seasoning compared to their male counterparts (43.2%).

Knowledge of respondents on the constituents of IN and the risks involved in high salt intake was fair. However, the pattern and reasons for consumption of IN with the seasoning among respondents was unfavourable. Therefore, health education strategies such as training, enlightenment campaign alongside with promulgation of food industry policy that will regulate salt content of packaged foods would be useful in ensuring behavioural change among undergraduates.

Keywords: Instant noodle seasoning powder, Pattern of consumption, Undergraduate, High Salt intake

Word counts: 479

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ACRONYMS

BP: Blood Pressure

CAD: Coronary Artery Disease

CHD: Coronary Heart Disease

CVD: Cardiovascular Diseases

FAO: Food and Agricultural Organization

HBP: HighBlood Pressure

HDL: High Density Lipoprotein

LDL: Low Density Lipoprotein

NCD: Non-communicable Diseases

IN: Instant Noodle

INS: Instant Noodle Seasoning

USAID: United State Agency for International Development

WHO: World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Nigeria is undergoing epidemiological transition in food consumption pattern. Evidence has shown a decline in prevalence of many infectious diseases and a steady increment of non-communicable diseases (NCDs) (Adedoyin and Adesoye, 2005). One of the major factors responsible for this trend is the changes in food consumption pattern.

The traditional diet in Nigeria had been largely made of fibre-rich carbohydrates, minimal fats, and sparing protein. However, this profile has seen a gradual change over the years. There has been rapid uptake of the elements of globalization; free trade agreements have opened the Nigerian markets to foreign goods. Often these foreign meals are quick in preparation, energy-dense, high in salt, and high-sugar containing meals. Furthermore, they come with a lower price tag compared to those locally sourced. Change in food consumption of such a manner is called nutrition transition (Mennen, Mbanya, Cade, Balkau, Sharma, and Chungong 2000).

Fast food being defined by oxford dictionary as easily prepared food served in snack bars and restaurants as a quick meal or to take away. It is (fast food) the term given to food that is prepared and served very quickly, so also meals with low preparation time can be considered fast food. Typically, the term refers to food sold in a restaurant or store with preheated or precooked ingredients and served to customer in a packaged form for take-out/take-away. (John Jakle, 2002).

Instant noodle, a popular instant meal in Nigeria, is a precooked and usually dried noodle block, sold with flavouring powder and/or seasoning oil, usually in a separate packet; though in the case of cup noodles the flavouring is often loose in the cup. Dried noodle blocks are cooked or soaked in boiling water; some instant noodle products are seal packed - these can be reheated or eaten straight from the packet. The main ingredients of the dried noodle are wheat flour, palm oil, and salt (USAID). Common ingredients of the flavouring powder are salt, monosodium glutamate, seasoning, and sugar. Instant noodles are marketed worldwide under brand names.

As at 2013, 105.5 billion packets of instant noodles were consumed worldwide. From this, China consumed 46.2 billion packs, Indonesia 14.9 billion, USA 4.3 billion, UK 370 million packet and Nigeria been the 2nd African nation and the 12th country in the world consumed 1.4 billion following Brazil which consumed 2.4 billion packet (World Instant Noodle Association, 2014).

Nigeria being the 12th largest consumer of instant noodles in the world with Indomie noodles being the most popular brand and it is consumed in most households cutting across socioeconomic lines. In many ways, it has changed the culinary model for many urban Nigerian families, replacing rice for many as a staple. The popularity of instant noodles has been expanding very rapidly during recent decades due to their convenience and reasonable price (Ekene Onu, 2010).

Instant noodles are often criticized as unhealthy or junk food (The Noodles War, The NEWS, Nigeria's authoritative weekly news magazine, 2008). A single serving of instant noodles is high in carbohydrates and fat, but low in protein, fibre, vitamins and minerals. (Juyeon, Jung-Sug, Young, Hae, Jeongseo, 2011).

Existing evidence suggests that a high dietary intake of salt may contribute to the rise in blood pressure, and can promote the development of hypertension, or aggravate hypertension already present (Australian Institute of Health and Welfare, 2006). Raised blood pressure is one of the most common and preventable risk factors for cardiovascular diseases. Law and co-workers (1991) assessed the relationship between mean sodium intakes and mean blood pressure across a broad range of populations and showed positive correlations among both economically developed and underdeveloped groups of communities. These investigators also found consistent relationships between blood pressure and 24-hour urinary sodium excretion within 14 cross-sectional studies conducted in American, European and Asian countries, after adjusting for the large degree of day-to-day variation in urine sodium excretion.

In children, the prevalence of hypertension appears to be increasing (Sorof, Lai, Turner, Poffenbarger, and Portman 2004). This is due in part to the increasing prevalence of childhood obesity and changes in dietary patterns as well as growing awareness of this disease. There is evidence that childhood hypertension can lead to adult hypertension. Hypertension is a known

risk factor for coronary artery disease (CAD) in adults, and the presence of childhood hypertension may contribute to the early development of CAD. Reports show that early development of atherosclerosis does exist in children and young adults and may be associated with childhood hypertension (Berenson, Srinivasan, Bao, Newman, Tracy, and Wattigney, 1998).

In Nigeria, the morbidity and mortality rate of systemic hypertension-related complications are also on the rise. Hitherto, ischemic heart diseases were formerly considered to be rare in Nigeria; however, recent data have shown it to be on the rise (Sani, Adamu, Mijinyawa, Abdu, Karaye, and Maiyaki, 2006). Other reports suggest an increase in morbidity and mortality associated with complications of hypertension, such as stroke, heart failure and renal failure (Onwuchekwa, Chinenye, 2010; Onwuchekwa, Asekomeh, 2009).

Another concern regarding the consumption of fried foods, including instant noodles, is the possible presence of oxidation products resulting from poor maintenance of the oil. If the cooking oil is not maintained at the proper temperature or changed as often as necessary, these oxidation products, which are suspected to pose various health risks, can be present in the foods. (Gotoh, Watanabe, Osato, Inagaki, Iwasawa, and Wada, 2007).

Despite the health risk associated with consumption of instant meals, especially those high in salt like noodles, more and more Nigerian children and adults continue to feed on them. This study aims to investigate the knowledge, perception and pattern related to consumption of instant noodles among Obafemi Awolowo University undergraduates. The findings of this study will help in the design of educational programmes to improve diet, formulation of health policies that will encourage healthy eating.

1.2 STATEMENT OF THE PROBLEM

Food consumers in the world don't have enough time to prepare meals from scratch. This has encouraged the neglect of traditional foods and embrace of ready-to eat meals. Instant noodle was introduced to Nigeria in 1998 and many more brands have sprung up after. Instant noodle brands are now eaten in most households across the country. The salt content of this product has been a concern to nutrition and health professionals. However, more and more Nigerians, especially children and adult continue to eat them because of the convenience.

The principal ingredients in instant noodle is the major public health concern, the high salt content can predispose consumers to increase in blood pressure. The WHO and the Food and Agricultural Organization (FAO) of the United Nation suggested that sodium intake should be less than 2000mg or 5g of salt a day. But consequentially, in a study to determine the salt level of Instant noodles in China, 48 instant noodle sample were collected from supermarkets, grocery shops, and the information listed on the nutrition labels was examined. Findings from the study showed that the average sodium content was found to be between 834 to 5800 mg of sodium per 100g (Centre for food safety, Hong Kong, 2010).

Excessive dietary intake of salt is an established risk factor for high blood pressure/hypertension. Though, many childhood hypertensions is linked to complications such as renal dysfunction, increased salt intake may aggravate or cause increase in blood pressure of children as well. Children who are hypertensive are likely to grow up to be hypertensive adults.

It has not been well ascertained if consumers know the contents of instant noodles seasoning and risk associated with excessive consumption of some the component elements. Thus, this study will examine the knowledge, perception and pattern of consumption instant noodles with seasoning among undergraduates of Obafemi Awolowo University.

1.3 JUSTIFICATION FOR THE STUDY

Raised blood pressure (BP) throughout its range is a major cause of cardiovascular disease. Although raised BP and cardiovascular disease (CVDs) typically present in adults, the origins commonly begins in childhood. BP has been shown to follow a tracking pattern and those children who have BP at the higher end of BP distribution are more likely to develop high BP as adult. Therefore, it is important to start intervention to lower BP levels in children and young adult and to prevent the rise in BP with age. Interventions to prevent increased BP must target the food consumption pattern as diet plays a major role in the development and management of hypertension. (Naomi, Feng, Peter and Graham, 2014).

The findings of this present study will give an insight into the level of knowledge, perception and pattern of consumption instant noodles with the seasoning among Obafemi Awolowo University Undergraduate. This will be useful in nutrition education and policy formulation that will lead to

the reduction in the consumption of high salt containing foods, including instant noodles, and eventually reduction in the prevalence and incidence of hypertension. This study will also contribute to the growing literature on Instant noodle since there is a dearth of studies examining instant noodles seasoning consumption pattern in Nigeria.

This study will add value to the field of health promotion and education on instant noodles and will also serve as a point of reference for future researchers who wish to conduct further research work in the field. This study will also explore the pattern of consumption of instant noodle among students in order to bring to the fore the various reasons of involving in the practice as it relates to promoting their health. The wide dearth of knowledge as a result of little work done on this phenomenon will be bridged and members of the public will be informed on the risk involved in the consumption of instant noodle.

