CHAPTER ONE

INTRODUCTION

E-Health literacy is a term that describes the relatively modern concept of an individual's ability to search for, successfully access, comprehend, and appraise desired health information from electronic sources and then use such information to attempt to address a particular health problem (Norman and Skinner, 2006). Due to the increasing influence of the internet for information-seeking and health information dissemination, e-Health literacy has become an important topic of research in recent years.

Stellefson, Hanik, Chaney, Chaney, Tennant and Chavarria (2011:2) state that “eight out of ten Internet users report that they have at least searched online for health information, making it the third most popular Web activity next to checking email and using search engines in terms of activities that almost everybody has done”.

Though in recent years, individuals may have gained access to a multitude of health information via the Internet; access alone does not ensure that proper search skills and techniques are being used to find the most relevant online and electronic resources.

Figure 1.1: Photos of Indomie and Tummy Tummy Instant

Access also does not imply appropriate use of information and possible positive responses. The quantity of relevant, misleading and incomplete information available online especially with regards to health issues has also been a major source of concern to scholars and health workers.

Eating instant noodles one of the popular fast foods now in Nigeria is often a way of life for students; their busy lifestyle and multitasks, making healthy choices in terms of food consumption dependent on available knowledge of what constitutes healthy eating. Where this knowledge is lacking, "fast foods" are often the selected choice and eating healthy becomes less of a priority.

The Internet is replete with wellness information along the line of healthy or healthful eating and as such contains health wellness information relating to fast foods such as instant noodles. This makes the possibility of Internet-savvy students chancing upon materials that suggest how to eat healthily, very likely. It is within the context of this possibility and the anecdotal evidence of criticisms concerning the health status of instant noodles and the increasing use of this fast food, that this work examines students' exposure to Internet Wellness information, regarding this fast food. The intention is to ascertain whether the extent of exposure to Internet wellness information concerning instant noodles, has resulted in creating any attitudinal change in their diet and consumption of this fast food.

1.1 Background of the Study

The advent of the internet has brought about a change in the way tasks are carried out and how information about different subjects are obtained. In Nigeria, there has been a

steady increase in the number of people that have access to the Internet. Statistics from Internet world stat(2017), has shown that Nigeria ranks 8th among the top 20 global Internet users, while data from the National Bureau of Statistics(NBS) showed that Lagos State leads in terms of internet usage in Nigeria. The Internet appears to have become an imperative tool for disseminating health information (Vance, Howe and Dellavalle, 2009).

According to Richards, Colman, and Hollingsworth (1998), Internet-based health information has the capability to appeal to consumers with different learning styles. It merges the expansive reach merits of mass communication channels with the persuasion features of interpersonal channels by giving room for feedbacks between the message, sender and receiver. (Cassell, Jackson and Cheuvront, 1998).

Consumers can also access health information in the privacy of their homes at convenient times via the Internet. Consumers want information about prevention, both for self-care and to participate in a more informed way in their healthcare (Yuri Quintana, Feightner, Wathen, Sangster and Marshall, 2001). An increasing proportion of the public is using the Internet for healthcare information (Sarasohn-Kahn, 2012; Elkin 2008; Forkner-Dunn, 2003).

The contemporary university student appears more technology savvy than those students who came before them, and even more so than some of their professors. For today's university students "computers and all their associated applications existed in the world they were born into; computers are as much an accepted part of their environment as were telephones to the faculty who teach them" (Hagner, 2001). The

Internet has increasingly been used to promote health behaviour. Young people may be especially vulnerable to problems with regard to online health information seeking (Escoffery, Miner and Adame, 2005).

The Internet is likely an especially important source of health information for young people in particular, given that they are often concerned with issues that may be sensitive and hard to talk about, and because many young people have not yet established a relationship with a doctor other than their family doctor. The implications of this are unclear. Increased access to health information could create a more informed and healthful youth. On the other hand, if the quality of online information is not high or the source unknown, increased reliance on the Internet could lead to greater misinformation and skepticism (Rideout, 2001).

Young people constitute a heterogeneous group, and whether online health information seeking leads to an informed or a misinformed youth is likely to be a function of an individual's age, maturity, cognitive development, and information literacy (Eastin, 2001). Health information-seeking behaviour varies depending on the age of the youth.

Instant noodles are a precooked and usually dried noodles block, sold with flavouring powder and/or seasoning oil. The flavouring is usually in a separate packet, although in the case of cup noodles the flavouring is often loose in the cup. Some instant noodles products are seal packed; these can be reheated or eaten straight from the packet. Dried noodles blocks are cooked or soaked in boiling water before eating. The main ingredients used in dried noodles are wheat flour, palm oil, and salt. Common ingredients in the flavouring powder are salt, monosodium glutamate, seasoning, and

sugar. Instant noodles were invented by Momofuku Ando (born Go Pek-Hok) of Nissin Foods in Japan. They were launched in 1958 under the brand name Chikin Ramen. In 1971, Nissin introduced Cup Noodles, a dried noodles block in a polystyrene cup (It is referred to as Cup Ramen in Japan). Instant noodles are marketed worldwide under many brand names. Since instant noodles made its way into our kitchens a few years ago, it has been a lot of relief for bachelors, spinsters and families seeking a 'quick fix' for their hunger. Admittedly, it is an instant remedy for hunger, without having to wait for minutes or hours the time it takes to get a meal ready.

Among the highest number of instant noodles consumers are students whose academic schedules are often very tight with little or no time for serious cooking. Despite the abundance of internet healthy eating information available and accessible to Nigerian university students, their instant noodles consumption culture is worrisome.

Fast food or junk food refers to the type of food prepared and served at very short notice, hence the term "fast food" and since it is so unhealthy it is called "junk". To make food "fast", most of the fast food is prepared beforehand and is then preheated or precooked when an order comes up. Most of the fast food is quite unhealthy. Historically, fast food is known to be very fattening because of its high calorie content. The cooking process of most fast food items specially the really mouthwatering ones involve a lot of grease use. Eating such junk food leads to obesity which is a dangerous eating lifestyle. Obesity is a common medical condition in most countries with fast food culture. Not only is obesity bad for physical appearance it can lead to a lot of health problems including heart disease and reduced life expectancy (Rajveer 2012).

Most fast food contains food additives and preservatives. A lot of these additives and preservatives are harmful to the human body. Some of the preservatives have been known to contain carcinogen that can lead to cancer. French fries and pizza may contain sodium in high quantities. If too much is consumed, this can cause issues in the cardiovascular and kidney functions. According to the Consumer Association of Penang, a Malaysian health advocacy organization, there are over 136 additives used in various brands of instant noodles. Some of the most shocking are propylene glycol (anti-freeze ingredient), calcium sulfate (used in Plaster of Paris), calcium oxide (used in insecticides), pentasodium triphosphate (cleaning agent used in detergents), tertiary butylhydroxyquinone (a form of lighter fluid), polydimethyl siloxane (used in contact lenses), propyl gallate (a preservative that hinders sperm production), BHT (a preservative that harms kidney), tartarzine (a colouring agent that make children hyperactive), etc. It can only be described as a toxic assault of epic proportions.

Almost all instant noodles, contains high levels of carbohydrate, sodium and fat (in the oil seasoning); without additional ingredients such as eggs, meat and vegetables, its nutritional value is poor, with low protein, vitamins, minerals and dietary fibre.

According to the Codex Standards (FAO standards) for instant noodles, acid regulators, flavour enhancers, thickeners, humectants, colours, stabilizers, anti-oxidants, emulsifiers, flour treatment agents, preservatives and anti-caking agents are allowed to be used in the making of instant noodles. Twenty-four of the 136 listed additives in the Codex Standards are sodium salts. And the use of sodium additives is the main reason why instant noodles are high in sodium. High-sodium foods can cause hypertension,

heart disease, stroke, kidney damage and other health problems. Consumption of instant noodles can easily cause excessive sodium intake as sodium is commonly used in other daily foods especially from processed and hawker foods.

Instant noodles are coated with wax to prevent the noodles from sticking together. This can be seen when hot water is added to the noodles. After some time the wax can be seen floating in the water. The Codex Standards also allow the use of 10,000 mg/kg of the chemical propylene glycol, an anti-freeze ingredient as humectants (help to retain moisture to prevent noodles from drying) in instant noodles. Propylene glycol is readily absorbed and it accumulates in the heart, liver and kidneys causing abnormalities and damage. The chemical is also capable of weakening the immune system.

Instant noodles and the flavouring soup base also contain high amounts of monosodium glutamate (MSG). It is a flavour enhancer used by instant noodles makers to make their shrimp flavours ”shrimpier” and beef flavours “beefier”. MSG can trigger an allergic reaction in 1 to 2% of the population. Individuals who are allergic to MSG can get burning sensations, chest and facial flushing or pain and headaches from it. High sodium consumption is linked to stroke or kidney damage. In Malaysia, there are an estimated 13,000 kidney patients undergoing dialysis. Every year 2,500 people join the ranks of end-stage renal failure patients. Six new cases of stroke occur every hour in Malaysia. Some of the chemicals found in instant noodles are also capable of causing cancer. For example, dioxin and plasticizers leached from the containers in the presence of hot water (Hooi, 2006). According to the World Health Organization (WHO 2003 and 2007), at least 30% of all cancers could be prevented through simple measures such

as adopting a healthy diet. Instant noodles are definitely an unhealthy diet which consumers should avoid.

The proclivity of undergraduates in southeast Nigeria towards fast food, especially, consumption of instant noodles and what they know and do about healthy eating, as a result of exposure to Internet wellness information and dietary behaviour change is the central issue that was explored in this study.

Specifically, instant noodles are unhealthful because of the following: (Mercola 2014)

a. Destroys Digestive System: Eating instant noodles as a routine gives digestion problem like abdominal pain, diarrhea, heart burn, stomach problems, bloating and heavy feeling.

b. High Blood Pressure: Instant noodles contain lots of sodium that could stimulate increased blood pressure, kidney damage, fluid retention in the hands and feet. The dangers of eating instant noodles would be very dangerous for those who have experienced high blood pressure and kidney problem.

c. Lowering Metabolism: Regular intake of instant noodles reduces the body metabolism. This will add weight drastically because of accumulated toxins in instant noodles that comes from flavour, colour, and preservative and so on.

d. Mono Sodium Glutamate (MSG): MSG added to instant noodles makes it to taste delicious. Research reveals that MSG is dangerous because it can cause brain damage, kidney disease, chest pain, headache and other illness.

e. Contains Wax: Wax is one of the ingredients in instant noodles that cause harm in the body. The wax in instant noodles prevents it from gumming together. Wax content of instant noodles can be a cause of stomach problems and constipation.

f. Cancer Causing Content: Instant noodles contain some contents that trigger cancer. Cup noodles contain many harmful substances which when mixed with instant noodles damages liver and kidney and also cause weakening of the immune system.

1.2 Statement of the Problem

As at May 7 2018, Nigeria was the 12th largest consumer of instant noodles in the world. (World Instant Noodles Association [WINA], 2018). This shows the popularity of this fast food among Nigerians especially undergraduates. However, available research suggests that Junk food which instant noodles is an example of could constitute a health hazard because they are highly processed with very little nutritional value.

Specifically, Shin (2014) and Sharma (2014) report that because instant noodles are low in nutritive content; high in fat, calories and sodium; and are laced with artificial colours, preservatives, additives and flavourings, they may increase people's risk of metabolic changes linked to heart disease, stroke and other terminal ailments. The possible danger of (excessive) consumption of instant noodles notwithstanding, relatively little attention has been paid to this among scholars and health agencies especially as it relates to public knowledge of the food they consume. In the

contemporary world, health issues which usually get the attention of the World Health Organization (WHO), UN health organs and the various NGOs are usually HIV/AIDS, Malaria, TB, Polio, Ebola and Yellow Fever among others. Little attention appears to be paid to issues like wellness as regards public understanding of the harmful nature of processed food such as instant noodles. This situation necessitates people, especially the youth relying on the internet for certain health information.

Studies have shown that the Internet is replete with wellness information that could inform healthy behaviour among young people (Scott, Gilmour & Fielden, 2008; Birpreet, 2011). Scholars have also found that youth within the ages of 18 – 35 years are active users of the internet (Escoffery et al., 2005; Sitthiworanan, 2009; Masood, 2008). The extent to which these categories of young people are knowledgeable about what to eat and what not to eat based on available Internet wellness information still remain a far cry. This informs the debate on whether exposure to Internet wellness information revealing instant noodles as unhealthy processed food can induce an informed dietary change among undergraduates in south east Nigeria.

1.3 Objective of the Study

The study investigated how exposed undergraduates in Southeast Nigeria are to Internet wellness information which reveals instant noodles as unhealthy and determined whether these students' exposure to this health information led to dietary change in regard to instant noodles consumption. The specific objectives include:

1. To establish how exposed undergraduates in Southeast Nigeria are to Internet wellness information.

2. To determine the rate of instant noodles consumption among undergraduates in Southeast Nigeria.

3. To examine how knowledgeable these undergraduates are about instant noodles as unhealthful processed food.

4. To determine whether exposure to Internet wellness information, induce dietary behaviour change, in regard to consumption of processed food, especially instant noodles among undergraduates in Southeast Nigeria.

1.4 Research Questions

The following research questions guided the study:

1. How exposed are undergraduates in Southeast Nigeria to Internet wellness information?
2. What is the rate of instant noodles consumption among undergraduates in Southeast Nigeria?
3. How knowledgeable are these undergraduates about instant noodles being unhealthy processed food?
4. Does exposure to Internet wellness information induce dietary behaviour change in regard to the consumption of instant noodles among these undergraduates in Southeast Nigeria?

1.5 Research Hypotheses

The following hypotheses strengthened the study:

H_1: There is a significant rate of exposure to Internet wellness information among undergraduates in Southeast Nigeria.

H_0: There is no significant rate of exposure to Internet wellness information among undergraduates in Southeast Nigeria.

H_2: There is significant rate of instant noodles consumption among undergraduates in Southeast Nigeria.

H_0: There is no significant rate of instant noodles consumption among undergraduates in Southeast Nigeria.

H_3: There is significant level of knowledge about instant noodles being unhealthy processed food among undergraduates in Southeast Nigeria.

H_0: There is no significant level of knowledge about instant noodles being unhealthy processed food among undergraduates in Southeast Nigeria.

H_4: There is a significant relationship between Internet wellness information and dietary behaviour change in regards to instant noodles consumption among undergraduates in Southeast Nigeria.

H_0: There is no significant relationship between Internet wellness information and dietary behaviour change in regards to instant noodles consumption among undergraduates in Southeast Nigeria.

1.6 Scope of the Study

A lot of areas could be explored in regard to Internet wellness information, instant noodles consumption and dietary change among young people.

This study was limited to measuring Internet wellness information, instant noodles consumption, and dietary behaviour change among undergraduates in southeast Nigeria.

Internet wellness information was also narrowed to health information as it concerns instant noodles consumption. A purposive decision was taken not to lump all the health information on the Internet into a single study like this with a focus on unraveling the Internet wellness information available to the undergraduate students of federal universities in southeast Nigeria. This is planned as an action and comprehensive study that could lead to findings that trigger actions and interventions by concerned and relevant agencies of government. Based on these considerations, the researcher chose to study only the federal universities in the southeast geo-political zone. All the five federal universities in the southeast zone at the moment were selected for the study. It is hoped that the findings of this study might be replicated in federal, state and privately owned university in other geopolitical zones.

1.7 Significance of the Study

The study on exposure to Internet wellness information on instant noodles consumption and dietary change among undergraduates in southeast Nigeria was significant in many ways. First the findings of this study will help in assessing the extent Nigerian undergraduates' observe healthful eating, especially in the area of instant noodles consumption and how exposure to Internet wellness information influence their dietary behaviour. These enabled some of them to overcome the wrong consumption habits. Secondly, the study revealed the current status of healthy eating habit which served as

useful information for the ministry of health in proposing policies and programmers on healthy lifestyle among young people.

Thirdly, the manufacturers of instant noodles will benefit from the study and think of how to make their product nutritive for the consumers.

Fourthly, Nutritional experts will find the results of this study as a useful toolkit in advising youths on healthy eating lifestyle.

Finally, the findings from this study will add to existing literature on the level of access to Internet wellness information as well as its resultant health actions found among Nigerian undergraduates based on their consumption of instant noodles.

1.8 Definition of Terms

For the purpose of clarity, some key concepts used in the study were defined operationally. They are as follows:

Consumption: The attitude of eating instant noodles by undergraduates in southeast Nigeria.

Dietary Change: The positive change in the eating habit of the students in the five federal universities in southeast Nigeria about instant noodles.

Exposure: The frequency of accessibility of Internet wellness information on healthy eating of instant noodles by undergraduates in southeast Nigeria

Healthy Eating: The medically advised way of consuming instant noodles

Instant Noodles: A variety of junk food consumed by students in the five federal universities in southeast Nigeria.

Internet: A mass medium where students in the five federal universities in southeast Nigeria access wellness information on healthy eating of instant noodles.

Internet Wellness Information: The information available to students in the five federal universities in southeast Nigeria on the Internet about healthy eating of instant noodles.

Knowledge: The awareness undergraduates in southeast Nigeria have about healthy eating.

Southeast: One of Nigeria's geopolitical zones where undergraduates whose consumption of instant noodles forms the focus of this study.

Undergraduates: Regular students of the five federal universities in southeast Nigeria which are Nnamdi Azikiwe University, Awka (NAU), Federal University of Technology, Owerri (FUTO), Michael Okpara University of Agriculture Umudike (MOUAU), University of Nigeria, Nsukka (UNN) and Alex Ekwueme Federal University Ndufu Alike Ikwo, Ebonyi State.(AEFUNAI).

Unhealthful: The state of instant noodles not being healthy but detrimental to health.

CHAPTER TWO

LITERATURE REVIEW

This chapter is a review of related literature on health information, Internet wellness information, instant noodles consumption and other related areas. The chapter is broadly divided into three parts: conceptual review which examined related literature in the area of the study; theoretical framework which anchored on the uses and gratification theory and health belief model and finally empirical review which studied past empirical studies carried out by other researchers in related areas.

2.1 Conceptual Framework

Among the variety of places one can find health information, an increasingly common source is the Internet (Rice and Katz, 2001), with as many as four-fifths of users looking for such content online (Zickuhr, 2010). In fact, given that seeking health information on the Web appears to offer many benefits not available through other means, some see digital media as a means to overcome health disparities (Gibbons, 2005). The sheer volume and variety of information available online is likely much more than what most people have available offline (Hardey, 1999). Furthermore, the sense of anonymity and privacy that the Internet offers leads some to seek sensitive, potentially stigmatizing information through this means (Berger, Wagner and Baker, 2005; Lambert and Loiselle, 2007). The online world also allows people to expand their networks far beyond those available face to face. For instance, those dealing with health issues can exchange information and support with people from diverse

backgrounds and locations who share their concerns and conditions (Barker, 2008; Drentea and Moren-Cross, 2005).

While some hold critical views of the value of the Internet for health-information seeking (Bonnar-Kidd, Black, Mattson and Coster, 2009; Holland and Fagnano, 2008), it appears that there is at least the potential that seeking health content online could offer benefits to those who do so. However, these benefits are only available to those who are able to access and make use of the Internet effectively. These resources and skills are themselves socially patterned. Among those who are online, research has shown that people vary considerably in their Web-use abilities. Not only has research documented differences in online abilities (Hargittai, 2010), but it has also shown that people's sex, racial/ethnic and socioeconomic backgrounds are all systematically related to their skills, with those in more privileged positions reporting higher levels of understanding of the Internet and using it for more diverse purposes (Hargittai and Hinnant, 2008).

2.1.1 Internet as a Source of Health and Wellness Information

Undergraduate students are active consumers of health information (Fox, 2011). For this group of users, major topics of interest includes fitness/exercise, diet/nutrition, life-style choices such as alcohol, smoking, and illegal drug use, as well as sexual health, such as STDs, contraception, and dating violence (Baxter, Egbert and Ho, 2008; Buhi, Daley, Fuhrmann and Smith, 2009; Escoffery et al., 2005; Hanauer, Dibble, Fortin and Col, 2004). Students were also interested in topics such as cancer, diabetes, and mental

health, especially when family histories indicated a high risk for these diseases (Escoffery, et al., 2005).

Numerous studies have examined where students receive health information. It is widely recognized that, in this digital age, the Web has become a leading source for this group. The percentage of students who used the Web for health information increased from 73% in 2005 to nearly 79% in 2010 at Emory University in Atlanta USA. (Escoffery, et al., 2005; Kwan, et al., 2010; Percheski and Hargittai, 2011). In most studies, the Web was treated as one entity and few attempted to examine roles that different platforms, such as search engines, health websites, and social networking sites, play in students' health information searching (Buhi, et al., 2009).

Although, in many domains, the Web has challenged the use of traditional mass media, such as TV, radios, and magazines, these sources are still used by more than half of the first year students in at mid western public university for health information (Kwan, et al., 2010; Percheski and Hargittai, 2011).

Second-generation health-related Internet use goes beyond disseminating information. Numerous authors project what the Internet will offer consumers in the future; often reality is not far behind. Only a few years ago, authors `predicted innovations' now in practice, such as hospital telephone directories online, patients searching for information about upcoming surgical procedures, newly diagnosed patients using the web for patient education (Doyle, 1996), E-mailing physicians (Bazzoli, 1999) and cyberspace visits replacing live visits (e.g. for prison populations, in rural areas) (Keen, 1997). The rate of Internet development quickly renders projections out of date,

blurring a sense of present and future. Some `projections' include: hospital online nurseries to allow friends and family to see newborns (Bazzoli, 1999), physicians using the Internet for patients to review diagnostic information on depression in order to convince the patient of the diagnosis and printing this information as a fact sheet (Stevens, 1998), providers creating customized pages to meet patients' specific needs (Flory, 1998; Stevens, 1998), and patients storing electrocardiogram records on secret web pages for emergency access (Doyle, 1996).

2.1.2 Evaluating Health Information on the Internet

The uneven and often indeterminate quality of online health information raises concerns (McLeod, 1998). The Internet is composed of over 30 million pages lacking consistent peer review, editorial systems or safeguards, placing consumers and professionals in need of quality assessment standards (McGrath, 1997; Rudin and Littleton, 1997; McKinley *et al.*, 1999). Silberg *et al*.'s warning captures the problem: `*caveant lector et viewor* let the reader and viewer beware' (Silberg, Lundberg & Musaccio, 1997, p. 1244). A ‘pressing need' exists for tools to evaluate health information found on the Internet (Lamp and Howard, 1999, p. 34). Little scholarship addresses Internet health information quality in depth (Ambre *et al.*, 1997; Garrison, 1998); many authors address quality briefly in the contexts of particular health professions (e.g. dentists, ophthalmologists, pharmacists) or topics (e.g. aging, women's health, health of newborns) (Rudin and Littleton, 1997; McLeod, 1998; Lamp and Howard, 1999).

To gain an in-depth understanding of students' source preferences and use, it is necessary to understand how they evaluate the sources. Nevertheless, most existing studies focused on examining criteria that cross-sectional consumers employ to evaluate health information on the Internet. These studies consistently suggested that consumers evaluate health information by appraising both the quality and characteristics of information, such as authoritativeness, trustworthiness, currency, and readability, as well as the design attributes of the websites, such as system usability, interface appearance, and information organization and presentation (Cline and Haynes, 2001; Eysenbach and Köhler, 2002; Morahan- Martin, 2004).

Based on observations of fifteen menopausal women searching for information, Sillence, Briggs, Fishwick and Harris (2004) further proposed a staged model of online health information evaluation. At the first stage, users quickly reject certain websites, mainly dependent on design factors (e.g., layout, navigation aids, and interactive features); at the second stage, users meticulously select websites to seek information. This selection is mainly dependent on the appraisal of content factors (e.g., accuracy, topic coverage, and readability). Although the results from the reviewed studies were not specific to college students, they may also apply to this group. For example, Escoffery et al. (2005) surveyed 743 college students on their use of Internet for health information and found that most of them ranked attributes associated with information, specifically accuracy, credibility, currency, comprehensiveness, ease of understanding, and readability, as important factors for judging a health website. The usability of the sites was also an important factor, while website appearance, use of multimedia, and interactivity were reported as less important. In two additional surveys, students were

simply asked to rank the believability of a set of health information sources (Kwan, 2010; Vader, 2011). Another survey-study reported that many students lacked the ability to judge the trustworthiness of health-related websites and articles (Ivanitskaya, O'Boyle and Casey, 2006).

2.1.3 Criteria for Evaluating Health Information Websites

Numerous authors bemoan the difficulty and limitations of establishing quality standards (McLeod, 1998), Health-related websites should be judged by the quality of health information found on them *and* by design features that may facilitate or impede use. Quality should be based on a comprehensive assessment rather than any single criterion. A readily navigable or updated site may contain inaccurate information (Ambre *et al.*, 1997; McLeod, 1998; Rippen, 1999).

2.1.4 Quality of Health Information

Quality of health information found on the Internet should be subjected to the same standards as traditional information, including source and message characteristics, as well as adaptability to targeted audiences. Internet *sources* include both site sponsors and sources of specific information. Credible Internet sources mirror traditional media, including journals, universities and recognized research centers, libraries, government agencies, and professional organizations (Silberg *et al.*, 1997; Lamp and Howard, 1999). However, health information may be found on sites sponsored by little known but credible organizations (e.g. organizations of providers, consumer advocacy groups, voluntary health-related organizations), as well as organizations whose names only

sound credible, commercial sponsors, and individuals (both professionals and members of the public).

1. **Credibility:** constitutes the `premier criterion' for evaluating online health information (Rippen, 1999, p. 4). *Credibility* is defined as in terms of judgments regarding believability of sources of messages, reflected in two dimensions: *authoritativeness* and *trustworthiness* (O'Keefe, 1990).

2. **Authoritativeness:** (also termed competence or expertise) involves judgments of whether the source is in a position to know what is truthful or correct (O'Keefe, 1990). Consumers should seek evidenced-based information and advice from expert sources (Wyatt, 1997; Appleby, 1999). Typically, physicians and health care organizations are perceived as authoritative (Ambre *et al.*, 1997); however, those associated with medical schools are deemed more credible by their research involvement. Evidence of authoritativeness includes:

    a. Clearly identified authorship and/or source. Websites should identify the qualifications and credentials (e.g. educational backgrounds, board certifications, and affiliations with organizations) of their own and cited authors (Silberg *et al.*, 1997; Adelhard and Obst, 1999; Lamp and Howard, 1999).

    b. Attribution**:** References to other publications, particularly clinical studies, permit users to verify information independently (Adelhard and Obst, 1999; Rippen, 1999; Silberg *et al.*, 1997

c. Clearly identified editorial practices and/or seals of approval: Sites should specify editorial review processes and identify reviewers (Rudin and Littleton, 1997; Rippen, 1999). The HON seal of approval signifies ostensible compliance with HON quality standards (described below) (Boyer, *et al.*, 1998).

d. Opportunities for feedback and interactivity**:** The potential for E-mail with a site and associated health professionals, permits consumers to clarify technical information and misunderstandings (Silberg *et al.*, 1997; Adelhard and Obst, 1999; Essex, 1999). Evidence of monitoring links to other sites (Silberg *et al.*, 1997). A site's own authoritativeness is limited by the credibility of the sites to which it is linked.

3. **Trustworthiness:** refers to judgments regarding the character or integrity of a source in terms of motivation to be truthful (O'Keefe, 1990). Even authoritative sources may be biased (Ambre *et al.*, 1997; Wyatt, 1997). Evidence to assess trustworthiness includes:

- Disclosure of mission, purpose, and processes and standards for posting information (Wootton, 1997; Rippen, 1999).

- Disclosure of potential conflicts of interest by the site's sponsors. Conflicts of interest may be based on financial dependence, theoretical preference, or intellectual investment (Rippen, 1999), and may indicate bias (Kibbe, Smith, LaVallee, Bailey and Bard,M. 1997; Silberg *et al.*, 1997; Wyatt, 1997; Adelhard and Obst, 1999). Information embedded in advertisements needs to be labeled as such (Ambre *et al.*, 1997).

- Disclosure of the collection process, use and final destination of information gathered (either explicitly or via tracking mechanisms) about users (Rippen, 1999).

- Warning signs. Often untrustworthy sites include `sounds too good to be true' claims [(Federal Trade Commission, 1997, p. 1), products advertised as cure-alls, and phrases like `scientific breakthrough', `exclusive product', `miraculous cure' or `secret ingredient' [(Ambre *et al.*, 1997), pp. 2–7; (Federal Trade Commission, 1999, p. 1). Plagiarizing or failing to identify sources may tarnish trustworthiness (Ambre *et al.*, 1997).

4. **Disclaimers:** Disclaimers address a site's limitations, scope, purpose, reporting errors and information currency (Ambre *et al.*, 1997). A disclaimer may disclose a site's viewpoint (e.g. advancing surgical interventions). A common disclaimer warns users not to use a site to replace traditional health care, representing itself as information rather than a medical-advice source, thus facilitating rather than replacing provider–client interaction (Silberg *et al.*, 1997; Rippen, 1999).

2.1.5 Message Characteristics

Internet content or information may be judged as `messages', subject to the same evaluation standards as traditional print sources (Garrison, 1998). Evidence of valid messages includes;

a. **Currency of information evidence**: This includes the date of the last site updating, policies and methods regarding updating, and site development date. (Silberg *et al.*, 1997; Adelhard and Obst, 1999; Rippen, 1999).

b. **Accuracy of information:** Judging accuracy independent of other criteria is difficult (Ambre *et al.*, 1997). Users should be wary of information conflicting with commonly agreed upon medical or scientific positions (Ambre *et al.*, 1997). Substance and depth of content may enhance accuracy (Post, 1996).

c. **Organization:** Information should be presented in a logically organized fashion (Adelhard and Obst, 1999).

d. **Readability and intelligibility:** (Appleby, 1999): Health information may be presented in varied formats, including text, graphics and animation. Regardless of format, content needs to be understandable to users (Ambre *et al.*, 1997; Wyatt, 1997). However, text on many health websites exceeds the reading level of the typical consumer (O'Mahoney, 1999). Design features may enhance or detract from intelligibility. For example, large and bold print may enhance readability (Essex, 1999); graphics may clarify by illustrating or confuse if too complex.

2.1.6 Audience Characteristics

A site's audience and context should be identified clearly and the site adapted accordingly. Audience refers to targeted users (e.g. consumers or health professionals), while context refers to a site's topic and intended uses (e.g. informational, advisory, and

commercial) (Adelhard and Obst, 1999). A site's appropriateness, relevance and usefulness should be readily discernable. Content and design should match targeted audiences (e.g. reading and language levels) and contexts (Adelhard and Obst, 1999).

2.1.7 Design Features

Format characteristics may enhance delivery of information, but do not affect the quality of message content (Ambre *et al.*, 1997). Design features vary widely, making sites more or less facilitative when seeking particular information or locating specific sites. Facilitative design features include:

a. **Accessibility:** Websites should facilitate navigation through large quantities of information while maintaining simplicity of technology, operation, and format. Complex sites with high-end technology may enhance aesthetic value but reduce access (Lamp and Howard, 1999; Rippen, 1999). Access is enhanced by relatively simple browser technology, providing options when multimedia browsers are unavailable, and offering options for the hearing and sight-impaired (Ambre *et al.*, 1997; Rippen, 1999; W3C, 1999). Such options include text equivalents for visual and auditory images; avoiding reliance on colour alone to clarify images or messages; and the capacity for activating site elements from a variety of devices (W3C, 1999).

b. **Ease of use:** Logical organization, essential to locating information quickly, underlies a site's usability or ease of use (Post, 1996; Adelhard and Obst, 1999; McKinley, 1999). Simply put, the number of steps needed to locate a site or specific information constitutes one operational definition of navigability

(Wyatt, 1997). The basic premise behind ease of use is designing a website that builds on the *user's perspective*; formative research can facilitate the creation of a consumer-oriented organizational architecture (W3C, 1999). Navigability is facilitated by organizing and grouping ideas and information by categories that make sense from the consumer's perspective; clarifying that organization by grouping links on a navigation bar or menu while avoiding irrelevant links; labeling links in comprehensible and accurate terms; using consistent page layouts with recognizable graphics; and providing a help or search tool.

c. **Links between sites**: help in locating specific information. Useful links match the original site's audience or context, reflect an architecture that permits free movement forward and backward and contain content meeting the criteria described here (Rippen, 1999). Sites should seek to avoid `dead-end' links (Post, 1996) and overloading users with links (McGrath, 1997; Wootton, 1997).

d. **Aesthetic and format characteristics**: Websites combining text, audio and visual formats afford adaptability to consumer preferences and learning styles. Aesthetic qualities should contribute to comfort and use. Colour coordination, lack of clutter, unobtrusive backgrounds and legibility of text contribute to quality (Post, 1996). Technical materials may be simplified by translation into pictorial format (Essex, 1999). However, too many graphics may slow access (McGrath, 1997).

2.1.8 Mechanisms for Evaluating Websites

Access to peer-reviewed resources, user surveys and codes of conduct may facilitate consumers' task of evaluating online health information.

i. **Peer review:** Unlike medical literature, much online health information lack peer review (Ambre, 1997; Rippen, 1999). However, informed consumers increasingly can access peer-reviewed health information (via sites that provide abstracts and full-text journal articles, often with extensive archives), e.g. consumers' access to Medline equals that of professionals. Beyond scientific research articles, consumers can access websites developed specifically to assure high quality evidenced-based information (e.g. Healthfinder, MedlinePlus) to search for information or verify that found elsewhere (Wootton, 1997).

ii. **Rating systems*:*** Few websites feature user-rating systems (Ambre *et al.*, 1997). Some post unofficial reviews, ratings and standards for evaluating sites (Essex, 1999). For example, Quackwatch.com was designed to combat health-related fraud both on - and offline (Barrett, 2001). A review of `best' attempts to develop systematic rating systems questioned both their validity and benefits, and concluded they may do more harm than good. (Jadad and Gagliari, 1998). As Berland et al (2001) point out, when sites or systems rely on voluntary self-assessments, reliability and validity are unknown. Numerous organizations offer criteria for assessing websites, but such assessments are for personal use rather than formal site evaluation.