1.4 RESEARCH QUESTIONS

1. What is the level of knowledge of Obafemi Awolowo University undergraduates about instant noodles?
2. How do Obafemi Awolowo University undergraduates perceive use of instant noodles seasoning in relation to health?
3. What is the pattern of consumption of instant noodles with the seasoning among Undergraduates of Obafemi Awolowo University?
4. What are the factors encouraging the consumption of instant noodles with the seasoning among of undergraduate of Obafemi Awolowo University?

1.5 BROAD OBJECTIVE

This study aimed to assess the knowledge, perception and pattern of consumption of instant noodles with the seasoning among undergraduates of Obafemi Awolowo University.

1.6 SPECIFIC OBJECTIVES

1. To assess the level of knowledge of undergraduates of Obafemi Awolowo University about instant noodle with the seasoning.

2. To determine their perception towards the use of instant noodles seasoning in relation to their health.
3. To examine pattern of consumption of instant noodles seasoning among undergraduates of Obafemi Awolowo University.
4. To identify the factors encouraging the consumption of instant noodles among undergraduate Obafemi Awolowo University?

1.7 HYPOTHESIS

1. There is no association between level of knowledge and sex of Obafemi Awolowo University undergraduates.
2. There is no association between respondents' sex, knowledge and pattern of instant noodles consumption.

1.8 OPERATIONAL DEFINITION OF TERMS

Fast Food is the term given to food that is prepared and served very quickly. Any meal with low preparation time can be considered fast food.

CHAPTER TWO

LITERATURE REVIEW

2.1 Evolution and consumption of instant noodles

Instant noodles are known to be a steamed and deep-oil fried noodle that is also known as ramen in Japan and ramyon in Korea, originated in Japan in the 1950s and are currently produced in over 80 countries. As of 2008, approximately 93.6 billion servings of instant noodles have been consumed worldwide. Chinese consumed 45.2 billion packages of instant noodles in 2008, representing 51% of the global consumption of instant noodles, whereas Indonesians consumed 13.7 billion packages, Japanese consumed 5.1 billion packages, Americans consumed 4.3 billion packages, and South Koreans consumed 3.3 billion packages. (Juyeon *et al*, 2011).

Nigeria is the 13th largest consumer of instant noodles in the world. Indomie noodles being the most popular brand and it is consumed in most households cutting across socioeconomic lines. In many ways it has changed the culinary model for many urban Nigerian families, replacing rice for many as a staple. The popularity of instant noodles has been expanding very rapidly during recent decades due to their convenience and reasonable price (Ekene, 2010)

Various researches has been conducted in order to increase the nutritional value of Instant noodles by fortifying either the flours used to make the noodles or the seasoning powders consumed with the noodles (Juyeon *et al*, 2011)

2.2 Consumption globally

Instant noodles are widely consumed throughout the world and it is a fast growing sector of the noodle industry. The world instant noodle market was projected to reach 158.7 billion packs by the year 2010. This is because instant noodles are convenient, easy to cook, low cost and have a relatively long shelf-life. Noodles are widely consumed throughout the world and their global consumption is second only to bread. The instant noodle market is growing fast in Asian countries, and is gaining popularity in the Western market. (Vijay *et al*, 2008).

Wheat flour which is usually used to make instant noodles is not only low in fibre and protein contents but also poor in essential amino acid lysine. And as there is an increasing awareness that health may be modified through diet, it has been a challenge for food scientists in finding more

nutritious and healthy substitutes or alternatives to wheat flour used in noodles production. (Vijay et al, 2008).

Instant noodles are often criticized as unhealthy or as a type of junk food. A single serving of instant noodles is usually high in carbohydrates but is low in fibre, vitamins, and minerals. Instant noodle manufacturers have made efforts to lower the sodium and fat content in response to public health concerns. Instant noodles are now promoted as a nutrient vehicle in developing countries by fortifying either the flours used to make the noodles or the seasoning powders consumed with the noodles. (Juyeonet *al*, 2011)

2.3 Knowledge of fast food and instant noodle

In a study conducted by Arulogun and Owolabi, (2011), they found out that undergraduates knew that fast foods are prepared with high salt content, high sugar content, saturated fats and cholesterol and this supported by Wart, 2006 who stated that any food item that is high in sugar, salt and fat can be referred to as junk or fast food.

The belief of respondents that excessive consumption of fast foods has adverse effect on health is corroborated by Rijal, 2007 report that being overweight is a risk factor for diabetes and that consuming excess fast foods increase this risk and those of Tucker and Buranapin, 2006, who documented that the movement towards more fats, sugar, salt and refined foods moves beyond the optimal nutrient intake adequacy state to one in which diets contribute to rapidly escalating rates of chronic diseases (Arulogun et. al., 2011). They also stated that there was a high level of awareness and knowledge of the constituents of fast foods and its risk for developing NCDs in future, respondents still engage in the consumption of this category of foods. In a study among adolescents by Chan et. al., 2009, they found out that the adolescents said that Eating a narrow range of foods, foods with preservatives or additives, deep fried foods, and fast foods were most often reported as unhealthy. Consuming late night snacks, eating too much, and eating at irregular times were perceived as unhealthy. Certain foods and drinks such as milk, water, meat, fish, and vegetables were perceived as healthy because they contained protein and other nutrients.

2.4 Pattern of consumption of fast foods and instant noodle

Eating fast foods for meals or snacks is especially popular with adolescents and young adults. During early adulthood, many changes begin that lead to the development of diseases of aging several years later (Stang et al, 2008). Large increases in caloric intake have occurred in the past decade to match longer term shifts in eating patterns (Nielsen et al., 2002). Among issues of great concern especially among adolescents have been the greater intake of sugar, fatty foods, and other caloric sweeteners, therefore, the greater consumption of foods consumed away from the home, the greater consumption of fast foods (Ludwig et al,2001; Afolabi, Towobola, Oguntona, and Olayiwola, 2013). High prevalence of unhealthy eating habits was recorded among the participants of a study carried out in Sokoto by Awosan et al (2014). While the relatively high prevalence of snacking (49.9%) among the participants in this study is at variance with the very high prevalence of snacking (92.4%) reported in a study by Chung et al. (2003) among female college students in students in Seoul, South Korea, it is in agreement with 33.0% prevalence of snacking reported in another study by Olumaikaye et al. 2008, among adolescents in Osun State, Nigeria.

The consumption of fast foods plays lots of roles on health. In the same vein, nutritional habits acquired during adolescence have a significant impact in the short and long term; these include irregular meals, snacking, eating away from home and following other nutrition alternative dietary patterns which characterize the food habits of young adults, arising from adolescence (Story et al, 2002). The concept of fast food eating has expanded into food sales in schools (Arulogun and Owolabi, 2011). In both developing and developed countries of the world, there is an epidemic of obesity that is affecting the health and well-being of millions of young adults worldwide(SCN, 2006). There are many reasons for this, most importantly, is the high levels of commercial marketing of energy-dense, nutrient-poor foods that are specifically targeted to young adults (Onyechi and Okolo, 2008). Arulogun, et. al., (2011) found out that pattern of fast food consumption among undergraduates revealed that 80.5% of them consume fast foods weekly. Awosan, et. al., (2014) stated in study that, high proportion of their participants eat fruits and vegetables less than three times in a week or not at all, and those that eat fried foods twice or more in a week were close to half. And Healthy eating habits are developed through socialization, in which families, schools, the community, government and international health organizations may all play an active role. (Chan et al, 2009)

2.5 Factors influencing the consumption of fast food and instant noodle

Adolescence is one of the fastest growth periods of a person's life. During this time, physical changes affect the body's nutritional needs, while changes in one's lifestyle may affect eating habits and food choices. Physical activity and diet are known to be the major lifestyle/environmental factors that are associated with obesity (WHO, 2000). Adequate nutrition is important for a variety of reasons, including optimal cardiovascular function, muscle strength, respiratory ventilation, protection from infection, wound healing and psychological well-being. Adequate nutrition entails a diet that contains the constituents (carbohydrate, fats, proteins, vitamins and minerals) that are required for body building, energy supply, body defence and regulatory functions in quantities commensurate with the body need (Awosan, Ibrahim, Essien, Yusuf, and Okolo, 2014). The concept of fast food eating has expanded into food sales in schools. For many students the day is not complete without observing the “daily ritual” of visiting a fast food joint and most of the fast food restaurants in the cities have begun to open centres within and very close to schools especially university campuses (Aladelokun, 2006; Arulogun and Owolabi, 2011). Afolabi, et al., (2013) opined that consumption of fast foods among undergraduates is increasingly becoming an emerging trend. It is a major source of energy, dietary fat and animal protein though it was shown to be a poor source of micronutrients which consequently increases the susceptibility to the already high prevalence of non-communicable diseases especially in developing countries.