2.1.9 Code of Conduct

At present, the most widespread attempt to apply a code of conduct to online health information was developed by Health on the Net (HON). HON is a self-governing body promoting eight (8) ethical standards for online health information:

1.) Advice provided by qualified professionals, unless otherwise indicated.

2.) Support versus replace existing provider–client relationships.

3.) Confidentiality of user data.

4.) Clear referencing with links to sources where possible and dates of modification noted.

5.) Balanced evidence for claims.

6.) Information clear with contact addresses to facilitate clarification.

7.) Sources of funding indicated clearly.

8.) Any advertising (as funding) acknowledged and clearly differentiated from the site's content (Boyer, 1998).

Websites that comply with the HON code contain the HON logo (Health on the Net Foundation, 1997; Boyer, 1998). As of January 2000, HON registered connections to its code from more than 5000 external servers and more than 20,000 external web pages (Health on the Net Foundation, 2000). However, HON encourages use of their

verification system to determine if sites are bona fide HON subscribers (Health on the Net Foundation, 2000).

2.1.10 Youths and the Use of the Internet for Health Information

Online health information seeking has its benefits and shortcomings. Parts of the benefits include timeliness and a broad range of information on specific and different health and disease conditions. Through this process, health information becomes readily available in a way that patients' knowledge becomes widened and relevant for more participation in therapeutic relationships (Sillence, Briggs, Harris and Fishwick, 2007). It could also promote the making of more informed decisions and compliance with medications. However, online access to health information also raises debates about the quality, trustworthiness, and applicability of the enormous volume of health information among different social categories (Cline and Haynes, 2001).

Escoffery et al. (2005) in a study among college students in the United States showed that the use of the Internet among students is rising. Specifically, the study showed that more than 70% of the respondents had used online health information, and more than 40% reported using it frequently. This increase is similar to Kitikannakorn and Sitthiworanan (2009) findings among students in Thailand. In both studies, about 70% of the students with access to online health information sought information on general health, disease treatment, and nutrition. Reasons for using the Internet include easy access and availability of updated information. Youth's involvement and active consumption of online health information also reflected in Horgan and Sweeney's (2012) findings in Ireland. The Horgan and Sweeney's (2012) study showed that more

than 66% of the students use the Internet to search for health information on a specific illness, social health fitness, and nutrition information. Shaikh, Shaikh, Kamal, and Masood (2008) also indicated that 43.4% of the students in Islamabad used the Internet for seeking health information. In contrast, a survey in India by Birpreet, Singh, and Kumar (2011) indicates a low (14%) usage of the platform for health information, despite the number of students using the platform for other things. Infrastructural developments, availability of quality Internet access, and ownership of the computer or mobile phones with the Internet access accounted for significant variations in terms of access. This is vital to improving Internet access, especially among rural dwellers. Beyond the structural constraints and benefits, the quality of health information, adequacy, and trustworthiness remains paramount to the information seeker and the society.

The quality of health information provided through the Internet has emerged as a major issue, especially with the growing rate of utilizing this platform for firsthand and snappy information (Scott, Gilmour and Fielden, 2008). This according to Birpreet (2011), led to the evolution of the Internet Healthcare Coalition (IHC), a group of private and not-for-profit organizations regulating health care sites and services on the Internet.

2.1.11 Healthy Eating and Communication about Healthy Eating

In the context of this study, healthy eating was defined as eating behaviour that can enable a person to achieve, “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2007).

Healthy eating habits are developed through socialization, in which families, schools, the community, government and international health organizations may all play an active role (Kelly, Turner and McKenna, 2006; McGinnis, Gootman and Kraak, 2006; Raiha, Tossavainen and Turunen, 2006). Parents serve as role models and influence adolescents' purchasing behaviour directly (McNeal and Ji, 1999). Empirical data confirms that parental support for healthy meals and nutrition skills is positively associated with adolescents' healthy food choices and healthy eating habits (Raiha, Tossavainen and Turunen, 2006; Young and Fors, 2001). Schools disseminate nutrition and health information through the formal curriculum as well as extracurricular activities. They can support healthy eating by monitoring the nutritional value of the food supplied in lunches and snack shops on their premises (Nutbeam, 2000). Recently there are initiatives to introduce school-based intervention programs to encourage the consumption of fruits and vegetables among school aged children (Reinaerts, De Nooijer and De Vries, 2008). Interestingly, however, peers have been shown to have a negative influence on healthy eating (Kelly, Turner and McKenna, 2006). Conflict between parental influence and peer influence may prompt young consumers to refuse to bring healthy food to school when their friends prefer food and beverages that are high in calories and low in nutrients (loosely termed junk foods). Peers' views on body weight and body image can also trigger unhealthy dieting practices such as inducing vomiting or using laxatives for weight control (McGinnis, Gootman and Kraak, 2006). Governments and international health organizations may play a role in health promotion by advocating balanced diets and running health-related publicity campaigns. Ambler (2006) proposed that the governments should launch pro-health

promotional campaigns targeted at the socio-economic and demographic groups most in need of support.

In addition to parents, teachers, peers and governments, food advertisements often target children, and may encourage them to pressure their parents to purchase foods with poor nutritional value (Kelly, Turner and McKenna, 2006). In 2004, an estimated US $15 billion was spent in the United States on advertising and marketing directed at children and youth, of which a major share was food and beverage marketing (Schor, 2004). Through the use of cartoon figures, jingles and animations, food advertisements aimed at young consumers associate the consumption of foods with fun, enjoyment and peer acceptance (Center for Science in the Public Interest, 2003).

Parents, schools, governments, friends and food advertisers are thus competing to influence adolescents' health perceptions and food choices. A focus group study of 119 children aged 7 to 11 in Australia found that their awareness of food healthiness was high, but contradictions in the messages they received were found to cause confusion and to constitute a barrier to healthy eating (Hesketh et. al., 2005). Another focus group study of 300 children aged 7 to 11 in the U.K. found that children were aware of the relationship between their diet and health. They understood that a healthy diet should not contain too much fat (Dixey et al., 2001). A focus group study of 73 adolescents identified four key factors influencing healthy eating: physical and psychological reinforcement of eating behaviour; perceptions of food and eating behaviour; perceptions of contradictory food-related social pressures; and perceptions of the concept of healthy eating itself. The adolescents said they experienced competing

pressures which in some cases led them to eat in ways which they recognized as unhealthy and to try to lose weight (Stevenson, 2007).

Such previous studies tended to focus on a particular socializing agent in isolation rather than taking them together and assessing their relative effectiveness. In addition, the all-important adolescent group has been relatively under-researched. Adolescents' perceptions of eating communication need study, since teenagers are gradually becoming more independent in both their thinking and behaviour (Eysenck, 1998).

2.1.12 Instant Noodles and Its Health Implications

Since its introduction in 1988, Indomie is the most popular instant noodles brand in Nigeria and brands are now eaten in most households across the country. Fifteen other brands of noodles had appeared in the market, they are Supreme, Honeywell, Chikki, Tummy Tummy, Dangote, Mimee, Golden Penny, Sun Yum, Uno, Cherie, Star, Mc Chew, Niccus, Smoodles and Chefime. In 2013 a wholly owned and managed Nigerian company-based in Abuja, Royal Mills and Foods limited, launched a new brand of instant noodles, De-Royal Instant Noodles with two flavours (chicken and onion chicken), in Nigeria.

In 2015, The National Agency for Food and Drug Administration and Control (NAFDAC) warned that some Maggi noodles produced by Nestle India contained excess lead and were therefore deemed unsafe and hazardous for human consumption. Nestle recalled its Maggi instant noodles from stores across India following the report by the Indian Food Safety Regulators of probable lead contamination. Lead exposure causes an estimated 143,000 deaths a year worldwide. in view of the potential safety

concerns on consumption of the lead contaminated Maggi instant noodles, NAFDAC warns that Maggi instant noodles produced by Nestle India should not be consumed (Nigerian Monitor, (2015).

Onyema, Ekpunobi, Edowube, Odinma and Sokwaibe, (2014), in their work ‘quality assessment of common instant noodles sold in Nigeria market’ explained that Wheat flour which is usually used to make instant noodles is not only low in fibre and protein content but also poor in essential amino acid; lysine Flour of hard wheat (Tritium aestivuml) 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. Onyema (2014) further analysed and found out that all essential elements investigated in the noodles sample occurred within the threshold limit of WHO (2003) standard and the heavy metals in some samples occurred at levels relatively above the minimum tolerable limit of WHO (2003).

They suggested that caution should be taken in the successive consumption of these noodles to avoid diseases associated with the overtime accumulation of these heavy metals especially in samples where they appeared in relatively high amount. Lim (2014) in his work remarks that though instant noodles may be convenient, cheap and best served hot, its health risk is very high. For Lim, it is not healthy.

Shin (2014) equally states that instant noodles which are commonly known as ramen, a staple food for college students and other young adults, as well as people in certain cultures may increase people's risk of metabolic changes linked to heart disease and stroke. In Shin’s (2014) study, women in South Korea who consumed more of the

precooked blocks of dried noodles were more likely to have "metabolic syndrome" regardless of what else they ate, or how much they exercised. Accordingly, people with metabolic syndrome may have high blood pressure or high blood sugar levels, and may also face an increased risk of heart disease, stroke and diabetes.

According to Shin (2014), although instant noodles is a convenient and delicious food, there could be an increased risk for metabolic syndrome given its high sodium, unhealthy saturated fat and glycerin loads of harmful wastes. Shin and his colleagues at Baylor University and Harvard (2014) analyzed the health and diet intakes of nearly 11,000 adults in South Korea between ages 19 to 64. The participants reported what they ate, and the researchers categorized each participant's diet as centered on either traditional healthy food or fast food, as well as how many times weekly they ate instant noodles.

Sharma (2014) pointed out that since these instant noodles are made to bear a longer shelf life, they are also highly processed. Besides their level of quality control, they are low in nutritive content; high in fat, calories and sodium; and are laced with artificial colours, preservatives, additives and flavourings which are not considered favourable to health. In most cases, Sharma continued, monosodium glutamate (MSG) as well as tetra-butyl hydroquinone (TBHQ), a chemical preservative that is derived from the petroleum industry may be present in instant noodles for their taste enhancing and preserving properties. Though dietary intake of these elements is allowed within a limit, regular intake of these can cause severe health issues.

Taneya, Biswas and Shams-Ud-Din (2014) in their work reported on the effect of composite flours consisting of wheat and sweet potato flour on the physicochemical and sensory properties of instant noodles. In the study sweet potato flour was incorporated into wheat flour at flour replacement levels of 0, 10, 20 and 30%. Taneya et al found out that the levels of sweet potato flours increased in the formulations of instant noodles that increased ash, starch, crude fibre and total carbohydrate contents but decreased level of protein. The instant noodles with 20% sweet potato flour had decreased moisture content but had higher levels of fat and calories (per 100 g) when compared with 10% sweet potato flour in the formulation. The instant noodles with 0, 10, 20 and 30% of sweet potato flours higher level of water absorption and increased volume of cooked noodles. Instant noodles with 30% sweet potato flour that the highest sensory scores for colour, flavour, texture and overall acceptability when compared with control and other samples but noodles with 20% sweet potato flour was equally acceptable. Studies by Taneya et al (2014) on the shelf life of dried instant noodles packed in polyethylene bags showed no remarkable change in mold growth, texture and flavour but free fatty acid value, peroxide value and moisture content slightly increased gradually after 90 days duration at room temperature.

Ngoo (2012) categorically stated that instant noodles are often criticized as unhealthy or junk food. According to him, a single serving of instant noodles is high in carbohydrates and fat, but low in protein, fibre, vitamins and minerals. Another concern regarding the consumption of fried foods, including instant noodles is the possible presence of oxidation products, including acrylamides and aldehydes resulting from poor maintenance of the oil being used to produce them. If the cooking oil is not

maintained at the proper temperature or changed as often as necessary, these oxidation products accumulate toxins and are present in the food. Proper production standards are defined and promoted by World Instant Noodles Association (WINA) (2014) to mitigate these risks after incidents of instant noodles contamination in developing Asia says (Ngoo 2012)

2.2 Theoretical Framework

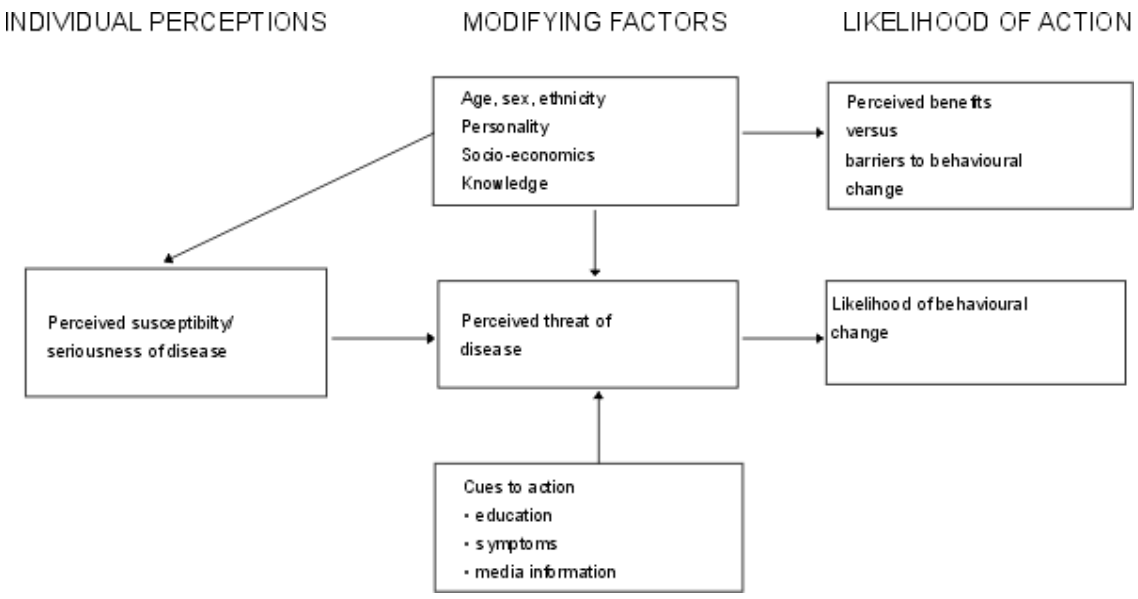
This study is anchored on Health Belief Model and Uses-and-Gratification Theory. Health believe model (HBM) has been extensively employed in social science research to explain health related behaviour. Health believe model (HBM) is used to understand health behaviour and possible reasons for non-compliance with recommended health action by providing guidelines for programme development allowing planners to understand and address reasons for non-compliance (Becker and Rosenstock, 1984). Uses and gratifications theory on the other hand, is an approach to understanding why and how people actively seek out specific media to satisfy specific needs. It is an audience-centered approach to understanding mass communication. It assumes that audience members are not passive consumers of media.

2.2.1 Health Belief Model

The Health Belief Model (HBM) is a psychological health behaviour change model that attempt to explain and predict health-related behaviours, particularly in regard to the uptake of health services (Janz and Marshall, 1984) by targeting various aspects of the model's key constructs. The Health Belief Model (HBM) was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegeles working in the U.S.

Public Health Services and remains one of the best known and most widely used theories in health behaviour research.(Carpenter, 2010) The model derives from psychological and behavioural theory with the foundation that the two components of health-related behaviour are (a) the desire to avoid illness, or conversely get well if already ill, and (b) the belief that a specific health action will prevent, or cure illness. Based on the assumptions of this model, Adum (2011) states that a person will take a health-related action if that person feels that a negative health condition can be avoided; has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition; believes that he/she can successfully take a recommended health action. HBM has six theoretical constructs: Perceived severity, perceived susceptibility, perceived benefits, perceived barriers, cues to action and self-efficacy.

A Conceptual Model for Health Belief



Source: Glanz et al, 2002, p. 52

Perceived Susceptibility: Perceived susceptibility is one of the more powerful perceptions in prompting people to adopt healthier behaviours. It equally defines population at risk, risk levels, personalize risk based on a person's features or behaviour; heightens perceived susceptibility if too low. Stretcher and Rosenstock (1997) observe that when the perception of susceptibility is combined with seriousness, it results in perceived threat. If the perceived threat is to a serious disease for which there is real risk, behaviour often changes.

Perceived Severity: This refers to a person's feelings on the seriousness of contracting an illness or disease leaving the illness or disease untreated. It entails understanding one's opinion of how serious a condition and its consequences are and specifies consequences of the risk and the condition.

Perceived Benefits: This refers to health-related behaviours that are influenced by the perceived benefits of taking action (Glanz., Barbara and Viswanath, 2008). It refers to an individual's assessment of the value or efficacy of engaging in a health-promoting behaviour to decrease risk of disease. It entails a person's perception of the effectiveness of various actions available to reduce the threat of illness or disease.

Perceived Barriers: This relates to an individual's assessment of the obstacles to behaviour change or performing a recommended health action. There is wide variation in a person's feelings of barriers, or impediments, which lead to a cost/benefit analysis. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous, time-consuming or inconvenient.

Cues to Action: This triggers the decision-making process to accept a recommended health action or prompting engagement in health-promoting behaviours. Cue to action may be facilitated by exposure to information.

Self-Efficacy: This refers to an individual's perception of his or her competence to successfully perform a behaviour. This explains the level of a person's confidence in his or her ability to successfully perform a behaviour.

The available evidence indicates that the health belief model has only a weak predictive power in most areas of health related behaviour. This is in part a result of poor construct definition, a lack of combinatorial rules and weaknesses in the predictive validity of the health belief score psychological components (Armitage and Conner 2000). Harrison et al (1992 2-B) conducted a meta-analysis of studies using the health belief model in adult populations, aimed at quantifying the independent relationships between each of its four main components and the reported health behaviours. They found weak effect sizes, accounting for between 0.1 and 9 per cent of variance. These authors were not able to include other elements of the model because of the lack of studies incorporating them, and concluded that 'the weak effect sizes and lack of (study and construct) homogeneity indicate that it is premature to draw conclusions about the predictive validity of the health believe model as operationalized.

Zimmerman and Vernberg (1994) conducted a critical comparative meta-analysis of models of preventive health behaviour. This included a total of sixty studies overall. Of these thirty, 50 percent were Health Belief Model studies. They found that the Theory of Reasoned Action (see below) was a substantially better predictor of health

behaviours than the HBM. The TRA was able to explain just over 34 percent of observed health behavioural variance, as compared to 24 percent in the case of the HBM. The authors concluded that the HBM is in essence a list of variables rather than a theory based on adequately specified relationships between its core components.

The development of the health belief model was of pioneering significance in the early 1950s. Systematic analyses using the full range of components that it today incorporates might cast light on the impact of social and other factors associated with inequalities in health, and the reasons why individuals and groups may not take up health improvement or protection opportunities. However, the HBM is not in itself clearly or adequately specified, and the available evidence indicates that in practice its application appears to be inadequate for such purposes. Further, although the HBM may be used to derive information that may then prompt interventions designed to change health beliefs and behaviours, using the model itself cannot inform decision making as to how such interventions might best be structured (Taylor, Bury, Campling, Carter, Garfied, Newbould and Rennie, 2007).

The value of the ‘perceived threat’ element serving as a central indicator of behavioural motivation in the health belief model has been questioned. So has the phenomenological orientation of its design. Notwithstanding components like perceived barriers, demographic and socio-economic descriptors, as normally applied, this model may be taken implicitly to assume that people are rational actors, driven by their conscious perceptions of the world. This may misleadingly suggest that health behaviours can always best be understood as being under volitional control, rather than in a large part determined by combinations of circumstantial reality and individuals’

habitual, emotional, unconscious and otherwise non-rational reactions to the external world. The research provides evidence that the overall explanatory power of the health belief model is limited, even simply as compared to that of alternative social cognition models such as the Theory of Reasoned Action (Taylor, Bury, Campling, Carter, Garfield, Newbould and Rennie, 2007).

2.2.2 Uses and Gratifications Theory

The uses and gratifications theory of the media is one of the theories of mass communication that call attention to what people do with the media rather than what the media do to people. According to Edegoh, Nwanolue and Eze (2013) the uses and gratification theory was propounded by Elihu Katz, Jay Blumler and Michael Gurevitch in 1974. The theory holds that people influence the effects that mass media have on them (Anaeto, Onabanjo and Osifeso, 2008, p. 71). The assumption of the theory is that people are not just passive receivers of media messages but actively influence the message effects. This is because people selectively choose, attend to perceive and retain mass media messages on the basis of their needs, beliefs, etc. Thus, Anaeto, Onabanjo and Osifeso (2008, p.71) rightly observed that there are as many reasons for using the media as there are media users. Uses and gratifications theory has a lot of relevance to the present work because it perceives recipients of media offerings as actively influencing the effect process, since they selectively choose, attend to, perceive and retain media messages.

There are three objectives this theory sets to achieve:

a. To explain how individuals use mass communication messages to gratify their needs. As West, Richard, Turner, and Lynn (2007) put it ‘what do people do with the media?
b. To discover underlying motives for individuals media use.
c. To identify the positive and negative consequences of individual media use.

At the core of uses and gratification theory lays the assumption that audience members actively seek out the mass media, to satisfy individual needs. No wonder Blumler and Katz (1974) point out that uses and gratification theory suggest that media users play an active role in choosing and using the media. Users take an active part in the communication process and goal oriented in their media use. The theorist said that a media user seeks out a media source that best fulfills the needs of the user. Uses and gratification theory assumes that the users has alternate choices to satisfy their need and takes a more humanistic approach to looking at media use. Blumler and Katz believe that there is not merely one way that the populaces use media instead; they believe there are as many reasons for using the media, as they are media users. The theory posits that media consumers have a free will to decide how they will use the media and how it will affect them. Blumler and Katz are clearly seen by the fact that they believe that media consumers can choose the influence the media has on them as well as the idea that users choose media alternatives merely as a means to an end. To them, uses and gratification theory is the optimist view of the media.

The theory takes out the possibility that the media can have an unconscious influence over our lives and how we view the world. No wonder, Severin, Waner, Tankard and James (2000) and McQuail (2010) stated that uses and gratification theory discusses

how users deliberately choose media that will satisfy given needs and allow one to enhance knowledge, relaxation, social interactions/companionship, diversion or escape. Uses and gratification theory can be seen in cases such as personal music selection. We select music not only to fit a particular mood but also in attempt to show empowerment or other socially conscious motive. There are different types of music and we choose from them to fulfill a particular need.

The theory falls under the active audience theories which focus on the effects of the media on the audience. Active audience explains what people do with the media as opposed to source-dominated theories which focus on the effects of the media on people. The assumption is that individuals influence the effects that the mass media have on them. The theory is based on the premise that the audience uses the media to gratify certain identified needs (McQuail, 1994). The audience selectively chooses, listen to, perceive and retain the media messages on the basis of their needs, beliefs, and more.

Four domains of individual needs which the media would gratify as identified by McQuail (1994) are:

a) The use of media as a form of diversion or escapism.
b) The use of media as a form of companionship for those who are socially isolated.
c) The use of media to understand and evaluate one's personal identity.
d) The use of media as a form of surveillance to provide information on the social world.

The four elements of the Uses-and-Gratification model as defined by Katz and Blumber (2004) are:

a) The audience is conceived to be active and goal directed.
b) There is no straight line effect of media content on attitude and behaviour.
c) The media competes with other sources of need satisfaction.
d) The goals of mass media can be derived from qualitative data supplied by individual audience members.

Schramn provided a concept to answer the question

i) What determines which offerings of mass communication will be selected by a given individual?

ii) What determines the media content that an individual pays attention to?

His claim is that individuals measure the level of gratification they expect from a given medium against how much effort they must make to secure that reward. The media is an essential part of our everyday life, as it aids in the navigation of our social reality in particular (Alasuutari, 1999).

Media uses and gratifications are all about the media consumers being in control of the communication process. This is because he/she goes into the communication process with certain social and psychological needs which determine where and how he/she gratifies those needs with respect to the media and their contents. The basic tenet of uses and gratifications is that certain personal, interpersonal and social needs determine how and why people select media which invariably means that media needs are

influenced by personal and social identities ((Katz, Blumler and Guventich, 1974; Rosengreen, Wenner and Palmgreen, 1985). Such personal identities as age, gender, marital status, socio-economic status and ethnic identity have evolved as variables of media gratifications over the years (Emeanyonu, 1985; Ruggiero, 2000; Lee, Goh and Chua, 2010). Many gratification measures have been developed over the years but all of them seem to revolve around the five traditional typologies of Katz, Guventich and Haas (1974) which include cognitive needs (for information, knowledge and understanding of the environment); Affective needs (for aesthetic, pleasure and emotional experiences); Personal integrative needs (for credibility, confidence, stability and personal status); Social integrative needs (for contact with friends, family and the world) and escapist needs (for escape, diversion and tension release).

2.3 Relevance of the theories to the study

Both theories are relevant in the sense that they are applicable to human satisfaction of information need. Health belief model presents viable processes of applying information to health-related issues through the identified stages of perceived susceptibility, perceived severity, perceived benefits, perceived barrier, cues to action and self-efficacy. On the other hand, the uses-and-gratifications theory examines individual use of media. Health information is necessary for individuals to understand health actions of over consumption of instant noodles.

2.4 Review of Empirical Studies

In the study titled ‘Snacking and sweetened beverage consumption among adolescents in Sagamu, Southwest Nigeria’ Sholeye, Animasahun, Salako and Oduwole (2018)

aimed at assessing the pattern of snacking and sweetened beverage consumption among in-school adolescents in Sagamu, Nigeria. The study involved 620 in-school adolescents, selected via multi-stage sampling, using a semi-structured, self-administered questionnaire. Data were analyzed using SPSS 20.0. Relevant descriptive and inferential statistics were calculated, with $p<0.05$. Findings showed that all respondents consumed sugar-sweetened beverages, at different regularity with a significant difference between males and females regarding the pattern of consumption of sweetened beverages and reasons for the choice of drinks. Almost all respondents snacked at varying frequencies, with more women snacking than men. Over 51.7 per cent of respondents snacked daily with no significant difference between males and females respondents regarding frequency of snacking. Pies and pastries were most frequently consumed. There was a significant difference between the preferences of male and female respondents. The study concludes that consumption of refined sugars was high among respondents, indicating presen**ce** of unhealthy dietary habits and that **c**oncerted efforts at nutrition education through the school system should be made to reduce the risk of non-communicable diseases among adolescents.

Health risk assessment of instant noodles commonly consumed in Port Harcourt, Nigeria was investigated by Iniobong, Atieme and Inimfon (2017). The study assessed the human health risk from heavy metals and PAHs in six instant noodles sold in Port Harcourt, Nigeria. The result found that levels of heavy metals in some brands of the noodles were above the maximum permissible limits established by World Health Organization (WHO) and that continuous consumption of these noodles may lead to heavy metal toxicity which could result in impaired neuronal and renal functions. The

study recommended that consumption of these brands should be greatly minimized, if not completely avoided and that regulatory agencies of government such as the National Agency for Food, Drug Administration and Control (NAFDAC), Standards Organization of Nigeria (SON) and Consumer Protection Council (CPC) should strictly monitor the activities of these noodles producers to ensure that only wholesome noodles are supplied to consumers.

In another study titled "An Assessment of Undergraduates' Nutrition Awareness Level on the Scourge of Cancer as a Current Devastating Phenomenon in Nigeria"**,** Oke (2016) examined the undergraduates' nutrition awareness level on the scourge of cancer as a current devastating phenomenon in Nigeria. A descriptive research design was adopted for the study. A total of 600 undergraduates were selected through stratified and random sampling techniques from three universities in Ogun State, Nigeria. A self-developed questionnaire and pilot-tested was used to collect relevant data from the respondents. The data gathered from the study were analysed using descriptive and inferential statistics. The results revealed that Nigerian undergraduates are not well informed on the importance of nutrition in the prevention of cancer. Also, socio-personal characteristics such as gender, discipline, and school type significantly did not influence on how informed the undergraduate students were on disease prevention and making adequate food choices. In view of the outcome of the findings in this study, it was recommended that public health education be intensified to promote people's awareness of the consequences of poor nutrition and sedentary lifestyle; and making healthy food choices.

In a study “Instant noodles, processed food intake, and dietary pattern are associated with atopic dermatitis in an adult population” Park, Choi and Bae (2016) investigated the incidence of atopic dermatitis (AD). It is continuously increasing in industrialized countries, possibly due to dietary and lifestyle changes. However, the association between processed food intake and atopic dermatitis has not been studied in a large adult population. Atopic dermatitis (AD) is an inflammatory skin disease with early onset. It is primarily a disease of infants and children, in whom its prevalence is approximately 20 percent as compared to a prevalence of about 3-6 percent in adults. However, the overall prevalence has continuously increased even among adults in industrialized countries such as Korea over the last several decades. The study investigated the association between dietary habits and atopic dermatitis in 17,497 adults in the 2009-2011 Korean National Health and Nutrition Examination Survey (KNHANES). The study identified 4 dietary patterns using principal components analysis of a 63-item food frequency questionnaire: the “traditional dietary pattern”, rich in rice and *kimchi*; the “processed food pattern”, with more meat, instant noodles, soda, and processed foods; the “healthy dietary pattern”, high in grains, vegetables, fruits, and seaweeds; and the “drinking dietary pattern”, mainly drinking coffee and alcohol. Adjusted odds ratios (ORs) for atopic dermatitis were calculated according to dietary patterns after adjusting for potential confounders with incorporation of sample weights for the complex sample design. The “meat and processed food” pattern was associated with a significant 1.57 fold higher ORs for atopic dermatitis than the low consumption group. Further analysis revealed that the increased atopic dermatitis was most closely associated with instant noodles. In contrast, the groups with high intake of

rice and *kimchi* exhibited lower ORs, 0.38 and 0.43 folds, compared to the low intake group. The study concluded that consuming instant noodles, meat and processed foods was associated with increased prevalence of atopic dermatitis, whereas consuming rice and *kimchi*, and coffee was associated with decreased prevalence of atopic dermatitis

In Farrand (2016) "Know Your Noodle" he found out that reducing salt intake is one of the most cost-effective public health interventions to reduce the global burden of non communicable disease (NCDs); by lowering blood pressure, and thereby reducing the risk of stroke, heart disease and deaths. Many countries are working towards achieving the global target of a 30% relative reduction in mean population salt intake towards the World Health Organization (WHO) <5g target. The World Health Organization Collaborating Centre for Population Salt Reduction at the George Institute for Global Health in Sydney has a remit to support countries to achieve this target including developing programs of work to reduce salt levels in food. In most developed countries, the majority of salt in the diet is from processed foods added by the food industry and so reformulation efforts to reduce the amount of salt added to processed foods are paramount to reduce population level salt intake. Conversely, in many developing countries the major source of salt in the diet often is salt added during cooking or at the table. However in recent years there has been a marked change in food consumption patterns and a notable shift towards eating more processed foods, particularly in urban settings where processed foods are increasingly available. A key example of this is instant noodles; a highly processed food product which is widely available at a low cost. Noodles can be eaten as a snack, as a meal, part of a meal, and in some cases are eaten more than once a day. According to The World Instant Noodles

Association (WINA) 270 million servings of instant noodles are consumed worldwide each day, with 80 percent of total consumption in Asian countries. For the methodology, Data collected between 2012 and 2016, was extracted from existing food composition database and from store survey data in 10 countries including Australia, China, Costa Rica, Fiji, India, Indonesia, New Zealand, Samoa, South Africa and the UK. Data extracted included brand name, products name, pack size, serving size, sodium mg/100g, and salt g/100g. In addition, we recorded whether nutrition information was given as per dry weight, 'as sold', or "as prepared" according to manufacturer instructions. Data was categorized into two main groups: 'as sold' or 'as prepared' according to the listed nutrition information. Products categorized 'as sold' listed sodium information based on the dry weight. Products that were categorized 'as prepared' listed sodium information based on the product as prepared for consumption according to manufacturer instructions, for example, 'add x milliliters of water'. Major findings included that global taste preferences cannot account for the differences in sodium content of instant noodles between countries, as there were huge ranges in sodium content of instant noodles within each country.

In another study, "Fast food consumption pattern and body weight status among students of Obafemi Awolowo University Ile- Ife Nigeria" carried out by Bakare and Olumakaiye (2016). The study assessed fast food consumption pattern (FFCP) and body weight status among the undergraduates of Obafemi Awolowo University, Ile-Ife, Nigeria, living in different halls of residence on the university campus during the Rain semester of 2011/2012 session. The study employed survey research design to give an insight into the pattern of fast food consumption and its consequent risk of obesity

among undergraduates. A simple random sampling technique was employed to select 40 students from each hall of nine kinds. The sum total of respondents was 360. The study relied on primary data which was collected through personally administered questionnaires. The respondents' weight and height were taken using a weighing scale and meter rule, respectively to determine the Body Mass Index (BMI) which was used to assess students' body weight status among the respondents. Data collected were summarized and presented using means and percentages. The findings revealed that high prevalence of FFCP is responsible for overweight and obesity of different classes among the undergraduates. Students often give excuses of lack of time for cooking as a result of lecture attendance and the need to study for continuous assessments and examination. Majority of undergraduate students fall into the adolescent stage while in school, while a good number of them engage in ‘binge’ eating or drinking. Adolescence is usually associated with uncontrolled drinking or eating caused by a disorder (binge) resulting from an unrestrained and often excessive indulgence resulting in alcoholism. It was found that obesity prevalence among the respondents according to gender showed higher eating disorders among female students. This finding corroborates data from previous works. Based on the findings, the study recommended that the university commission should postulate a compulsory general elective course on physical health and nutrition education across board to give fitness to students and teach them nutrition information and knowledge.