In a study conducted by Onyechi, et al., 2008, they confirmed that undergraduate showed that their diet in the last 24 hours was mostly yam, Indomie noodles, rice, bread and butter, meat pie, biscuits, roasted groundnuts and popcorn and the factors considered in food choice were taste and easy to cook foods. In the last few decades, regular trends of obesity have coincided with changes in dietary habits and physical activity. Adolescents tend to eat differently than they did as children. With after-school activities and active social lives, teens are not always able to sit down for three meals a day. Busy schedules may lead to meal skipping, snacking throughout the day, and more eating away from home. (Eberechukwu, EYam and Nsan, 2013). Most non-communicable diseases especially obesity that are a burden to our public health spring from unhealthy lifestyle that goes on unnoticed but accumulates fat and cholesterol that turns to predispose us to non-communicable diseases. The eating habit and physical activity that should

have started way back at secondary school days may go a long way to affect individual during adulthood (Eberechukwu, et. al., 2013). Onyiriuka, Umoru and Ibeawuchi, (2013) in a study showed that skipping of meals was a common eating habit among adolescent Nigerian urban schoolgirls. This is not surprising, as studies from several other developing countries have reported similar findings. And also find that most adolescents skip their breakfast and the main reasons cited by them were lack of appetite and lack of time.

Sex differences in food selection and intake appear in adolescence. Several studies have described remarkable differences in food choices between male and female. Consistently, female are more likely than male to have higher intakes of fruits and vegetables, higher intakes of dietary fibres and avoiding high-fat foods (Li, Serdula, Bland, Mokdad, Bowman, and Nelson, 2000). In accordance with such more healthy food choice, female usually attach greater importance to healthy eating. In addition, the motivation of weight control is more prominent in females and they are also more likely to be dieting. Female are more dissatisfied with their body weight and shape than male, and attached greater importance to healthy eating (Nmor, Nwakaand Nmor, 2014). In a study among undergraduate students in Southern Nigeria by Nmor et al., (2014), they revealed that the rate of snacking in between meals was relatively higher among females compared to males. The finding that some of the respondents preferred fast foods to home-made meals with reasons such as the fact that fast foods are readily available, without the stress of personal preparation and the more delicious or palatable taste (Arulogun et. al., 2011) which is a reaffirmation of the findings of Robbins et al, 1999 who reported that the time spent at home has decreased due to changes in lifestyle with little or no time for the preparation of home-made meals. This is coupled with the availability of fast food outlets at every nook and cranny of schools and campuses, a trend that would further reduce the intention to cook meals at home. A data suggest a lack of a variety in the appeals used by different socializing agents. Fear (the threat of being ill if you eat unhealthy foods) was frequently mentioned, but no other appeal was reported by the participants. Previous research has found that many adolescents do not perceive a need or urgency to adopt healthy eating because the long term benefits of good health seem too far away. Studies have also shown that physical inactivity, dietary habits, smoking and alcohol intake are related to relative weight in both men and women and Molarius et al., 2007 reported a prevalence of obesity by gender and age group among their study population (Shehu,

Yahaya, Onasanya, Ogunsakin, and Oniyangi, 2010). Afolabi et al., 2013 results showed that the respondents (100%) patronized fast foods though majority (46.7%) do so at no specific time of the day. 42.9% males and 32.9% females patronize and consume fast food at least 1-2 times weekly while only 0.7% of the female respondents do not patronize it at all. The three major reasons adduced by students for patronizing fast food outlets. Meal skipping was common especially among the male respondents (53.6%) and only 35 % of the female respondents skipped meals. Snacking was also observed to be common among those who skipped meals.

2.6 Perception related to instant noodle consumption

There are various misconceptions which exist among the respondents as regards the relationship between fast food consumption and development of non-communicable diseases. For example, some were of the notion that preparation of fast foods under unhealthy conditions and environment could predispose an individual to developing NCDs. However, such foods can lead to gastrointestinal infections which when treated are curable. Some also believed that fast foods are part of normal diet which is contrary to the description of fast food (Arulogun and Owolabi, 2011). From the observed strong emphasis of a balanced diet in a study among adolescents in Hong Kong indicates that the students' perceptions of healthy and unhealthy eating have been shaped by formal health educational sources including the schools and the government. The top-of-mind recall of food pyramids and the government's campaign themes indicated that these messages were well received among the participants (Chan, Prendergast, Bech-Larsen, and Gronhoj, 2009). The data also suggest that perceptions of healthy eating are to some extent gender dependent. Hong Kong boys and girls feel that they have different nutrition needs. Female participants mentioned the importance of calcium intake, as advised sometimes by their mothers, but none of the male participants reported calcium as important. The females' awareness of calcium intake in a healthy diet may also have been generated from heavy commercial advertising campaigns in Hong Kong featuring calcium loss among seniors, especially female seniors. The conception of a balanced diet to an average Nigerian student (Like student, like Parents); is the consumption of palatable food which builds the body irrespective of the nutrients contained in these diets (Onifade, Owojaiye, and Ologun, 2008).

2.7 Sodium intake

Sodium intakes of different populations around the world were first brought to the attention of the research community by publication of Louis Dahl's famous graph in 1960, showing a positive linear relationship between prevalence of hypertension and mean sodium intake across five populations. High levels of dietary sodium (consumed as common salt, sodium chloride) are associated with raised blood pressure (BP) and adverse cardiovascular health. In addition to its effects on BP, excess dietary sodium consumption has been associated directly with coronary heart disease (CHD), stroke and non-cardiovascular diseases.

Louis Dahl's study noted that daily intakes of sodium varied considerably across population groups from 68 mmol/day among Alaskan Eskimos to 462mmol/day in Akita prefecture, northeast Japan. American men had intermediate intakes averaging 171 mmol/day. He also noted a strong north-south trend in death rates from stroke in Japan, which coincided with differences in sodium intake ranging from 239mmol/day in the south to 462 mmol/day in the northeast. The extremely high sodium intakes in the northeast reflected the dietary practice of eating rice with miso soup and pickles, and the use of soy sauce as seasoning.

Despite the wealth of evidence for unfavourable effects of salt consumption on BP and cardiovascular health, public health efforts to decrease sodium consumption have been limited to a few countries. Individuals are often unaware of the detrimental effect of salt on health and in developed countries; the majority of salt consumed is hidden in processed foods.

Raised blood pressure (BP) throughout its range is a major cause of cardiovascular disease. Although raised BP and cardiovascular disease typically present in adults, the origins commonly begin in childhood. BP has been shown to follow a tracking pattern, and those children who have BP at the higher end of the BP distribution are more likely to develop high BP as adults. Therefore, it is important to start interventions to lower BP levels in children and to prevent the rise in BP with age, particularly because there has been a trend of increase in British children's systolic BP during the past 3 decades.⁶ Studies investigating the role of salt intake in BP in children demonstrate that a reduction in salt intake significantly lowers BP. (Naomi et al, 2014)

A study by Naomi between 2007 and 2010 aimed to determine salt intake in children and adolescents by measuring 24-hour urinary sodium excretion, to compare these intakes against

newly derived maximum salt intake recommendations, and to identify the major sources of salt in children's diets by a photographic dietary record.

According to a 2003 study in the United Kingdom, which focus on an extensive salt reduction campaign. The UK Food Standards Agency set voluntary salt reduction targets for 80 categories of processed foods. Many manufacturers, retailers, and caterers reformulated their product to achieve these targets and beyond. Significant progress has been made till date. As a result, the adult daily salt intake as measured by 24-hour urinary sodium excretion in the United Kingdom has fallen from an average of 9.5 g/d in 2001 to 8.1g/d by June 2011 (i.e., an ≈15% reduction). However, despite the progress made in salt reduction in the United Kingdom, study also shows that salt intake in children are still high.

Majority of salt in children's diets comes from manufactured food products; further reductions in the salt content of food products among children are required. Further study shows that the major contributors to salt in children's diets are cereal and cereal products (36%), meat products (18%), and milk and milk products (11%). Bread alone accounted for 15% of salt intake in a study population. Although many manufacturers have made significant reductions in the sodium content of their bread, a survey in 2011 showed a huge variation between brands. (Naomi M. Marrero, Feng J. He, Peter Whincup, Graham A. MacGregor, 2014).

Findings have shown that a reduction in the salt content of manufactured foods would lead to a reduction in salt intake in children resulted in a fall in BP of 1.17/1.29 mm Hg. And more recent study showed a similar magnitude of association. Although, this effect might seem small, from a population viewpoint, a 1- to 2-mm Hg reduction in BP during childhood could translate to a large reduction in the number of cardiovascular disease events in the future. Furthermore, a reduction in salt intake could lead to other positive health related outcomes. Studies have shown an association between salt intake and total fluid consumption, as well as sugar-sweetened soft drink consumption. A reduction in salt intake by reducing soft drink consumption could possibly play a role in helping to reduce childhood obesity. (Naomi et al 2014).

2.8 Nutritional content of Instant Noodle

Flour of hard wheat (*Triticumaestivum*L.) is the main primary ingredient and the addition of alkaline salts can help strengthen the structure and hence improve the firmness of the final product. As there is an increasing awareness that health may be modified through diet, it has been a challenge for food scientists in finding more nutritious and healthy substitutes or alternatives to wheat flour for noodle products.

A research also compares the Food and Nutrient Intakes between Instant Noodle Consumers and Non-Consumers among Korean Children and Adolescents. Instant noodle is one of the most popular foods in Korea. The objective of this study was to examine the association of instant noodle consumption and food and nutrient intake among children and teenagers in Korea.