In “Study on the correlation between instant noodles intake and cardio metabolic risk factors of healthy Korean university students” carried out by Soojin (2015), the investigation showed that South Korean people have consumed over 3.6 billion

packages of instant noodles in 2013 which was the highest figure in the globe. According to the 2012 Korean National Health Statistics Report, the early mortality during the age from the twenties to the forties caused by cardiovascular disease has been increased. This study is aimed to define the correlation between instant noodles intake and cardio metabolic risk factors of healthy young men and women who are 18 to 29 years old. A total of 3,876 subjects with the age of 18 to 29 years were selected from the same university. The subjects had gone through the same regular physical exam in 2013 and had no history of chronic disease. 2013 web survey and health check-up data including questionnaires on eating habits and health behavioural habits have been used for this study. Also, serum cholesterol sub-fractions, fasting glucose, blood pressure and physical data including body weight and waist circumference were measured. BMI, abdominal circumference, blood pressure, fasting glucose level, low HDL level, triglyceride level, number of metabolic syndrome components significantly increased according to the higher frequency of instant noodles intakes. Even after the control of potential confounding factors (health behavioural variables, other food intake variables), BMI, abdominal obesity, systolic blood pressure, diastolic blood pressure and serum triglyceride level have been statistically increased in accordance with the frequency. The study suggests that the frequency of instant noodles intakes is significantly correlated to the cardio metabolic risk factors of healthy 18-29 year olds.

In a study "Awareness and Usage of Internet-based Health Information for Self-Care in Lagos State, Nigeria: Implications for Healthcare Improvement" Oyelami, Okuboyejo and Ebiye. (2013). The work investigated Nigerians' Internet pattern usage, their awareness of, and factors influencing their use of the Internet for self-care health

information, given that healthcare in the country is generally inadequate. A questionnaire-based assessment of 205 individuals selected randomly was carried out. Cronbach's alpha was used to determine the consistency of the constructs while SPSS was used for data analysis. The results indicate that 61% of the participants use the Internet for self-care and are aware of the availability of health information on the Internet. The participants also reported that they have used the Internet for communication, social networking, research and banking purposes. The results validate perceived ease of use, compatibility, Internet self-efficacy, and technical support and training as factors to consider in using the Internet for self-care.

In Kivuti-Bitok, McDonnell, Pokhariyal, and Roudsari (2012), the use of Internet-based and mobile e-health tools to increase information access among cervical cancer patients in Kenya was studied. The study investigated the extent of the use of mobile phones and Internet by cervical cancer patients in accessing information related to cancer treatment and management; the characteristics of patients associated with Internet use and identified barriers faced by the patients in Internet use. The study revealed the low level use of the Internet by cervical cancer clients attending public referral facilities in Kenya. This was attributed to lack of knowledge on how to use computers and lack of access to computers. High level of access to mobile phones was also reported by the study which concluded that there was a greater potential to Internet use through Web access via mobile phones.

Internet access characteristics among low-income populations associated with a supplemental nutrition program were compared in Bryan, Matthew and Fowler (2012). They provided results from three independent studies focusing on the Internet's

potential for providing nutritional education in a low-income population. Specifically, issues of computer ownership, Internet access, and location of Internet access among those receiving assistance from the US Department of Agriculture Food and Nutrition Service's Special Supplemental Nutrition Program for Women, Infants and Children (WIC) were assessed. This was done in order to determine the extent of this population's ability to access Internet- based nutrition information. A cross-sectional design was used with data reported using frequency distributions and Chi-square ($p<.05$) analyses. A total of 2,942 WIC clients completed the questionnaire at local agencies in Michigan and Washington. Over 2/3 of participants indicated having some access to the Internet, with 50% to 63% having "easy access." The result of the survey showed that older participants were more likely to access the Internet from home or work, while younger clients were likely to access from parent's home or WIC clinic and more likely to enjoy learning from the Web, as were those who owned a computer. This study provides evidence that the Internet may be a viable means for reaching low income population.

The availability and utilization of information and communication technology for accessing health information by medical professionals in Kenya was assessed in Gatero (2011). Grounded theory approach was used as an analytical tool. The research was exploratory in nature and used Kenyatta National Hospital as a case study. The study revealed that medical professionals needed information continuously in the course of their clinical work. Clinical governance, care of patients and professional updating on the current medical practices were the main reasons for needing and seeking information. When the medical professionals needed clinical information, they turned

to colleagues. Textbooks and journals were also frequently used sources of information. However, there was a substantial preference for e-searching for information from the Internet and e-journals. The findings also revealed lack of library and information services, inadequate access and use of electronic information resources and inadequate ICT skills among the medical professionals.

Two representative surveys focusing on youth conducted in Kaiser Family Foundation (2011) and Pew (2000) arrived at different conclusions regarding the relative importance of health information compared to other types of information that young people sought online. The Pew report surveyed people between the ages of 12 and 17, while the Kaiser report surveyed “youth” between the ages of 15 and 24. The Pew Internet survey found that looking for health-related information ranked lowest compared to other topics among teenagers who are online. Looking for health information was reported by only 26 percent of teenagers (Lenhart, Rainie and Lewis, 2001). In contrast, the Kaiser Family Foundation survey found that as many as 75 percent have used the Internet at least once to find health information (Rideout, 2001). These discrepancies in findings are most likely a result of the two surveys dealing with different age populations, with younger teenagers seeking health information to a lesser extent than older youth. The Pew report also noted that health information seeking seemed to increase by age. Older girls and boys were the most likely to look for health, fitness, or dieting information (40 percent of girls and 26 percent of boys aged 15–17 reported that they had done so). In contrast, only 18 percent of the younger (aged 12–14) teens said they had looked for health information online. Moreover, a good proportion of these health-related searches are related to topics pertaining to sexual

health or drugs. With awakening sexuality and increasing autonomy, certain health-related issues become important, while traditional sources of information (parents and teachers) are often challenged and begin to lose authority in the eyes of teens (Lenhart, Rainie and Lewis, 2001).

College students' patterns of Internet usage for obtaining health-related information and services was investigated in Nsuangani and Pérez (2006). One hundred and thirty six (136) students from a university in California were involved in the study. They reported among other things that over fifty percent (50%) of the subjects in the study searched the Internet for medical information. The survey revealed that a relatively small number of participants had bought pharmaceutical products on the Internet, joined a health support group, or used e-mail to communicate with healthcare providers.

In Borzekowski and Rickert (2001), an assessment of adolescents' use of, and attitudes toward accessing health information on the Internet was done. The study was conducted among four hundred and twelve (412) suburban New York 10th graders of diverse socio-economic and ethnic groups. The assessment reported that half of the sampled population had used the Internet for health information access and the topics mostly searched for are sexually transmitted diseases; diet, fitness and exercise; and sexual behaviour. It also reported that the adolescents found the Internet to be of high value with no significant differences related to sex, ethnicity or mother's education. For eleven (11) separate health topics, girls preferred to have information on birth control, diet and nutrition, exercise, physical abuse, sexual abuse and dating violence. However, there were differences by ethnicity for alternative medicine, but no differences based on

mother's education for the value of having specific health information available on the Internet.

A nationwide telephone survey of 12,751 American adults to determine their Internet usage in 2000 was carried out by Fox, Rainie, Horrigan, Lenhart, Spooner, Burke, M., et al (2000). The study reported that 6,413 of the participants claimed to be Internet users and fifty-five percent (55%) of these users were using the Web to get health or medical information. Almost fifty percent (50%) of the respondents claimed that the information obtained influenced the way they exercised and ate; seventy percent (70%) reported that the health information accessed from the Web affected their decision about how to treat a condition or an illness. Fifty percent (50%) opined that the health information got on the Web prompted them to ask a doctor new questions or get a second opinion from another doctor while twenty-eight (28%) said that their decision about whether to visit a doctor or not was influenced by the health information they got.

In Georgia Tech (1999) as cited in Borzekowski and Rickert (2001), an online survey of over three thousand two hundred (3,200) Internet users was carried out by Georgia Tech Research Corporation to determine the percentage that used the Internet for health information. It was reported that eighty-two percent (82%) had used the Internet for obtaining health information. Of this percentage, five percent (5%) used it on daily basis, fifteen percent (15%) used it on a weekly basis, twenty-three (23%) on monthly basis and thirty-nine (39%) less than once in a month. They also concluded that women and older people were more likely to report the Internet as a source for health information.

2.5 Summary of Literature Review

In summary, the above literature indicates that a good number of studies have been carried out on people's fast food consumption and associated health risks (such as Arulogun and Owolabi, 2011; Bakare and Olumakaiye, 2016; Iniobong *et al*, 2017; Sholeye *et al*, 2018). However, it appeared that not much has been done locally on the use of online health resources (including as it relates to nutrition information) among people. Most of the literature found in this area (such as Nsuangani and Perez, 2006; Gatero, 2011; Kivuti-Bitok *et al*, 2012; Bryan et al., 2012) are foreign-based.

Again, there appeared to be dearth of studies based in Southeast Nigeria in the above areas as local studies found by the researcher were based in other geopolitical zones of the country. The foregoing, in the opinion of the researcher, constituted the knowledge gap which this study had attempted to contribute in filling. Besides, advertisements on instant noodles contain only the nutritional aspects of the products with some claims of nutritional contents. Hardly do these instant noodles products indicate areas of contraindications as a result of intake of these products. This is neglected area of dissemination of wellness messages that this study filled the gap.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter highlighted the research method used in generating the data for this study. The key components discussed include: the research design, sample and sampling procedures and data collection instrument. This was followed by details about the measurable variables and procedures during pretest and data collection.

3.1 Research Design

This study employed survey research method and focus group discussion (FGD). That is triangulation which refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings and arriving at a credible result for dealing with the research problem.

The choice of the survey method is to provide a quantitative means for measuring the variables tested in the study and this had been informed by the need to collect data from variety of undergraduates within the randomly selected federal universities in the five states within the southeast geopolitical zone of Nigeria and the need to examine many variables; which also entails the use of multivariate statistics.

A Focus Group Discussion (FGD) is a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest. The group of participants is guided by a moderator (or group facilitator) who introduces topics for discussion and helps the group to participate in a lively and natural discussion amongst them (Krueger, 1988).

The Focus Group Discussion (FGD) method uses its qualitative nature to provide insight into how the undergraduates in the selected Federal Universities react to the consumption of instant noodles as healthful or unhealthful and how many are exposed to wellness information on the internet in a group discussion using a guide. In this study FGD was included as an additional method to gather subjective information that are important to the understanding of youth exposure to Internet wellness information as it pertains to instant noodles consumption.

3.2 Area of Study

The area of the study is South-East Nigeria which is made up of five (5) states namely: (Abia, Anambra, Enugu, Ebonyi and Imo State). The region shares boundary with Benue and Kogi states from the north central end; Delta, Cross River and Rivers from the south-south end. The south eastern region has a total population of 31,371,941 and an average population density of 416 persons per square kilometer (FOS, 2010).

South-East Nigeria is a diverse area and lies within the rain forest belt of Nigeria, which is characterized by high temperatures and humidity, with a substantial amount of rainfall during the rainy period of the year. The most common soils are Ultisols, which are acidic, with PH ranging from 4.0 in the highest rainfall areas to around 5.5 further norths. Rural population densities in South East Nigeria are amongst the highest in Africa and in many areas pressure on land has led to shortening fallow periods and declining soil fertility (Enete, 2010).

Agriculture in the region is predominantly based on bush fallow rotation, with cassava, yam and rice as the main crops. Palm tree plantation is the major cash crop in the area and land holdings are small and often fragmented.

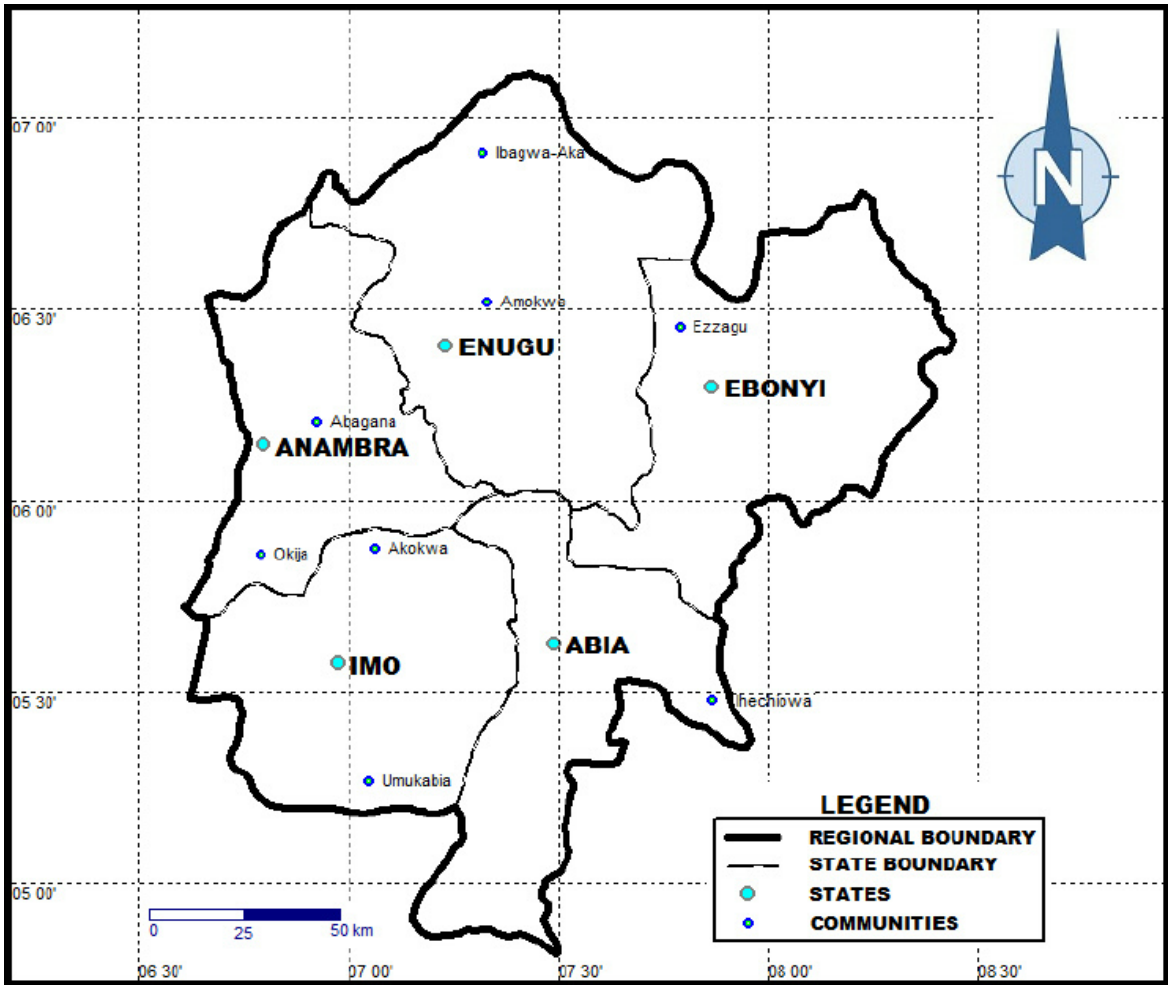


Figure 3.1: Map of South East Nigeria. Source: Google Image

Anambra State

The state was carved out of the old Ana mbra State in 1991 and has a land area of 4,844 square kilometers and population of 4,055,048; about 70 percent of the land is rich for agricultural production (NPC, 2006).

The state has 21 local government areas (LGAs) consisting of 177 autonomous communities. The climate can generally be described as tropical with two identifiable seasons (i.e. rainy and dry seasons). Farming is the predominant occupation of the rural people, the majority of whom are small holder subsistence farmers (Chima, 2015).