Wheat flour which is usually used to make instant noodles is not only low in fibre and protein contents but also poor in essential amino acid lysine. (Vijay et al,2008)

2.9 Instant noodles fortification in developed countries

Various research works has been carried out from various part of the world to improve the nutritional content of the flour used in making instant noodles. Example includes one that was carried out in Korea, Thailand and Australia. Australian sweet lupin, a low cost grain legume, is becoming popular in various food applications as it is rich in fibre and protein with high lysine content. In addition, lupin contains a wide range of photochemical with beneficial health effects. (Vijay,2008)

Another, improvement was carried due to the fact that, Dry regular instant noodles provide mainly carbohydrates and some proteins, while instant fried noodles also have some fats. Therefore, their nutritional quality may be improved by fortification with certain amino acids, or by addition of meat or egg and vegetables or soluble fibre. Oat dietary fibre is the fibre of dehulled oats called grouts. The total dietary fibre content in the grouts varies from 6 to 9%, about half which is soluble fibre, and the rest is insoluble. (Vijay, 2008)

2.10 CONCEPTUAL FRAMEWORK

The health providers and promoters need to understand that different people in the communities not only behave differently but also have different reasons and explanations for adopting a way of life and for engaging in different kinds of behaviour either healthy or risky behaviour. Hence

the need to direct a health education programmes or intervention based on the diagnosis about health behaviours in each community is very important in the field of Health Promotion and Education. Therefore PRECEDE MODEL was used in this study to explain human behaviours as related to knowledge, perception and pattern of consumption of instant noodle among undergraduates of ObafemiAwolowo University, Ile-Ife, Osun state, Nigeria.

2.10.1 THE PRECEDE FRAMEWORK

This outlines and describes the antecedent factors that influence behaviours. These factors are: Predisposing factors, Enabling factors and Reinforcing factors.

Predisposing factors: These are the antecedents to behaviour that provide rationale for the behaviour. They are knowledge, values, beliefs, attitudes, perceptions, norms, and behavioural intentions. Predisposing factors have the potential to influence the decisions people take about their health and their given health behaviour. They do this by either encouraging the behaviour or by inhibiting the behaviour from occurring.

Enabling factors: These are factors that encourage and motivate the adoption of behaviour to be the realization of motives, aspirations and decisions. For example; time to cook which might be disturbed by classes, money to buy food considering instant noodle is easy to get and not expensive. It is also easy to prepare since it doesn't take time.

Reinforcing Factors: This is the influence of significant order or people that can influence the adoption of a particular behaviour. Examples of these factors include pressure from peers, siblings, policy makers, parent, mentors and peer groups. For example, the peers and siblings might encourage the consumption of noodles.

Fig 2.1 PRECEDE MODEL



Enabling Factors
Low Price, time to cook, class time table, availability.

Reinforcing Factors
Peer influence, Media, Parents practices, Policy maker.

Environment
Family structure
Media advertisement
Market structure
School activities.

Consumption of instant noodles

CHAPTER 3

METHODOLOGY

3.1 Study design

The study was a cross-sectional descriptive design assessing knowledge, perception and pattern of consumption of instant noodles with the seasoning among undergraduates of Obafemi Awolowo University.

3.2 Study site

The study was carried out within the campus of the Obafemi Awolowo University. The university is in the ancient city of Ile Ife, Osun State. The university is built on about 5000 acres (20km²) of a total of 13,000 acres (53km²) university owned land. The university was founded in 1961 and classes commenced in October 1962 as the university of Ife and was renamed Obafemi Awolowo University on 12th May, 1987. Obafemi Awolowo University offers undergraduate and post graduate programmes in the fields of specialization which includes; humanities, the arts, the natural sciences, the social sciences, the medical sciences, engineering and technology. The university has 13 faculties and two colleges; the postgraduate college and the college of health sciences. Since the establishment of the university, a total of 82 departments have emerged with numerous courses offered. The university has eight halls of residence for undergraduate in whom four are for the males and four also for the females, while one hall of residence for postgraduate students. The halls were used as a basis of the research study.

3.3 Study Population and Sample Size Determination

The study population comprised of the undergraduates of the Obafemi Awolowo University residing within the various halls of residence.

3.3.1 Sample size

The sample size (n) was determined by using Lwanga and Lemeshow (1991) sample size formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where n = minimum sample size required

Z = confidence limit of survey at 95% (1.96)

P = expected prevalence = 50% = 0.50

q = 1-p = 1-50% = 50% = 0.50

d = absolute deviation from true value (degree of accuracy) = 5% = 0.05

$$n = \frac{1.96^2 \times 0.50 \times 0.50}{0.05^2}$$

n = 384

The sample size was 422 (i.e. 384 + 38(10% of the calculated sample size) to take care of attrition, no response and to promote generalization of findings.

3.3.2 Sampling technique

A three-stage random sampling technique was employed in selecting the respondents for the study. The stages are described below.

Stage 1: Random Sampling of Halls

Four halls of residence were used in selecting the study participants. Two halls each (2 male and 2 female) was selected by balloting from all the 8 undergraduate halls of residence in the University.

Stage 2: Proportionate Sampling

The number of respondent was then calculated based on the sample size and the total number of occupants per hall.

Stage 3: Random Sampling of Participants

Study participant was then recruited using simple random sampling to get the calculated number of respondents from the selected blocks.

Table 3.1 Distribution of selected respondents

| Hall of residence | Hall type | Number of students in | Number of blocks | Number of respondents selected in each hall |
|-------------------|-----------|-----------------------|------------------|---|
|-------------------|-----------|-----------------------|------------------|---|

| | | the hall | in each hall | |
|-------------------|--------|----------|-----------------|--|
| Angola | Male | 1320 | 11 | $\frac{1320}{5870} \times \frac{421}{1} = 94$ |
| Awolowo | Male | 1550 | 13 | $\frac{1550}{5870} \times \frac{421}{1} = 110$ |
| Mozambique | Female | 1800 | 15 | $\frac{1800}{5870} \times \frac{421}{1} = 131$ |
| Moremi | Female | 1200 | 8 | $\frac{1200}{5870} \times \frac{421}{1} = 86$ |
| Total | | 5870 | | 421 |

3.4 Instrument for Data Collection

Information gathered from reviewed literature was used to guide the design of a self-administered semi-structured questionnaire that was used in this study. The instrument was divided into five sections. Section 1 focused on the socio-demographic information of the respondents, and the other sections were designed in the tune of the specific objectives; Section 2 assessed the knowledge of respondents about instant noodles, section 3 determined their perception towards consumption of instant noodle, Section 4 explored the pattern of consumption of instant noodles while Section five identified the perceived factors encouraging the consumption of instant noodles.

3.5 Method of Data Collection

Two research assistants who are literate, matured and have had previous experiences on data collection was recruited and trained for two days. They helped in administration of the questionnaires within the selected blocks of hall of residence in the institution. The content of the training includes; purpose of the study, interpersonal communication and data collection procedures. Data were collected within one week. The researcher and the research assistants do approached the students during their lecture free times to fill the questionnaires. The team waited

for the students to complete the questionnaires and in case a section is not clear to them, they asked for clarifications and it was explained to them. The completed questionnaires were then retrieved from them.

3.6 Validity and Reliability

3.6.1 Validity: Validity of the instrument was ensured through the development of a draft instrument by consulting relevant literatures, subjecting the draft to independent, peer and expert reviews, particularly expert in public health and comments from supervisor was used to further fine-tune the instruments.

3.6.2 Reliability: Reliability refers to the consistency of a measure. A measure is said to have high reliability if it produces consistent results under consistent conditions..The instrument was pre-tested among the polytechnic of Ibadan, Ibadan, Oyo state considering the fact that this institution share similar characteristics with that of the study site. The questionnaire was administered among 42 (10% of the sample size) eligible respondents. Copies of pre-test questionnaires was coded, entered into a computer and analysed. Thereafter, the questionnaires were subjected to a measure of internal consistency using the Cronbach's Alpha model technique. The reliability value obtained for the study was 0.701. The reliability coefficient obtained from this analysis was used to ascertain the statistical reliability of the instrument.

3.7 Data Management and Analysis

The principal investigator checked all copies of administered questionnaire one after the other for purpose of completeness and accuracy. Serial number was assigned to each question for easy identification and for correct data entry and analysis. A coding guide was developed to code and enter each question into the computer for analysis. Analysis was done with the use of Statistical package SPSS version 20. The data entered into the computer was subjected to descriptive (mean, median, mode) and inferential (Chi-Square test) statistical analyses. Finally, information obtained was summarized and presented in tables and charts. Knowledge scores ≤ 7 , and >7 were classified as poor and good respectively using a 14-point knowledge scale.

3.8 Ethical Consideration

The confidentiality of the respondents was ensured and protected as there was no request for names and personal addresses. The researcher and the research assistants were of good conduct and did not act coercively or in any unethically unacceptable manner. The nature, purpose and processes involved in the study were well explained to the participants with emphasis on confidentiality, privacy and anonymity of information provided. In order to ensure anonymity of responses, code numbers were given to each participant and any form of identification was not included in the questionnaire. Information gathered from the respondents was stored in the computer package for analysis by the principal investigator and with no access to unauthorized persons while the questionnaires that were filled by the respondents were kept and stored in a safe place. Informed consent was obtained from the respondents before administration of the questionnaire.

3.9 Study Limitation

The study is limited in that it will be carried out in a school environment involving 422 students, thereby making the research participants very selective. Any generalization of the results of this study must be made with caution.

CHAPTER FOUR

RESULTS

4.1 Respondents' socio-demographic characteristics

Respondents' mean age was 20.4 ± 2.7 years, more than half of them were 20 years (59.4%) and females (51.1%). About one-third (32.8%) of the respondents were in the Sciences while others were in Social sciences (27.8%), Art (27.1%) and Engineering (12.4%). Most (96.7) of the respondents cook their meals themselves and about half (48.2%) of them have a monthly allowance of between 5,000 and 10,000 Naira (Table 4.1).

Table 4.1: Respondents' socio-demographic characteristics (N=421)

| Characteristics | Frequency | Percentage |
|-----------------|-----------|------------|
| Age | | |
| ≤20 | 250 | 59.4 |

| | | |
|-----------------------------|-----|------|
| >20 | 171 | 40.6 |
| Sex | | |
| Male | 206 | 48.9 |
| Female | 215 | 51.1 |
| Department | | |
| Engineering | 52 | 12.3 |
| Social sciences | 117 | 27.8 |
| Art | 114 | 27.1 |
| Sciences | 138 | 32.8 |
| Do you cook yourself | | |
| Yes | 407 | 96.7 |
| No | 14 | 3.3 |
| Monthly allowance(₦) | | |
| 1000-4000 | 84 | 20.0 |
| 5000-10000 | 203 | 48.2 |
| 11000-20000 | 102 | 24.2 |
| Above 20000 | 32 | 7.6 |

4.2 Respondents' Knowledge of instant noodles

The mean knowledge score of respondents' was 7.0 ± 3.2 ; 50.6% had good knowledge while 49.4% had poor knowledge about instant noodles. Respondents' were asked to mention the ingredients present in instant noodles and what its seasoning powder are made from; the details of

which are presented in Table 4.2. Major responses for instant noodles ingredients were wheat flour (41.2%) and plain white flour (27.2%) while that of the instant noodles powder were pepper, maggi, salt and flavor (36.1%), pepper, curry and salt (12.8%) and Salt, chilli, maggi and sugar (10.8%).

Respondents' responses to the question "what is the mineral that is high in instant noodles seasoning powder" included salt (43.3%) and maggi (22.8%). Majority (76.5%) of the respondents stated that too much intake of these mentioned component have health implications and the disease condition that could result from excessive intake of these substances were hypertension (33.3%), cancer (27.8%) and diabetes (5.8%). About twenty-one percent (20.8%) of them also stated that they had no idea about disease conditions that could arise from its excessive consumption (Table 4.3). Almost half of the respondents' stated that instant noodles is not rich in protein (49.0%) but rich in vitamin (47.8%); details in Table 4.4.

There was no significant relationship between respondents' age, Department of study, monthly allowance and their knowledge about instant noodles. There was however a statistically significant relationship between respondents' sex and their knowledge about instant noodles; more females (57.7%) had good knowledge about instant noodles compared to their male counterparts (43.2%), details in Table 4.5.

The mean knowledge score of the respondents about instant noodle is 7.04 ± 3.2 . A little above half of the respondents' 50.6% (213) had good knowledge while 49.4% (208) had a poor knowledge about instant noodle.

Table 4.2: Knowledge of instant noodles(N=421)

| Variables | Frequency | Percentage |
|--|------------------|-------------------|
| What is instant noodles made from (N=342) | | |
| Wheat flour* | 141 | 41.2 |

| | | |
|---------------------|----|------|
| Grain | 14 | 4.1 |
| Synthetic materials | 7 | 2.0 |
| Fibers | 5 | 1.5 |
| Flour | 93 | 27.2 |
| Protein | 3 | 0.9 |
| Starch | 17 | 5.0 |
| Cheese | 1 | 0.3 |
| Cereals | 14 | 4.1 |
| Fats | 2 | 0.6 |
| Cassava | 1 | 0.3 |
| I don't know | 44 | 12.9 |

Ingredients present in instant noodles seasoning

(N=360)

| | | |
|----------------------------------|-----|------|
| Pepper, maggi and salt | 22 | 6.1 |
| Pepper, curry and salt | 46 | 12.8 |
| Pepper, maggi, salt and flavour* | 130 | 36.1 |
| Pepper and maggi | 21 | 5.8 |
| Maggi and salt | 27 | 7.5 |
| Pepper and salt | 26 | 7.2 |
| No idea | 30 | 8.3 |
| Coloring, salt and iodine | 2 | 0.6 |
| Pepper and spices | 14 | 3.9 |
| Maggi and iodine | 3 | 0.8 |
| Salt, chilli, maggi and sugar | 39 | 10.8 |

*Correct response

No responses were excluded

Table 4.3: Knowledge of instant noodles(N=421)

| Variables | Frequency | Percentage |
|---|------------------|-------------------|
| One component high in instant noodles seasoning powder (N=342) | | |
| Maggi | 78 | 22.8 |
| Salt* | 148 | 43.3 |
| Curry | 9 | 2.6 |
| Flour | 12 | 3.5 |
| Carbohydrate | 9 | 2.6 |
| Pepper | 10 | 2.9 |
| Iodine | 1 | 0.3 |
| Chilli powder | 23 | 6.7 |
| Challot leaf | 2 | 0.6 |
| I don't know | 50 | 14.6 |
| Does too much intake of these mentioned component have any health implications (N=370) | | |
| Yes | 283 | 76.5 |
| No | 36 | 9.7 |
| I don't know | 51 | 13.8 |
| Disease condition that could result from too much intake of these components (N=327) | | |
| Diabetes | 19 | 5.8 |
| Hypertension* | 109 | 33.3 |
| Cancer | 91 | 27.8 |
| Kidney problem | 9 | 2.8 |
| Blood defect | 1 | 0.3 |
| Kwashiokor | 12 | 3.7 |
| Diarrhea | 8 | 2.4 |
| Liver cirrhosis | 3 | 0.9 |
| Obesity | 4 | 1.2 |
| Asthma | 2 | 0.6 |
| Skin tigor | 1 | 0.3 |
| No idea | 68 | 20.8 |

*Correct response while No responses were excluded

Table 4.4: Knowledge of instant noodles(N=421)

| Variables | Frequency | Percentage |
|---|------------------|-------------------|
| Is instant noodles rich in protein (N=392) | | |
| Yes | 103 | 26.3 |
| No* | 192 | 49.0 |
| I don't know | 97 | 24.7 |
| Is instant noodles rich in vitamin (N=391) | | |
| Yes | 187 | 47.8 |
| No* | 94 | 24.0 |
| I don't know | 110 | 28.1 |

*Correct response

No responses were excluded

Table 4.5: Knowledge grade of respondent's on instant noodles

| | Frequency | Percentage |
|-------|------------------|-------------------|
| Poor | 208 | 49.4 |
| Good | 213 | 50.6 |
| Total | 421 | 100 |

4.3 Respondents' perception towards consumption of instant noodles

Majority of the respondents' agreed that high salt intake can lead to increase blood pressure (83.4%), instant noodles contain constituents that can pose danger to one's health if taken in excess (68.4%) and that instant noodle is a junk food (61.8%). More than half (53.7%) of them also perceived that the salt content of instant noodle seasoning powder is too much while 45.6% perceived that instant noodles are not high in fat. More than one-third of the respondents had the perception that instant noodles is (38.5%) and isn't (34.9%) a healthy food. The details are presented in Table 4.6.

Table 4.6: Respondents' perception towards consumption of instant noodles (N=421)

| Variables | Agree No (%) | Disagree No (%) | Undecided No (%) |
|--|-------------------------|----------------------------|-----------------------------|
| Instant noodle is a junk food | 260 (61.8) | 106 (25.2) | 55 (13.1) |
| Instant noodle is a healthy food | 162 (38.5) | 147 (34.9) | 112 (26.6) |
| Instant noodles contain constituents that can pose danger to one's health if taken in excess | 288 (68.4) | 59 (14.0) | 74 (17.6) |
| Instant noodles are high in fat | 119 (28.3) | 192 (45.6) | 110 (26.1) |
| The salt content of instant noodle seasoning powder is too much | 226 (53.7) | 135 (32.1) | 60 (14.3) |
| High salt intake can lead to increase blood pressure | 351 (83.4) | 19 (4.5) | 51 (12.1) |

4.4 Respondents' pattern of consumption of instant noodles

Most (98.3%) of the respondents' stated that they consume instant noodles and majority (72.9%) of them eat it both in school and at home. About 70% of the respondents' had been eating instant noodles for more than five years, 27.8% eat it three to five times weekly and more than half (54.7%) make use of all the spices of the noodles when cooking it. Most (97.3) of them cook the instant noodles before eating while 1.4% eat it either cooked or raw (Tables 4.7 and 4.8).