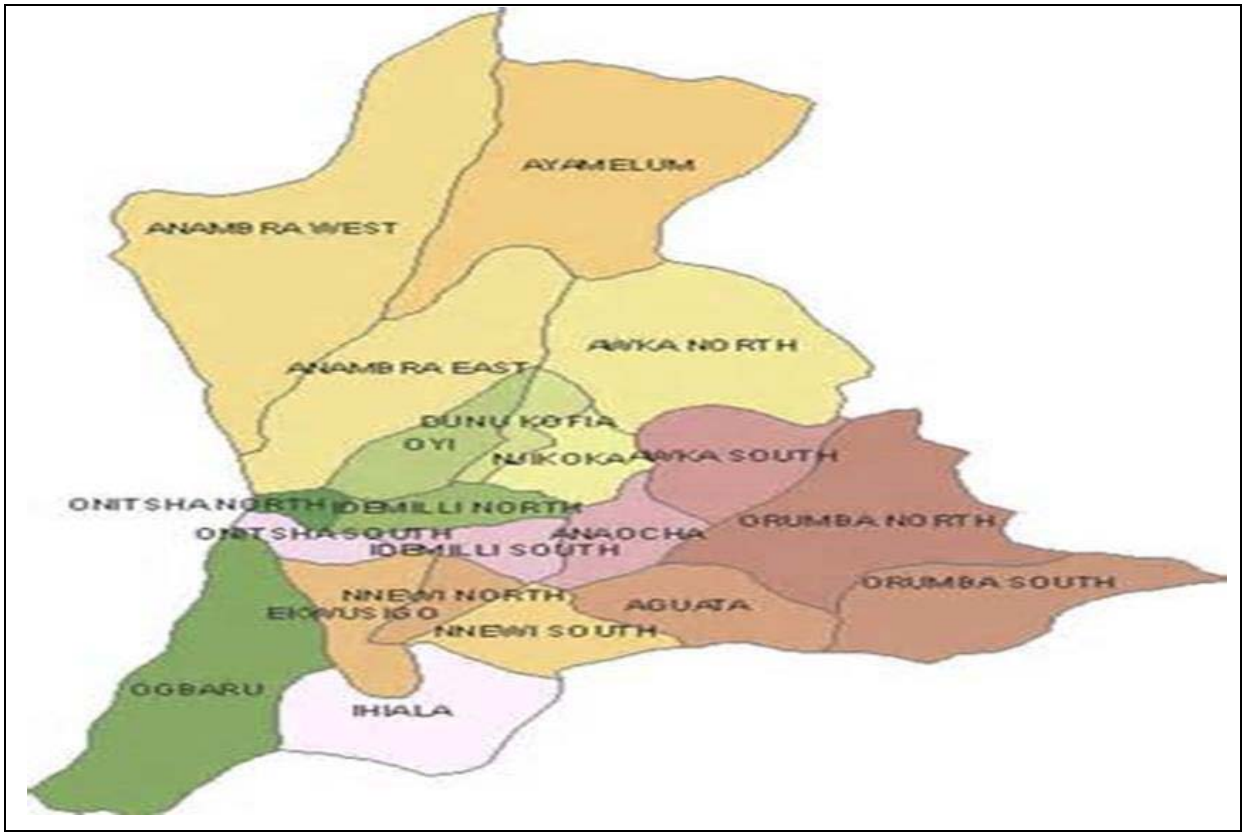


Figure 3.2: Map of Anambra State. Source: Google Image

Ebonyi State

Ebonyi state was created on 1st October, 1996 from Enugu and Abia states with a total landmass of 5,935 square kilometers of which 80 percent is rich in arable (Nwibo, 2012). The state has an estimated population of 1,739,136 people with a growth rate of 3.5 percent per annum (NPC, 2015). The population of the state is about 70 percent rural and the economy is primarily dependent on agriculture, which contributes about 90 percent of the GDP. The vegetation of the state is a mixture of savannah and semi-tropical forest with underlying parent limestone. The soil is textually clay loam, fairly

to poorly drained with gravely sub-soil in some locations, especially the upland adjacent to lowlands areas (Ekpe et. al., 2005).

The state is made up of 13 Local Government Areas (LGAs) which are divided into three senatorial/agricultural zones namely: Ebonyi North, Ebonyi Central and Ebonyi South zones.

Figure 3.3: Map of Ebonyi State. Source: Google Image

Enugu State

The state was carved out of the old Anambra State on 27th August, 1991 by the then military head of state, General Ibrahim Babangida. The state is noted for its coal

deposit, the largest in Africa. Other mineral resources found in the state include: Limestone, iron-ore and bauxite. In the 2006 population and housing census, the state had a total of 1,596,042 males and 1,671,795 females, which gives a total population of 3,267,837 people in the state.

The state has a land area of 7,161 square kilometers with an average population density of 460 persons per square kilometre. The average temperature in the state is cooler to mild (60^0F) in its cooler months and gets warmer to hot in its warmer months (upper 80^0F) and very good for outdoor activities with family and friends or just for personal leisure.

The state has good soil-land and climatic condition all year round, sitting at about 223 meters (732 ft) above sea level and the soil is well drained during its rainy seasons. Enugu state is predominantly rural and agrarian. The state has rich agricultural lands as a result of its location within the tropical rainforest and savannah belt. Over 70 percent of the population are farmers growing food crops such as rice, cassava, maize, yam, banana, plantain, etc., and a variety of fruits and vegetables. Cash crops grown include: oil palm, pineapple and cashew. They are also produced in large quantities.

(www.investmentsummit.en.gov.ng/agriculture/).

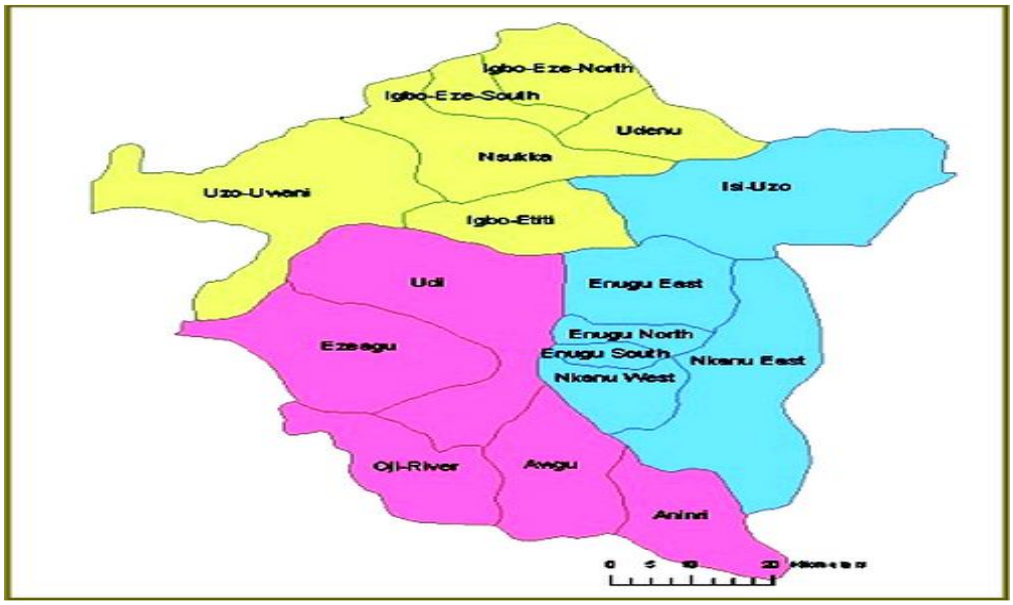


Figure 3.4: Map of Enugu State. Source: Google Image

Abia State

Abia State is one of the five states in the south-eastern part of Nigeria with Umuahia as its capital. The state, which occupies about 6,320 square kilometres, is bounded on the north and northeast by the states of Anambra, Enugu, and Ebonyi. To the west of Abia is Imo State, to the east and southeast are Cross River State and Akwa Ibom State, and to the south is Rivers State. The southern part of the State lies within the riverine part of Nigeria. It is low-lying tropical rain forest with some oil-palm brush; the southern portion gets heavy rainfall of about 2,400 millimeters (94 in) per year especially intense between the months of April through October. The rest of the State is moderately high plain and wooded savanna (Hoiberg, 2010). The most important rivers in Abia State are the Imo and Aba Rivers which flow into the Atlantic Ocean through Akwa Ibom State.

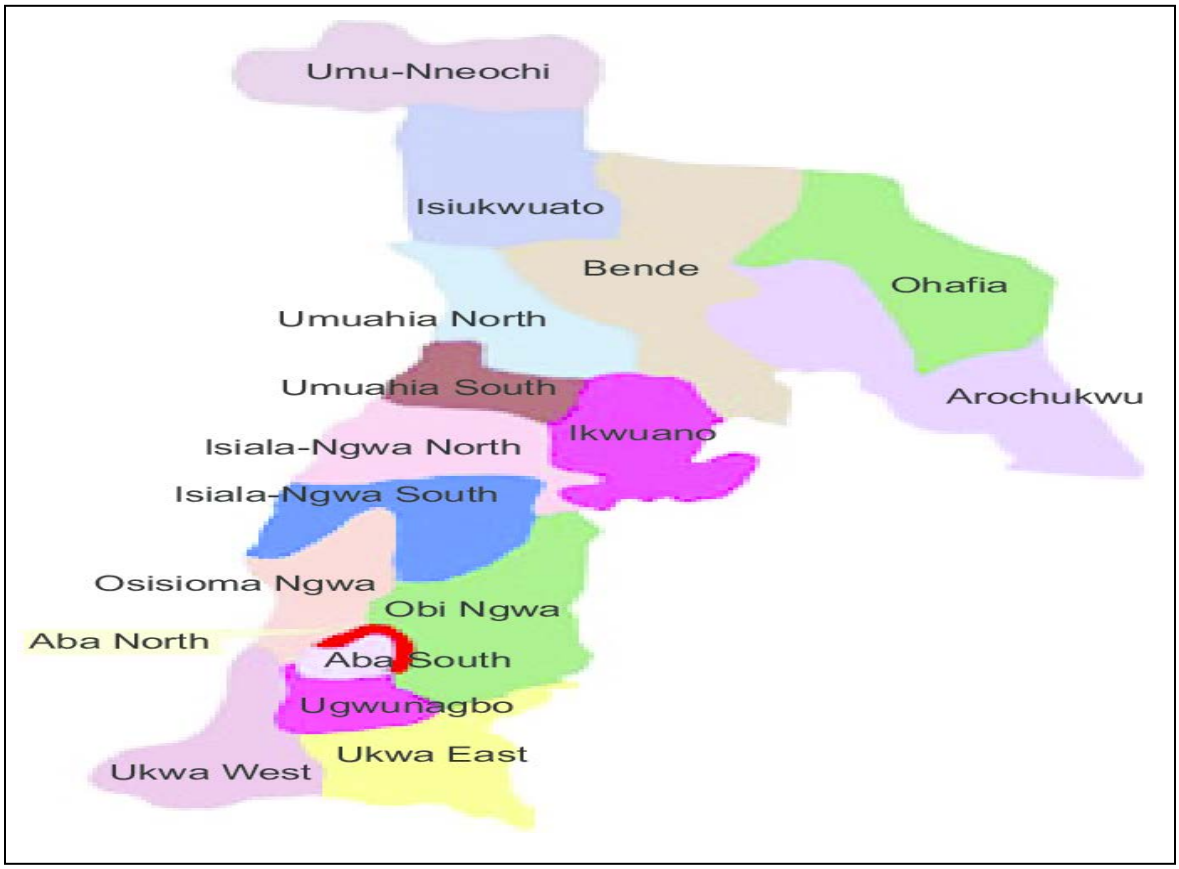


Figure 3.5: Map of Abia State. Source: Google Image

Imo State: is one of the 36 states of Nigeria and lies in the South East of Nigeria. Owerri is its capital and largest city. Its other major cities are Orlu and Okigwe. Located in the south-eastern region of Nigeria, it occupies the area between the lower River Niger and the upper and middle Imo River.

Imo State is bordered by Abia State on the East, River Niger and Delta State on the West, Anambra State on the North and Rivers State on the South. The state lies within latitudes 4°45'N and 7°15'N, and longitude 6°50'E and 7°25'E with an area of around 5,100 sq km (www.imogov.org).

The state has several natural resources including crude oil, natural gas, lead, calcium carbonate and zinc.

Profitable flora including iroko, mahogany, obeche, bamboo, rubber tree and oil palm. Additionally white clay, fine sand and limestone are found in the state.

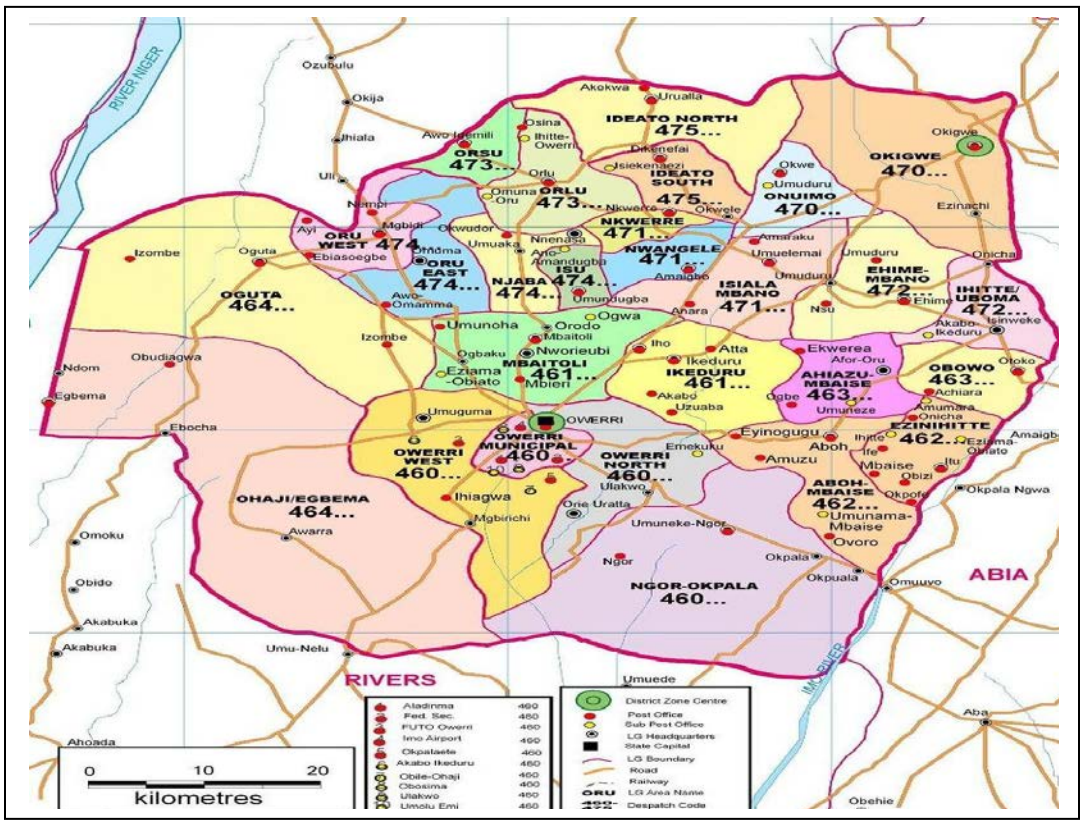


Figure 3.6: Map of Imo State. Source: Google Image

3.3 Study Population

The undergraduates in all the Federal Universities in southeast totaling, 154,760 made up the study population. These Federal Universities are: Federal University of Technology Owerri; University of Nigeria Nsukka; Michael Okpara University of Agriculture Umudike, Alex Ekwueme Federal University Ndufu-Alike Ikwo and Nnamdi Azikiwe University Awka. The physical setting of the study is made up of the five states housing the Federal Universities in South East zone of Nigeria. They are

Abia, Anambra, Ebonyi, Enugu and Imo. These Federal Universities, the population of their undergraduate students and the states they are found are shown in the table below:

S/NO	STATE	UNIVERSITY	POPULATION
1	Abia	Michael Okpara University of Agriculture, Umudike (MOUAU)	32,883
2	Imo	Federal University of Technology, Owerri (FUTO)	36,807
3	Enugu	University of Nigeria ,Nsukka, (UNN)	41,005
4	Anambra	Nnamdi Azikiwe University, Awka.	40,065
5.	Ebonyi	Federal University Ndufu-Alike Ikwo	4,000
TOTAL			**154,760**

Source: Registries of the institutions reflected as at 2015

3.4 Sampling and Sampling Procedure

Sample is a subset of the members of a population being studied. It is a group of items chosen from a population so that the important attributes of the population are represented in the group. Therefore a study sample was drawn from the population using the Cochran (1977) formula for determining sample size as follows:

$$n_o = \frac{z^2pq}{e^2}$$

Where;

n_o = sample size

z = z value corresponding to chosen confidence level

p = degree of variability and

q = 1 - p

e =desired level of precision

For a 95% confidence level with 50% (0.5) degree of variability and ± 5% precision, z=1.96, p =0.5, q =0.5, e =0.05

Therefore,

$$n = \frac{1.96 \times 154{,}760 \times .5 \times 1.5}{154{,}760 \times 0.0025 + 1.96 \times .5 \times 1.5}$$

$$n = \frac{227{,}497.2}{568.743}$$

$$n = 400$$

The study therefore used a sample size of 400 respondents for the study.

Multi-stage sampling procedure was equally used in this study. The first stage was the selection of all the Federal Universities in South East Nigeria. There are five Federal Universities in South East Nigeria and all the five Federal Universities were purposefully selected. The choice of Federal Universities in southeast was based on the following considerations:

The universities are all well established and have been in existence for over six years. The study of state and private Universities in the zone should be done by other researchers.

The second stage involved the selection of faculties from the five Federal Universities. Four faculties were selected from each University using simple random sampling making a total of twenty faculties for the five Federal Universities being studied. In selecting randomly, the researcher wrote out the names of all the faculties separately in sheet of papers wrapping them individually and then placed them all together in a bag. The researcher mixed the papers properly to ensure that no faculty can be identified by mere observation. The researcher then dipped hand in the bag and picked the papers one-by-one without replacement. Any faculty the researcher picked formed part of the study until the researcher picked the total number of faculties required for this study in all the selected universities.

Micheal Okpara University of Agriculture (MOUAU) - has ten colleges out of which four were selected as follows College of Engineering and Engineering Technology, College of Agricultural and Science Education, College of Applied Food

Science and Technology and College of Agricultural Business and Financial Management.

University of Nigeria, Nsukka (UNN) - has fourteen faculties out of which Physical Sciences, Engineering, Arts, and Social Sciences were selected.

Federal University of Technology, Owerri (FUTO) - has six schools out of which School of Management Technology, School of Environmental Technology, School of Agriculture and Agricultural Technology and School of Health were selected.

Nnamdi Azikiwe University, Awka - has fourteen faculties and Education, Management Sciences, Environmental Sciences and Bio Sciences were selected.