Majority (69.8%) of the respondents' preferred to eat instant noodles anytime of the day and 45.3% have a particular brand choice of the noodles they eat. Apart from the spices that come with instant noodles, respondents add egg (80.8%), pepper (74.1%), vegetables (28.3%) and onions (12.6%) while cooking instant noodles. Few (11.4%) of the respondents' also reported that they add palm oil.

Table 4.7: Respondents' pattern of consumption of instant noodles (N=421)

| Variables | Frequency | Percentage |
|-----------------------------------|------------------|-------------------|
| Do you eat instant noodles | | |
| Yes | 414 | 98.3 |
| No | 7 | 1.7 |

*No responses were excluded

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Table 4.8: Respondents' pattern of consumption of instant noodles (N=414)

| Variables | Frequency | Percentage |
|---|------------------|-------------------|
| Where do you usually eat instant noodles (N=414) | | |
| In school | 112 | 27.1 |
| Both in school and at home | 302 | 72.9 |
| How long have you been taking instant noodles | | |
| Less than a year | 33 | 8.0 |
| Less than 5 years | 98 | 23.7 |
| Above 5 years | 283 | 68.4 |
| How often do you eat instant noodles in a week | | |
| Daily | 23 | 5.6 |
| Three to five times a week | 115 | 27.8 |
| Less than three times a week | 203 | 49.0 |
| Anytime I don't have something to eat | 73 | 17.6 |
| How do you spice the noodles during cooking (N=413) | | |
| I usually pour all the spice of the noodles when cooking it | 226 | 54.7 |
| I do not use all the spice of the noodles when cooking it | 181 | 43.8 |
| I do not use the spice of the noodles at all, I use ordinary salt | 4 | 1.0 |
| I do not use the spice at all, I use other spices | 2 | 0.5 |
| In what form do you eat noodles | | |
| Raw | 5 | 1.2 |
| Cooked | 403 | 97.3 |
| Raw and cooked | 6 | 1.4 |

*No responses were excluded

Table 4.9: Respondents' pattern of consumption of instant noodles (N=421)

| Variables | Frequency | Percentage |
|--|------------------|-------------------|
| Which time of the day do you prefer to eat noodles (N=414) | | |
| Morning | 43 | 10.4 |
| Afternoon | 47 | 11.4 |
| Evening | 35 | 8.5 |
| Anytime of the day | 289 | 69.8 |
| Which of the following statements best describe your choice of instant noodles (N=413) | | |
| I use a particular brand of instant noodles | 187 | 45.3 |
| I have a few brands of instant noodles that I use | 115 | 27.8 |
| I use any brand of noodles | 111 | 26.9 |
| What other ingredients do you add to instant noodles apart from the spice that comes with it* | | |
| Pepper | 312 | 74.1 |
| Vegetable | 119 | 28.3 |
| Palm oil | 48 | 11.4 |
| Egg | 340 | 80.8 |
| Onion | 53 | 12.6 |
| Cray fish/Fish | 27 | 6.4 |

*Multiple responses were allowed

4.5 Perceived factors that may encourage consumption of instant noodles by respondents

As shown in Table 4.10, most (92.5%) of the respondents' eat instant noodles because its preparation is fast. Majority (72.9%) also reported that instant noodle is a choice food whenever they do not have the time to cook. Majority however disagreed that their roommates influences their choice for noodles (86.7%), they eat noodles because it is cheap (70.3%) and that media advertisement on noodles has influenced their desire to eat noodles (68.6%). More than half (54.3%) also stated that they eat instant noodle because it is a delicious meal.

Table 4.10: Perceived factors that may encourage consumption of instant noodles by respondents' (N=414)

| Variables | Agree No (%) | Disagree No (%) | Undecided No (%) |
|--|-------------------------|----------------------------|-----------------------------|
| I eat instant noodles because it is cheap | 96 (23.2) | 291 (70.3) | 27 (6.5) |
| I eat instant noodles because it is fast in preparation | 383 (92.5) | 27 (6.5) | 4 (1.0) |
| Media advertisement on noodles has influenced my desire to eat noodles | 87 (21.0) | 284 (68.6) | 43 (10.4) |
| I eat instant noodles whenever I don't have time to cook | 302 (72.9) | 85 (20.5) | 27 (6.5) |
| My roommates influences my choice for noodles | 31 (7.5) | 359 (86.7) | 24 (5.8) |
| Instant noodles is a delicious meal, that is why I eat it | 225 (54.3) | 116 (28.0) | 73 (17.6) |

4.6 TEST OF HYPOTHESES

The results of the hypothesis tested are shown below;

Hypothesis 1: There is no significant relationship between knowledge and socio demographic characteristics of ObafemiAwolowo university undergraduates. Table 4.11 shows the result of the findings. Chi square result shows that there was no significant relationship between respondents' age, department of study, monthly allowance and their perception towards consumption of instant noodles. Therefore, the null was not rejected for variables; age, department of study and monthly allowance. The relationship between respondents' knowledge and sex was however significant; with $p=0.003$.

This shows that the sex of the respondents' has a statistically significant relationship with their knowledge about instant noodle. Therefore, the null hypothesis for variable; sex was thus rejected.

Table 4.11: Association between respondents' socio-demographic characteristics and knowledge of Instant noodles

| Characteristics | Level of knowledge | | Chi-square | P-value |
|------------------------------|--------------------|------------|------------|---------|
| | Good | Poor | | |
| Sex | | | 8.81 | *0.003 |
| Male | 89 (43.2) | 117 (56.8) | | P<0.05 |
| Female | 124 (57.7) | 91 (42.3) | | |
| Age group (in years) | | | 0.80 | 0.37 |
| ≤20 | 131 (52.4) | 119 (47.6) | | p>0.05 |
| >20 | 82 (48.0) | 89 (52.0) | | |
| Department | | | 1.94 | 0.59 |
| Engineering | 26 (50.0) | 26 (50.0) | | p>0.05 |
| Social sciences | 60 (51.3) | 57 (48.7) | | |
| Art | 52 (45.6) | 62 (54.4) | | |
| Sciences | 75 (54.3) | 63 (45.7) | | |
| Monthly allowance (₦) | | | 1.28 | 0.73 |
| 1000-4000 | 40 (47.6) | 44 (52.4) | | p>0.05 |
| 5000-10000 | 100 (49.3) | 103 (50.7) | | |
| 11000-20000 | 56 (54.9) | 46 (45.1) | | |
| Above 20000 | 17 (53.1) | 15 (46.9) | | |

*Significant at p<0.05

Hypothesis 2: There is no significant relationship between sex, knowledge and pattern of instant noodle consumption. Table 4.13 shows the result of the findings. Chi square result shows that there was no significant relationship between respondents' sex, knowledge and their pattern of instant noodles consumption. Bivariate analysis revealed that there was no significant relationship between the length of time respondents' had been eating instant noodles, how often they eat it in a week and their knowledge about instant noodles. By sex of respondents, more females (98.6%) eat instant noodles than the males (98.1%) however the relationship between sex and instant noodles consumption was not statistically significant (Table 4.12).

Table 4.12: Association between respondents' sex, knowledge and pattern of instant noodles consumption

| Variables | Do you eat instant noodles | | Chi-square | P-value |
|---|----------------------------|------------|------------|---------|
| | Yes | No | | |
| Sex | | | 0.19 | 0.66 |
| Male | 202(98.1) | 4 (1.9) | | P>0.05 |
| Female | 212 (98.6) | 3 (1.4) | | |
| | Knowledge grade | | | |
| | Good | Poor | | |
| Length of time of consuming instant noodles | | | 3.08 | 0.21 |
| Less than a year | 12 (36.4) | 21 (63.6) | | p>0.05 |
| Less than 5 years | 48 (49.0) | 50 (51.0) | | |
| Above 5 years | 148 (52.3) | 135 (47.7) | | |
| How often do you eat instant noodles in a week | | | 1.03 | 0.80 |
| Daily | 11 (47.8) | 12 (52.2) | | p>0.05 |
| Three to five times a week | 59 (51.3) | 56 (48.7) | | |
| Less than three times a week | 105 (51.7) | 98 (48.3) | | |
| Anytime I don't have something to eat | 33 (45.2) | 40 (54.8) | | |

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Respondents' socio-demographic characteristics

Respondents' mean age was 20.4 ± 2.7 years; this shows a population of young adults which is the common age among most Nigerian under graduates. Arulogun and Owolabi (2011) in their study among undergraduates in the university of Ibadan and their fast food consumption pattern also reports mean age of their respondents to be 22.0 ± 3.3 years, this is slightly higher than that of this study but still falls within the young adult population. More than half (59.4%) of the respondents fall within the age group above 20 years; similarly in Ogunleye's study (2010) 66% of the respondents were in the age group 20-25. More female (51.1%) however, were reported in this study compared to that of Arulogun and Owolabi (2011) which had more male respondents (57.2%).

About one-third (32.8%) of the respondents' were in the Sciences while others were in Social sciences (27.8%), Art (27.1%) and Engineering (12.4%). Most (96.7) of the respondents' reported that they cook their meals themselves, this is mainly because cooking is allowed in the school hostels and secondly it is more economical for students to prepare their meals than buying food from cafeterias. About half (48.2%) of them have a monthly allowance of between 5,000 and 10,000 Naira; this could be yet another reason why most would buy their food items and prepare themselves as earlier stated for economic value compared to eating in cafeterias.

5.2 Respondents' Knowledge of instant noodles

Respondents' knowledge about instant noodles and consequent health implication was fairly good; with 50.6% of them having good level of knowledge while 49.4% had poor knowledge. When asked to mention the ingredients used in making the seasoning powder of instant noodles a common ingredient was repeatedly reported along other groups of ingredients by respondents. This ingredient was salt; pepper, maggi, salt and flavor was mentioned by 36.1% of respondents, pepper, curry and salt by 12.8% and Salt, chilli, maggi and sugar by 10.8% of respondents.

Bivariate analysis revealed that there was a significant relationship between respondents' sex and their knowledge of noodles. More females (58.2%) had good knowledge about instant noodles compared to their male counterparts (41.8%). Possible reasons for this finding is best described by 8 who stated that female usually attach greater importance to healthy eating. In addition, the motivation of weight control is more prominent in females and they are also more likely to be dieting. Female are more dissatisfied with their body weight and shape than male, and attached greater importance to healthy eating.

This reveals that the presence of high salt content in the seasoning powder is tasted by respondents' hence the cause for why it is being repeatedly mentioned. Furthermore respondents were asked to mention the substance that is "high" in the instant noodles powder and 43.3% stated salt. Arulogun and Owolabi (2011) found out that Of the 398 who were aware of fast foods, 39.1% knew that fast foods are prepared with high salt content.

Wart (2006) described fast food or junk food as those foods that are high in sugar, salt and fat. Wart also states that junk foods don't just come from a fast food restaurant or pastry shops, many of the quick to fix foods sold in grocery stores are also junk food, among so many other criteria given in other to classify a food as fast food or junk food. Hence in view of the high salt content and the quick to cook nature of noodles it could be classified as a junk or fast food.

When asked the health implication and the disease condition that could result from excessive intake of these substances respondents response were hypertension (33.3%), cancer (27.8%) and diabetes (5.8%). Findings from Arulogun and Owolabi (2011) also reports that 52.1% of respondents believed that fast food consumption is one of the risk factors for non-communicable diseases. It is worthy to note that the-afore mentioned diseases conditions mentioned by respondents are non-communicable diseases.

According to Lungiswa (2007), the prevalence of non-communicable diseases such as hypertension and diabetes mellitus including obesity has increased among the black population over the past few years. The increase in these diseases has been associated with increased urbanization and lifestyle changes. Arulogun and Owolabi (2011) comments that as a result of these changes, many people replace healthy foods with fast foods which mainly consist of

saturated and trans-fats with low content of massive portion sizes and fibres. Thus dietary changes from traditional high fibre diets towards foreign fast food diet have contributed to the increase of the incidence of diet related non-communicable diseases.

According to Konwea (2012), most fast food meals are high in protein; however the major concern is that they are also usually high in fat, sugar and sodium; thereby contributing additional calories, excess body fat and increase body weight. Being overweight or obese increases the likelihood of suffering from cancer, coronary heart diseases, diabetes, hypertension, osteoarthritis, strokes and obesity reduces life expectancy by an average of nine years (WHO 2000)

In West Africa, there has been an increase in the prevalence of some Cardio Vascular Disease (CVD) risk factors, particularly hypertension. Lisk, Williams, and Slattery, (1999) revealed in their study in rural Sierra Leone, an increase in the rate of high blood pressure. The study showed that there is 18% and 22% increase in blood pressure in men and women older than 15years. Astagneau, Bruijnzeeds and Owusu-Dabo (2006) and Kane, Diao, Dia, Diop., Diop, Diop, Hane, Sarr, Ba, and Diouf (1998) have shown that 10-20% of the populations over 15 years of age are hypertensive. Risk factors among West African populations have been identified as age, obesity, high consumption of salt and being female (Cooper, Rotimi, Ataman, Mcgee, Osotimehin, Kadiri, Muna, Kingue, Frase, Forrester, Bennett, and Wilks 1997; Amoah, Owusu, and Adjei, 2002).

5.3 Respondents' perception towards consumption of instant noodles

Findings in these study revealed that majority of students (61.8%) perceived instant noodles to be a fast food, similarly in Arulogun and Awolabi (2011), they reported a high percentage (99.5%) of their respondents' being aware of fast food; of which various fast food types were mentioned.

Respondents' (68.4%) also agreed that instant noodles contain constituents that can pose danger to one's health if taken in excess. This finding is corroborated by Rijal's study (2007) where belief of respondents that excessive consumption of fast foods has adverse effect on health.

Some of the constituents noodles are made from not only includes high salt contents but also fats and sugars; all characteristics of fast foods/junk food as classified by Warts (2006).

Unlike the findings of Arulogun and Awolabi (2011) where more than half (54.8%) of the respondents had no idea of how fast food consumption can lead to non-communicable diseases and few (23.8%) said if fast food is consumed excessively it can lead to NCD. Respondents (83.4%) in this study believed that that high salt intake can lead to increase blood pressure which is among NCDs of global concern.

This is consistent with earlier research works which found that fast foods are a contributing factor in the aetiology of NCDs such as hypertension and cardiovascular diseases (Puoane and Hughes 2005).

Though students perceive the various health implications; (one of which includes hypertension) associated with frequent consumption of noodles that is characterized with having high salt content in its' seasoning powder the university environment still promotes there continuous uptake of noodles. According to Olusanya and Omotayo (2011), poor nutritional practices and heightened levels of stress are two common attributes of university life which are strongly linked with ill-health or decreased health.

5.4 Respondents' pattern of consumption of instant noodles

A 24 hour dietary recall of the participants showed that their diet was mostly yam, indomie noodles, rice, bread and butter, meat pie, biscuits, roasted groundnuts and popcorn (Onyechi and Okolo 2008). This shows that noodles cannot be ruled out from the average Nigerian university student.

Findings of this study showed that most of the respondents ate indomie on a weekly basis, with 27.8% of them eating noodles three to five times a week, and 49% taking noodles Less than three times a week; this is similar to Arulogun and Owolabi's (2011) findings where majority of the respondents' consume fast foods on weekly basis with differences in the number of times per

week. They report that 80.5% of the respondents consume fast foods weekly. Of these 322, 33.9% took it occasionally, 22.4% once in a week and (18.3%) twice a week.

It was also believed that fast foods can be taken as breakfast, lunch or dinner as supported by a similar study where 87.5% of the respondents substituted fast foods for breakfast, lunch or dinner (Olumakaiye, Ogbimi, Ogunba, Soyebo, 2008). This is tantamount to skipping meals which is not good for normal body development and growth (Dugdale 2009).

5.5 Perceived factors that may encourage consumption of instant noodles by respondents'

The role of the mass media in influencing lifestyle choices of individuals cannot be undermined. The mass media is both a tool that can be used to promote or hinder healthy lifestyle choices of people. Though, in this study within the university setting, mass media was found not to have influenced majority of the respondents (68.6%), who disagree that media was not the influence to their for noodles.

Standing Committee on Nutrition, (2006) reports that there are many reasons for junk food consumption, most importantly, is the high levels of commercial marketing of energy-dense, nutrient-poor foods that are specifically targeted to young adults. Onyechi and Okolo (2008) further explain that these are the type of foods available in most of the eating houses within the campus. This type of marketing strategy contributes to unhealthy diet that promotes obesity in young people.

There are those who eat fast food because of the sweet and delicious taste. This was why the B.B.C news (2003) stated that the nutritional make up of fast food encourages people to gorge on it unintentionally. This could explain why more than half of the respondents (54.3%) reported they eat noodles due to its' delicious taste. Onyechi and Okolo (2008) also reports that factors that considered in food choice among their respondents were taste and easy to cook foods

Only 6.5% of the respondents' preferred fast Foods in Arulogun and Owolabi's study (2011); though they studied general food that are ready to eat and not in particular reference to noodles a common reason for this preference for fast food stated by their respondents' (66.6% of the 6.5%) was that fast foods are readily available and stress free. Similar reason was also given by

respondents' in this study and these were 92.5% of the respondents eating instant noodles because its preparation is fast. While 72.9% reported that instant noodle is a choice food whenever they do not have the time to cook.

Majority of Respondents' (70.3%) stated that they do not eat noodles because it is cheaper, but (72.9%) agree that they eat noodles because is fast in preparation, this response highlights the university environment issue of students not having enough time to prepare their meals because they have to attend lectures at various hours of the day time.

Ogunleye 2010 further gives reason for the quality of diet or food taken by undergraduates in a high institution in Ogun state being of lower standards due to lack of money which is a socioeconomic problem, Activities in school such as lecture time table, lack of storage facilities to store perishable food stuff and omission of feeding time at a particular hour of the day (Ogunleye 2010)

5.6 Implication of findings for Health Promotion and Education

As stated previously, some of the harmful components of noodles and its seasoning when taken excessively are fats, sugars and high salt. Eating practices have been identified as one of the factors fuelling the global overweight and obesity epidemic. These include an increased consumption of energy dense foods that are high in fat and sugars but low in vitamins, minerals and other micronutrients as well as low consumption of legumes, milk, fruits and vegetables (Cavalli-Sforza, Rosman, de Boer and Darnton-Hill 1996, Drewnowski and Popkin 1997).