Alex Ekwueme Federal University, Ndufu Alike, Ikwo - has seven faculties out of which Basic Medical Sciences, Education, Humanities and Sciences were selected.

The third stage also involved the use of simple random sampling in the selection of three departments from each of the four faculties chosen. In selecting randomly, the researcher wrote out the names of all the departments from each selected faculties separately in sheet of papers wrapping them individually and then placed them all together in a bag. The researcher mixed the papers properly to ensure that no department can be identified by mere observation. The researcher then dipped hand in the bag and picked the papers one – by – one without replacement. Any department the researcher picked formed part of the study until the researcher picked three departments from each faculty, twelve departments from each Federal University making it a total of sixty departments for the five Federal University studied. This was done as follow:

Michael Okpara University of Agriculture, Umudike (MOUAU)

- **College of Engineering and Engineering Technology** - Civil Engineering, Mechanical Engineering and Chemical Engineering were selected.
- **College of Agriculture and Science Education** - Chemistry Education, Agricultural Science Education and Biology Education were selected.
- **College of Applied Food Sciences and Technology** - Nutrition and Dietetics, Hotel Management and Tourism and Food Science and Technology were selected.
- **College of Agricultural Business and Financial Management** - Marketing, Banking and Finance, and Accountancy were selected.

University of Nigeria Nsukka (UNN)

- **Faculty of Physical Science** - Statistics, Geology and Pure and Industrial Chemistry were selected.
- **Faculty of Engineering** - Electrical Engineering, Mechanical Engineering and Civil Engineering were selected.
- **Faculty of Arts** - Mass Communication, English and Literary Studies and Fine and Applied Arts were selected.
- **Faculty of Social Sciences** - Political Science, Economics and Psychology were selected.

Federal University of Technology Owerri (FUTO)

- **School of Management Technology** - Financial Management, Maritime Management and Information Management were selected.
- **School of Environmental Technology** - Urban and Regional planning, Building Technology and Environmental Technology were selected.
- **School of Agriculture and Agricultural Technology** - Soil Science, Fishery and Aqua cultural Technology and Agricultural Economics were selected.
- **School of Health Technology** - Public Health, Dental Technology and Optometry were selected.

Nnamdi Azikiwe University, Awka

- **Faculty of Education** - Human Kinetics and Health Education, Guidance and Counseling and Vocational Education were selected.
- **Faculty of Management Sciences** - Banking and Finance, Business Administration and Co-operative Economics and Management were selected.
- **Faculty of Environmental Sciences** - Building, Estate Management and Environmental Management were selected.
- **Faculty of Bio Sciences** - Zoology, Applied Biochemistry and Botany were selected.

Alex Ekwueme Federal University, Ndufu-Alike, Ikwo

Faculty of Basic Medical Sciences - Anatomy, Medical Microbiology and Physiology were selected.

Faculty of Education - Educational Foundations, Science Education and Vocational/Technical Education were selected.

Faculty of Humanities - Philosophy, Fine and applied arts/Music and History and Strategic Studies were selected.

Faculty of Science - Biology/Microbiology/Biotechnology, Chemistry/Biochemistry/Molecular Biology and Physics/Geology/Geophysics were selected.

The distribution of the questionnaire was done by proportionate sampling method to reflect the population size of each federal university so that university with higher population size were assigned more copies of questionnaire based on sample size multiplied by the population of the federal university divided by the total population of all the Federal University and the results are listed below:

Michael Okpara University of Agriculture -400*32,883/154,760 =85 respondents

Federal University of Technology, Owerri - 400* 36807/154,760 = 95 respondents

University of Nigeria, Nsukka - 400* 41,005/154,760 =106 respondents

Nnamdi Azikiwe University, Awka - 400* 40,065/154,760 = 104 respondents

AlexEkwuemeFederalUniversity,NdufuAlike-400*4000/154,760 = 10 respondents

TOTAL: **400** respondents

The sampling technique for the selection of the participants for the FGD was also multistage. A total of three FGD sessions were conducted. One FGD sessions was conducted in each of the three randomly selected Federal Universities (FUTO, UNN and NAU). Each FGD session consists of seven (7) discussants selected randomly from the departments in each institution.

3.5 Data Collection Instrument

The questionnaire was the research instrument used in gathering data for this study. The questionnaire was divided into two sections. The first section sought the respondents' demographic data which consisted of age, gender, marital status and study level. The second section was designed to gather data on the dependent variables and the hypothesis developed for the study. The questionnaire contained both closed- ended, open- ended and 5-step Lickert scale. The questionnaire was devoid of ambiguity in content. The study also employed Focus group discussion (FGD) for the qualitative approach; relevant questions on the subject were asked bearing in mind the research question. For Focus Group Discussion, the FGD Guide was used. The guide contained questions and probes meant to guide the discussion sessions bearing in mind the research questions.

3.6 Measurable Variables

The measurable variables for this research include the independent and dependent variables. The independent variables measured in the survey included the demographic variables such as the age, sex, marital status, and study level. Some dependent variables measured are:

Instant Noodles Consumption: This was measured by asking questions on the habit and frequency at which undergraduates eat instant noodles.

Internet Wellness Information: This was measured by asking questions to ascertain undergraduate exposure to the Internet for Wellness Information.

Dietary Change: This was measured by asking questions to ascertain if the diet of the undergraduates is affected by the wellness information they get from the internet about instant noodles consumption.

3.7 Pre-Test and Validation of Research Instrument

Validity is the ability of the instrument to measure what it is set out to measure. The questionnaire was subjected to face validity because the drafted questionnaire was vetted by the supervisor and other experts in Mass communication. Reliability of instrument is the consistency with which an instrument measured variables under study and it is reliable if it consistently yielded the same results when repeated measurements of a property are taken of the same entities under the same condition. Therefore to test for reliability, the instrument was subjected to test of consistency. The validation of the research instruments involved a small pilot study that was done in a week. Twenty respondents were used and the researcher found that the items in the instrument are best suited to address the measurable variables.

Below is the result of the reliability test

Reliability Test

Case Processing Summary

		N	%
Cases	Valid	20	100
	Total	20	100

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.809	35

From the above reliability result, it revealed that the instrument had a Cronbach's Alpha coefficient of 0.809 which implies that it is 80% reliable.

3.8 Data Collection Phase: Data were collected over a given period of one week with the help of four trained research assistants by administering a set of questionnaire to undergraduate students in the five federal universities in the southeast geographical zone of Nigeria.

3.9 Method of Data Analysis: Data analysis was both quantitative and qualitative. Descriptive statistics and thematic analysis were used for the quantitative and qualitative analysis respectively. The initial analysis involved obtaining the frequencies, percentages and other statistical measurements of central tendencies such as mean and standard deviation. Chi-square test of homogeneity and independence was used in testing some hypotheses.

CHAPTER FOUR

RESULTS AND DISCUSSIONS OF FINDINGS

This study investigated exposure to Internet wellness information on instant noodles consumption and dietary change among undergraduates in South East Nigeria. The data collected from the quantitative (Survey) and qualitative (Focus Group Discussion) were presented and analyzed in this section. Also, the findings emanating from the results are discussed as they provided answers to the proposed research questions in the study and reconcile them with relevant literature.

4.1 Data Presentation and Analysis (Survey)

A total of 400 copies of questionnaire were administered among the respondents in the five (5) selected Federal Universities in South-East, Nigeria. All the copies were duly filled and returned which indicates 100% return rate. The researcher and her assistants gave out the questionnaire and waited for the students to fill and return them immediately. Few students went home with it but the researchers collected their phone numbers and called them within the week to collect the questionnaire.

Table 4.1 Distribution of data according to return rate of copies of questionnaire

S/N	Universities	Copies returned	Percentage
1.	University of Nigeria, Nsukka	85	21%
2.	Federal University of Agriculture, Umudike	95	24%
3.	Nnamdi Azikiwe University, Awka	106	26.5%
4.	Federal University of Technology, Owerri	104	26%
5.	Alex Ekwueme Federal University Ndufu-	10	2.5%

Alike, Ikwo			
Total		**400**	**100**

Table 4.2: Distribution of responses showing the demographic data of respondents

S/N	**Variables**		**Frequency**	**Percentage**
1.	Age:	10-19 years	56	14
		20-29 years	220	55
		30-39 years	124	31
		Total	**400**	**100**
2.	Sex:	Male	154	38.5
		Female	246	61.5
		Total	**400**	**100**
3.	Religion	Christianity	**400**	**100**
4.	Study level	100 level	95	23.7
		200 level	97	24.3
		300 level	100	25.0
		400 level	108	27.0
	Total		**400**	**100**

The result in Table 4.2 shows the demographic data of respondents in the study. From the section on age of respondents, majority of the respondents 220 (55%) fall within the age range of 20-29 years. This is followed by those from 30-39 years with 124 (31%). At the bottom of that section of the table are respondents within the age range of 10-19 years recording 56 (representing 14%). From the distribution on the basis of age, it was found out that significant respondents are of age bracket of 20-29 years.

On the demographic distribution of respondents according to sex, the study found that there are more females 246 (61.5%) than males 154 (38.5%) from the result. Lastly, on the study level, respondents in "400 Level" ranked highest with 108 (27%). This was followed by those in 300 level with 100 (25.0%) and those in 200 levels recording 97 (24.3%). At the bottom of the section of the table are respondents in 100 level recording 95 (23.7%) as indicated in the result in Table 4.2 above. The implication for this study is that the respondents within the age range of 20 -29 years are majority.

Distribution of responses showing how exposed respondents are to Internet wellness information suggesting instant noodles consumption as unhealthy

Table 4.3: Distribution on the use of the Internet for information on instant noodles' awareness

Variable	**Frequency**	**Percentage (%)**
Yes	364	91%
No	36	9%
TOTAL	**400**	**100%**

Table 4.3 indicates that significant 364 (91%) respondents use the Internet for information on instant noodles awareness. The Table equally shows that 36 (9%) does not use the Internet for information on instant noodles consumption.

Table 4.4: Distribution of responses based on significant rate of Internet access to wellness awareness on instant noodles

Variable	Frequency	Percentage (%)
Strongly agree	346	86.4%
Agree	33	8.3%
Undecided	0	0%
Strongly disagree	15	3.8%
Disagree	6	1.5%
TOTAL	**400**	**100%**

The above shows the degree of Internet access to wellness awareness on instant noodles. Those who strongly agreed indicated a significant rate of 346 (86.4%) respondents. This result supports the finding of Norman and Skinner (2006) that due to the increasing influence of the Internet for information-seeking and health information dissemination, there is better awareness on instant noodles.

Table 4.5: Distribution of responses on the use of Internet as source of information for positive impacts on awareness of wellness of instant noodles.

Variable	Frequency	Percentage (%)
Strongly Agree	207	51.8
Agree	135	33.6
Undecided	6	1.5

Strongly Disagree	25	6.3
Disagree	27	6.8
TOTAL	**400**	**100**

Table 4.5 shows that there is significant positive impact of the use of Internet in creating awareness on instant noodles. The above finding was represented by a combined 342 (85.4%) of respondents that strongly agreed and agreed to the positive impact of the Internet medium.

Table 4.6: Distribution of responses on regular exposure to Internet wellness information on instant noodles.

Variable	Frequency	Percentage (%)
Strongly Agree	159	39.8
Agree	155	38.8
Undecided	42	10.5
Strongly Disagree	33	8.3
Disagree	11	2.7
TOTAL	**400**	**100**

Data above indicate that the respondents regularly expose themselves to Internet wellness information on instant noodles. This is shown in the 159 (39.8%) and 155 (38.8%) of those that strongly agreed and agreed respectively. There is also a reasonable 42 (10.5%) respondents who were undecided to the question on regularity of exposure to Internet wellness information on instant noodles.

Table 4.7: Distribution on exposure to Internet wellness information on instant noodles in creating awareness on positive benefits of instant noodles

Variable	Frequency	Percentage (%)
Strongly Agree	151	37.8
Agree	149	37.3
Undecided	7	1.8
Strongly Disagree	70	17.5
Disagree	23	5.7
TOTAL	**400**	**100**

Table above shows that there are positive benefits of instant noodles. This is confirmed by a combined score of 300 (75.1%) respondents that strongly agreed and agreed respectively that instant noodles have positive benefits. This finding collaborates with the finding of Onyema (2014) that all essential elements investigated in the noodles sample occurred within the threshold limit of healthy preparation.

Table 4.8: Distribution of responses showing respondents' perception on the risk factors of Instant Noodles consumption

S/N	Variables	SA	A	D	SD	U	Mean
1.	Eating instant noodles can kill the kidney faster	151	149	70	23	7	4.04
2	Instant noodles can be slow in digestion	182	158	48	11	1	4.27
3.	Instant noodles increases the rate of hypertension	130	129	101	34	6	3.86

4	Instant noodles can block the intestine after a long time	194	116	49	21	20	4.11
5.	Eating instant noodles can lead to excess weight gain	188	184	12	13	3	4.48
6.	Eating instant noodles can be linked to cancer	191	150	38	5	16	4.24

From the responses in Table 4.8 there is a preponderance of affirmative response by the respondents. Using mean scores of the items in Table 4.8, it indicates high significance on the following negatives effects of the consumption of instant noodles due to lack of wellness information. There is significance that lack of access to information on instant noodles in respects to the facts that (a) it can kill the kidney as shown by a combined responses of 300 (75.5%) respondents that strongly agreed and agreed respectively, (b) it slows digestion with a combined responses of 340 (85%), (c) instant noodles increase the rate of hypertension with a combined responses of 259 (64.8%), (d) it blocks the intestine after a long time with a combined strongly agree and agree responses of 310 (77.5%), (e) excess instant noodles can lead to excess weight loss with a combined strongly agree and agree responses of 372 (93%), and (f) eating instant noodles can be linked to cancer with a combined strongly agree and agree responses of 341 (85.5%).

Table 4.9: **Distribution of responses showing the rate of instant noodles consumption among respondents**

S/N	Variable	Yes		NO		I don't know	
		F	%	F	%	F	%
1.	I eat instant noodles	353	88	47	12	-	0
2	I eat instant noodles daily	253	63	125	31	22	6
3	I eat instant noodles once a week	276	69	119	30	5	1
4	I often eat instant noodles	303	76	87	22	10	2
5	I eat different kinds of noodles	307	77	89	22	4	1
6	I am an addicted eater of instant noodles	203	51	166	41	31	8

There is high rate of instant noodles consumption found among the respondents from the result in Table 4.9 above. This is affirmed by 353 (88%) of the respondent as against 47 (12%) of the respondent who say they don't eat instant noodles. On the frequency of consumption of instant noodles, the result revealed that 276 (69%) eat instant noodles once a week; 303 (76%) eat it often while 203 (51%) are addicted eaters of instant noodles.

On the variety of consumption of instant noodles, the study found that 307 (77%) of the respondents say they eat different kinds of instant noodles.

Conversely, 125 (31%) say they don't eat instant noodles every day; 119 (30%) don't eat it once a week while 87 (22%) don't eat it often. Also, 166 (41%) respondents say

they are not addicted eaters of instant noodles as 89 (22%) say they don't eat different kinds of instant noodles.

Table 4.10: Distribution of responses showing respondents' knowledgeable about instant noodles as unhealthy processed food

Variable	Frequency	Percentage (%)
Strongly Agree	176	44.0
Agree	144	36.0
Undecided	8	2.0
Strongly Disagree	48	12.0
Disagree	24	6.0
TOTAL	**400**	**100**

The above Table 4.10 shows significant responses that greater number of respondents has adequate knowledge about instant noodles. This is shown in a combined score of 320 (80%) respondents that strongly agreed and agreed to the above item. The implication is that there is adequate knowledge of instant noodles among the respondents.

Table 4.11: Distribution of responses on knowledge of wellness of instant noodles is beneficial to consumers of instant noodles

Variable	Frequency	Percentage (%)
Strongly Agree	200	50.0
Agree	124	31.0
Undecided	16	4.0
Strongly Disagree	40	10.0

Disagree	20	5.0
TOTAL	**400**	**100**

The above Table shows that most respondents agreed that knowledge of wellness of instant noodles is beneficial to consumers of instant noodles.

Table 4.12: **Distribution of responses on respondents' perception on the effects of unhealthy nature of processed food**

S/N	Variables	SA	A	D	SD	U	Mean
1.	Instant noodles contain much fiber	147	127	42	78	6	3.83
2.	Instant noodles' seasoning contains so much salt	188	124	37	44	7	4.10
3.	Instant noodles is high in carbohydrates	201	126	50	17	6	4.25
4	Instant noodles is a processed food that contains balance diet	72	74	124	100	30	3.15
5	Instant noodles can damage the kidney	163	147	41	35	14	4.03
6.	Instant noodles is not good for old people	225	125	24	13	13	4.34
7	Instant noodles contains too much fat and oil	240	120	31	9	-	4.48

The limit of real number was used as a basis to determine the cut-off point for each scale of measurement. Those responses that have mean scores within the range of the

limits set for each scale of measurement are named by those scales of measurement. Here is a run-down of the limits set for real numbers that fall within each scale of measurement.