The complications of obesity include CVD, high blood pressure, osteoarthritis, gout, gall bladder disease, respiratory problems, liver malfunction and complications in pregnancy and surgery (Whitmer, Gunderson, Barett-Conner, Quesenberry, And Yaffe 2005).

According to Lungiswa (2007), the prevalence of non-communicable diseases such as hypertension and diabetes mellitus including obesity has increased among the black population

over the past few years. The increase in these diseases has been associated with increased urbanization and lifestyle changes.

University students have been considered an important target for the promotion of healthy lifestyles of the adult population (Yahia, Achkar, Abdallah and Rizk 2008), and various studies have shown that there is a global increased attention on investigating the nutritional knowledge and eating habits indices of university students (Osaka, Nanakorn, Sanseeha, Nagahiro and Kodama 1999, Sakamaki, Amamoto, Mochida, Shinfuku and Toyama 2005, Malinauskas, Raedeke, Aeby, Smith and Dallas 2006, Kim, Han, Song and Lee 2011, Tominaga, Taguchi, Suzuki, Ikawa, Youn, Cho, Scherling and Roth 2012). Gan, Mohd, Zalilah and Hazizi (2011) highlighted the presence of unhealthy eating behaviours among university students and emphasizes the need to promote healthy eating habits among university students to achieve a healthy lifestyles.

5.7 Conclusion

Instant noodle, a popular instant meal in Nigeria, is a precooked and usually dried noodle block, sold with flavouring powder and/or seasoning oil, usually in a separate packet; though in the case of cup noodles the flavouring is often loose in the cup. As at 2013, 105.5 billion packets of instant noodles were consumed worldwide. From this, Nigeria is the 2nd African nation and the 12th country in the world that consumed 1.4 billion packets of instant noodles (World Instant Noodle Association, 2014). Evidence suggests that a high dietary intake of salt may contribute to the rise in blood pressure, and can promote the development of hypertension, or aggravate hypertension already present (Australian Institute of Health and Welfare, 2006).

This study has helped to reveal that the proportion of students with good knowledge about instant noodle is slightly different from the ones with poor knowledge. It can be concluded that the student possessed a fair amount of knowledge about instant noodle and what it is produced from, as well as the belief that excessive consumption of noodles seasoning could result non communicable diseases like hypertension and diabetes. Respondents' sex also revealed an association with knowledge of noodles; with females being more knowledgeable than their male counter parts. Moreover, most of the respondents had a negative perception towards the

consumption of instant noodle as it was revealed that majority of the respondents agreed that high salt intake can lead to increase blood pressure. Majority of the respondents preferred to eat instant noodles anytime of the day and they have a particular choice of the noodles they eat. However some of the major factors that still make most students consume noodles on a weekly basis includes: it fast cooking time, cheaper to afford and influence of the mass media. Therefore, health education strategies such as training, enlightenment campaign with promulgation of food industry policy that will reduce salt content of packaged foods among undergraduate' students should be promoted.

5.8 Recommendations

1. Good food habits and lifestyles that can prevent or reduce the occurrence of diet related chronic diseases need to be established early in life with the aid of health promotion and education strategies, like public trainings and use of the mass media at the community level so that parents can inculcate the habit in their children before getting admission into universities as it may become more difficult to change such habits later in life
2. Course on nutrition education should be instituted in all undergraduates General courses so that it can increase their knowledge in order to influence their perception towards the use of instant noodles seasoning. They should be compulsorily offer in institutions of learning from primary to tertiary, with focus on the benefits of healthy dietary food consumption and the harmful effects of unhealthy dietary food intake such as fast foods that contain high salt content when taken excessively.
3. Given the sex-related differences in knowledge of noodles composition, it is reasonable to hypothesize that there could be sex differences in other aspects of students' eating behaviour. This information could be of importance to public health workers by enhancing their understanding of sex differences in eating habits and could help create more targeted strategies for preventing unhealthy eating habits.

4. Among the factors given by the respondents for eating instants noodles is that it is fast to prepare, which is as a result of tight lecture time table. Therefore, school authority should help in restructuring the time table so that students can have time to cook better meals, eat well and read well within a good academic environment, in order to impact into the society what they have learnt in school.

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APPENDIX 1
QUESTIONNAIRE

KNOWLEDGE, PERCEPTION AND PATTERN OF CONSUMPTION OF INSTANT NOODLES AMONG UNDERGRADUATE STUDENTS OF OBAFEMI AWOLOWO UNIVERSITY

Dear Respondent,

My name is OlaniyanOladipupo, a Postgraduate student of the Department of Health Promotion and Education, College of Medicine, University of Ibadan. The purpose of this study is to **assess knowledge, perception and pattern of consumption of instant noodles among undergraduate students of ObafemiAwolowo University.**

The findings of this study will help to design interventions such as nutritional education and policy formulation that will be useful to consumers.

Please note, you may not write your name on this questionnaire, also try to give honest answer to the questions as this will assist in making the research a success.

Would you like to participate in the study? 1. YES [] 2. NO []

Thank you so much.

SECTION A: SOCIO-DEMOGRAPHY INFORMATION

Instruction: Please tick [√] as appropriate

01. Age (As At Last Birthday).....Years

02. Sex 1. Male [] 2. Female []

03. Department

04. Do you cook yourself? 1. Yes [] 2. No []

05. Monthly allowance

1. N2,000-N4, 000 [] 2. N5,000-N10,000 [] 3. N11,000-N20,000 []

4. Above N20,000 [] 5. Others (specify).....

SECTION B: KNOWLEDGE ABOUT INSTANT NOODLE

Instruction: In this section you will be asked certain questions, please answer to the best of your ability. Any information or knowledge shared will be greatly appreciated. Please leave the score column vacant, it is for researcher's use. Thank you.

| Questions | Answer/response | Score |
|---|-----------------|-------|
| 06. What is instant noodle made from? | | |
| 07. List the ingredient present in instant noodle seasoning powder. | | |
| 08. What is the substance that is high in instant noodles seasoning powder? | | |
| 09. Is there any health implication on taking too much of the above mentioned substance? | | |
| 10. Name one disease condition that result from taking the above mentioned substance in excess. | | |
| 11. Is instant noodle rich in protein? (Please answer yes, no or I don't know) | | |
| 12. Is instant noodle rich in vitamins? (Please answer yes, no or i don't know). | | |

13. **Total Points Scored=**

14. **Category code=**

SECTION C: PERCEPTION TOWARDS CONSUMPTION OF INSTANT NOODLE

Instruction: Here are some statements relating to perception towards instant noodle consumption. For each statement, indicate whether you Agree [A], Disagree [D] or Undecided [U].

| STATEMENT | A | D | U |
|---|---|---|---|
| 15. Instant noodle is a junk food. | | | |
| 16. Instant noodle is a healthy food. | | | |
| 17. Instant noodles contain ingredients/chemicals that can pose danger to once health if taken in excess. | | | |
| 18. Instant noodles are high in fat. | | | |
| 19. The salt content of instant noodle seasoning powder is too much. | | | |
| 20. High salt intake can lead to increase blood pressure. | | | |

SECTION D: PATTERN OF CUNSUMPTION OF INSTANT NOODLES

Instruction: please tick[√] as appropriate.

21. Do you eat instant noodles? 1. Yes [] 2. No []

22. Where do you usually eat instant noodles?

1. In school [] 2. Both in school and home []

23. How long have you being taking instant noodle?

1. Less than one year [] 2. Less than 5 year [] 3. Above 5 years []

24. How often do you eat noodles?

1. Daily [] 2. Three to five times a week [] 3. Less than three times a week []
4. Never [] 5. Others []

25. How do you spice the noodles during cooking?

1. I usually pour all the spice of the noodles when cooking it []
2. I do not use all the spice of the noodles when cooking it []
3. I do not use the spice of the noodles at all, I use ordinary salt []
4. I do not use the spice at all, I use other spices []
5. Others, specify

26. In what form do you eat noodles?

1. Raw [] 2. Cooked []

27. Which time of the day do you prefer to eat noodles?

1. Morning [] 2. Afternoon [] 3. Evening [] 4. Any time of the day []

28. Which of the following statements best describe your choice of instant noodles?

1. I use a particular brand of instant noodles []
 2. I have a few brands of instant noodles that I use []
 3. I use any brand of noodles []

29. What other ingredients do you add to instant noodles apart from the spice that comes with it.? (Pick all that applies).

1. Pepper [] 2. Vegetable [] 3. Palm oil []
 4. Egg [] 5. Others, specify

SECTION E: PERCEIVED FACTORS ENCOURAGE THE CONSUMPTION OF INSTANT NOODLES

| <i>S. No</i> | STATEMENT | A | D | U |
|--------------|--|----------|----------|----------|
| 30. | I cook instant noodles because it is cheap. | | | |
| 31. | I cook instant noodles because it is fast in preparation. | | | |
| 32. | Media advertisement on noodles has influence my desire to eat noodles. | | | |
| 33. | I eat instant noodle whenever I don't have time to cook. | | | |
| 34. | My roommates influence my choice for instant noodle. | | | |
| 35. | Instant noodle is a delicious meal, that's why I eat it. | | | |