- For "Strongly Agree" decisions = (5.00 – 4.45) = 5 point
- For "Agree" decision = (4.44 – 3.45) = 4 point
- For "Disagree" decision = (3.44 – 2.45) = 3 point
- For "Strongly Disagree" decision = (2.44 – 1.45) = 2 point
- For "Undecided" decision = (1.44 – 0.45) = 1 point

From the result in Table 4.12, the study found that respondents are more knowledgeable about the fact that "Instant noodles contains too much fat and oil" as affirmed by 360 (90%) of the respondents (i.e. adding SA+A). This explains why the response was ranked highest with mean score = 4.48 and standard deviation = 0.735; also the mean score falls within the range of (5.00-4.45) which is the limit of real number for "Strongly Agree".

There were five (5) other responses found to have mean scores within (4.44-3.45) which is the limit of real number for "Agree" decision, (i.e. 4.00). These responses include:-

- "Instant noodles contains too much fibre" (Mean = 3.83)
- "Instant noodles seasoning contains too much salt " (Mean = 4.10)
- "Instant noodles is high in carbohydrates" (Mean = 4.25)
- "Instant noodles can damage the kidney" (Mean = 4.03)
- "Instant noodles is not good for old people" (Mean = 4.34)

Lastly, the result revealed that respondents did not agree to the fact that "instant noodle is a processed food that contains balanced diet". This was refuted by 224 (56%) respondents (i.e. adding disagree and strongly disagree). This explains why it recorded a mean score of 3.15 which falls within the limit of real numbers for "Disagree" decision (i.e. 3.44-2.45).

On the general assessment of how knowledgeable the respondents are about instant noodles as unhealthy processed food, the study found their knowledge level to be put at 6 (on a scale of 1-7). This means that the respondents are 67% knowledgeable about instant noodles as unhealthy processed food. The areas which they fall short in knowledge about instant noodles as unhealthy processed food are:

- "Instant noodles contains too much fibre" (most of the respondents also affirmed this but studies in literature show that instant noodles are low in fibre
- "Instant noodles' seasoning contains too much salt" (most of the respondents also agree with this but studies show that its seasoning does not contain much salt.)

Distribution of respondents showing how exposure to Internet wellness information induces dietary behaviour change as regards instant noodles consumption

Table 4.13: Distribution of responses on non-preference of instant noodles due to unhealthy dietary behaviour

Variable	Frequency	Percentage (%)
Strongly Agree	128	32.0
Agree	132	33.0
Undecided	4	1.0

Strongly Disagree	104	26.0
Disagree	40	10.0
TOTAL	**400**	**100**

Table 4.13 above shows the rate of non-preference of instant noodles due to unhealthy dietary behaviours. The table shows significant score of a combined 65% of strongly agree and agree responses showing that most respondents do not consume instant noodles due to unhealthy dietary behaviours.

Table 4.14: Distribution of responses on respondents' preferences of instant noodles because of dietary behaviours

S/N	Variables	SA	A	D	SD	U	Mean
1	I don't eat instant noodles because it does not satisfy me	102	120	72	86	20	3.50
2	I eat instant noodles though I know of its harmful effects	185	137	42	29	7	4.16
3	I don't eat instant noodles because I think it is for children	102	103	132	56	7	3.59
4	Since I knew about the unhealthy dietary nature of instant noodles, I stopped eating it	104	133	91	54	18	3.63

Respondents' opinion on whether their dietary habit is influenced by Internet wellness information proved the above statement to be true. This is confirmed in the response:

"My dietary habit is not in any way influenced by any Internet wellness information with mean score = 2.87 which fall within the limit of real number for "Disagree" decision (i.e. 3.44-2.45) that is 3 points.

Lastly, the study found that some people don't eat instant noodles not for any information they received about its harmful effect but because they don't like eating it. This is affirmed by 247(62%) respondents (mean = 3.76). There is another group that believe it to be meant for children as affirmed by 205 (51%) respondents (mean = 3.59). Others (222 representing 56%) say they don't eat instant noodles because it does not satisfy them (mean = 3.50)

4.2 Test of Hypotheses

The statistical tool – Chi-square was used for test of hypotheses. Below is the formula for the test of hypotheses using Chi-square statistical tool.

The formula for Chi-square here is:

$$\sum = \frac{(oi - ei)^2}{ei}$$

Where $\sum$ is summation

oi – observed frequency

ei – expected frequency

Degree of freedom at 0.05 significance level

Hypothesis One

H_1: There is a significant rate of exposure to Internet wellness information among undergraduates in Southeast Nigeria

H_0: There is no significant rate of exposure to Internet wellness information among undergraduates in Southeast Nigeria

	2	**3**	**4**	**5**	**Total Oi**	**oi**	**oi – ei**	**$\underline{(oi-ei)}^2$**	**$\underline{(oi-ei)^2}$ Ei**
Strongly Agreed	246	207	159	151	763	191	572	327184	1713
Agreed	118	135	155	149	557	30	527	277729	9258
Strongly Disagreed	30	25	33	70	158	58	100	10000	172
Disagreed	6	27	11	23	67	40	27	729	18
Undecided	-	6	42	7	55	14	36	1296	93
Total	**400**	**400**	**400**	**400**	**1600**				**11,254**

Calculated value = 11,254

Level of significance = 0.05

Degree of freedom = (r – 1) (c -1) = (5 – 1) (5 – 1) = 4 x 4 = 16

Table value at 0.05 of 16 Degree of Freedom = 26.30

Decision Rule: Since the calculated table 11,254 is higher than the table value of 26.30, the null hypothesis is rejected. In this case, we accept the alternate hypothesis which states that there is a significant rate of exposure to Internet wellness information among undergraduates in Southeast Nigeria

Hypothesis Two

H_2: There is significant rate of instant noodles consumption among undergraduates in Southeast Nigeria.

H_0: There is no significant rate of instant noodles consumption among undergraduates in Southeast Nigeria.

	1	2	3	4	5	6	Total oi	ei	oi - ei	$(oi-ei)^2$	$\frac{(oi-ei)}{ei}$
Yes	353	253	276	303	307	203	1695	283	1412	1993744	7045
No	47	125	119	87	89	166	633	106	528	278784	2630
Don't know	0	22	5	10	4	31	72	12	60	3600	300
TOTAL	400	400	400	400		400	2400				9,975

Calculated value = 9,975

Level of significance = 0.05

Degree of freedom = (r – 1) (c -1) = (3 – 1) (6 – 1) = 2 x 5 = 10

Table value at 0.05 of 8 Degree of Freedom = 18.31

Decision Rule: Since the calculated table 9,975 is higher than the table value 18.31, the null hypothesis is rejected. In this case, we accepted the alternate hypothesis which states that there is significant rate of instant noodles consumption among undergraduates in Southeast Nigeria.

Hypothesis Three

H_3: There is significant level of knowledge about instant noodles being unhealthy processed food among undergraduates in Southeast Nigeria

H_0: There is no significant level of knowledge about instant noodles being unhealthy processed food among undergraduates in Southeast Nigeria

	1	**2**	**3**	**4**	**5**	**Total Oi**	**ei**	**oi – ei**	**$\underline{(oi-ei)}^2$**	**$\underline{(oi-ei)^2}$ Ei**
Strongly Agreed	147	188	201	72	163	771	154	617	380689	2472
Agreed	127	124	126	74	147	598	6	592	350464	58410
Strongly Disagreed	78	44	17	100	41	280	56	224	50176	896
Disagreed	42	37	50	124	35	288	58	230	52900	912
Undecided	6	7	6	30	14	63	13	50	2500	192
Total	**400**	**400**	**400**	**400**	**400**	**2000**				**62,882**

Calculated value = 62,882

Level of significance = 0.05

Degree of freedom = (r – 1) (c -1) = (5 – 1) (5 – 1) = 4 x 4 = 16

Table value at 0.05 of 16 Degree of Freedom = 26.30

Decision Rule: Since the calculated table 62,882 is higher than the table value of 26.30, the null hypothesis is rejected. In this case, we accept the alternate hypothesis which

states that there is significant level of knowledge about instant noodles being unhealthy processed food among undergraduates in Southeast Nigeria

Hypothesis Four

H_4: There is a significant relationship between Internet wellness information and dietary behaviour change in regards to instant noodles consumption among undergraduates in Southeast Nigeria.

H_0: There is no significant relationship between Internet wellness information and dietary behaviour change in regards to instant noodles consumption among undergraduates in Southeast Nigeria.

	1	**2**	**3**	**4**	**Total oi**	**ei**	**oi – ei**	**$\underline{(oi-ei)}^2$**	**$\underline{(oi-ei)^2}$ Ei**
Strongly Agreed	102	185	102	104	493	123	132	17424	142
Agreed	120	137	103	133	493	123	132	17424	142
Strongly Disagreed	72	42	56	54	224	56	168	28224	506
Disagreed	86	29	132	91	338	85	253	64009	753
Undecided	20	7	7	18	52	13	39	1521	117
Total	**400**	**400**	**400**	**400**	**1600**				**1660**

Calculated value = 1,660

Level of significance = 0.05

Degree of freedom = (r – 1) (c -1) = (5 – 1) (4 – 1) = 4 x 3 = 12

Table value at 0.05 of 16 Degree of Freedom = 21.03

Decision Rule: Since the calculated table 1,660 is higher than the table value of 21.03, the null hypothesis is rejected. In this case, we accept the alternate hypothesis which states that there is a significant relationship between Internet wellness information and dietary behaviour change in regards to instant noodles consumption among undergraduates in Southeast Nigeria.

4.3 Data Presentation and Analysis for Focus Group Discussion (FGD)

This study used the triangulation approach to gather qualitative data from respondents using the FGD to complement the quantitative data obtained from the Survey. The focus group discussion method was used to generate data among three groups of randomly selected undergraduates, which provided information on the consumption of instant noodles and how exposed undergraduates of Federal Universities in southeast, Nigeria are to Internet wellness information.

4.3.1 Study Location

The purposive sampling technique was used in selecting Federal Universities used in the focus group discussion. The rationale for the focus group discussion was to concentrate the investigation on selected students in each selected Federal University, in order to have in-depth interaction with the respondents. The interaction elicited qualitative vital information, necessary for authenticating result from data collected through survey research method. Three Federal Universities were randomly selected

from three purposively selected states, out of the five states in southeast Nigeria. The federal universities selected were:

- Federal University of Technology, Owerri (FUTO).
- University of Nigeria, Nsukka, (UNN).
- Nnamdi Azikiwe University, Awka. (NAU)

4.3.2 Specific Objectives and Research Questions

The specific objectives and corresponding research questions as well as the hypothesis were the same as those stated for the survey method earlier in chapter one of this study.

4.3.3 Discussants' Characteristics

The discussants consisted of male and female students randomly selected from the five Federal Universities in the Southeast. Each discussion group was made up of individual students because they are viewed as possessing important knowledge about particular experiences, needs, or a perspective that is hope to learn more about. The aim was to get more insight into how their use of Internet wellness information affected their dietary behaviour as regards the consumption of instant noodles.

4.3.4 Methodology

A total of three (3) focus group discussion sessions were conducted. One focus group discussion was conducted in each of the three randomly selected Federal Universities (FUTO, UNN and NAU). It means that a total of three focus group discussion sessions was used in the study. Each focus group discussion consists of seven (7) discussants, selected randomly from the departments in each institution.

The venue used for the discussion was within each school's premises. Each session commenced with a formal introduction of the research team, and the purpose of the study. The discussants introduced themselves and rapport was established. The supervisor monitored the sitting arrangement. She also monitored the proceedings and the note taker documented the discussions on paper and tape recorder. The discussion lasted for 90 minutes. A video recorder was used in documenting the entire discussion after which it was played and transcribe. The participants were appreciated and light refreshment was offered to show gratitude for their participation in the exercise.

Table 4.15: Categories emanating from responses in the Focus Group Discussion

S/N	Questions	Participants (in Groups)	Summary of Responses	Categories
1.	Do you eat Instant Noodles?	A B C	All the participants in each of the groups said YES	- Affirming to the question
2.	How often do you eat Instant Noodles?	A B C	50% said Occasionally 20% said almost everyday 30% said whenever there is no food at home	- Inconsistency in eating habit
3.	Do you get internet wellness information about harmful effects of Instant Noodles?	A B C	All said YES	- Affirming to the question

4.	Can you share with us the kinds of information you got?	A	- Instant noodles contains fat -Instant noodles does not contain fibre - Instant noodles is high on carbohydrates	Focusing on harmful effects
		B	- Instant noodles is rich in fat and oil - Instant noodles is low in protein, fibre and vitamins - Instant noodles can cause heart problem	Focusing on harmful effects
		C	- Instant noodles can lead to cancer - Instant noodles can affect the kidney - Instant noodles is poor in essential amino-acids	Focusing on harmful effects
5.	How did these	A	- I don’t eat it as usual	Changing

	information affect your consumption of Instant noodles?	B C	- I eat it with vegetables - I eat it once in a while - I don't eat it again - I eat it sparingly - I can't remember the last time I ate it - Sometimes I eat it not minding the information about it; there are still some good ones	behavior in eating habit
6.	What informed your dietary decisions on Instant Noodles?	A B C	- My doctor's advice - The information I got from the internet about its harmful effects - What people said about Instant noodles generally	Responding to information and advice

Table 4.16: Thematic Analysis of the Focus Group Discussion

S/N	Theme	Concepts
1.	Affirmativeness	Affirmation
2.	Redundancy	Change
3.	Bizarre	Negativity
4	Feedback	Reactions

The themes that emanated from the results in the Focus Group Discussion (FGD) showed a relationship between information and reaction to such information. The concept of "affirmation" was drawn from all the 'YES' responses given by participants in each of the groups in the FGD on whether or not they eat instant noodles. This concept gave rise to the theme of "Affirmativeness".

Similarly, due to the individual differences in human based on eating habit and frequency of eating instant noodles, the concept of "Inconsistency" was drawn. Also, the Internet wellness information about instant noodles adversely affected the eating habits of the participants. Hence, there was a general change in behaviour about how they consume instant noodles.

This gave rise to the concept of "change" which was combined with the concept of "inconsistency" to arrive at the theme of "Redundancy". What this means is that there is bound to be a form of redundancy in behaviour towards a particular subject when there is a general change in individual behaviour based on certain negative or unhealthy information received about that subject.

The above theme of “redundancy” is authenticated by the theme of “Bizarre” which come from the concept of “Negativity” drawn from the fact that individuals tend to focus or isolate unhealthy information about a given subject and use those information as the basis for their decision about the subject. From the myriad of information about instant noodles, the result showed that participants in the FGD made their decisions based on the information about the unhealthy nature of instant noodles as a processed food.

Lastly, the concept of “reaction” was drawn from the categories of responses that informed the basis for the decisions made by the participants on whether or not they will eat instant noodles. Some of the participants relied on the doctor’s advice; others focused on what people say about instant noodles while the remaining based their decisions on Internet wellness information they received about instant noodles as unhealthy processed food. This means that individual’s’ feedback to information or advice received comes in form of their behavioural response to either continue to consume the product or discontinue their consumption of the product.

4.4 Discussion of Findings

In this section, the findings emanating from the results of the survey and that of the Focus Group Discussion (FGD) were discussed as they provide answers to the research questions formulated in the study as well as their relationship with related findings in literature.

Research Question One: How exposed are undergraduates in Southeast Nigeria to Internet wellness information?

The answer to the above research question is that exposure to Internet wellness information is preconditioned on accessibility to the Internet. This study found that majority of the students (mean = 4.46) use the Internet as affirmed by 352 (out of 400 students) (88%) but their frequency of use varies according to need and frequency of accessibility to Internet-enabled devices. This finding agrees with the findings from a study carried out by Norzekowski and Rickert (2001) where they found out that 82% of the students used the Internet to obtain health related information.

Also, Gatero (2011) in a similar study found that medical professionals use the Internet for health related information based on the need they had for it. This study also found "high exposure" to Internet use for Internet wellness information among undergraduates as (94%) of them use the Internet more often. The frequency of use determines one's extent of exposure to Internet wellness information stipulating instant noodles consumption as unhealthy.

In specific terms, this study found exposure to such kind of Internet wellness Information more on the fact that eating instant noodles can lead to excess weight gain (mean = 4.48). This ranked highest among the nature of Internet wellness information specifying instant noodles consumption as unhealthy. The effect of such negative information about instant noodles were found to induce behaviour change as it affected the eating habit of student (especially females) who would not want excess weight gain.

Another reason for "high exposure" to internet wellness information as stated earlier was based on the findings that most of the undergraduates (342 representing 85.5%) use the Internet as a source of information for diet and healthy living. This is corroborated by the findings from a nationwide telephone survey of 12,751 American adults by

Burke (2000) where it was found that 55% use the Internet as a source of health or medical information and 50% of such users claim that the information they obtained influenced the way they exercised and ate while 70% say it affected their decision about how to treat a condition or an illness. This goes to show a relationship between level of access to Internet and extent of exposure to information from the Internet as well as how much effect such information has on the individuals.

Furthermore, this study also found that among the unhealthy information received via the Internet about instant noodles consumption includes:

- "Eating instant noodles can be linked to cancer" affirmed by 340 (85%) respondents.
- "Instant noodles can be slow in digestion" as affirmed by 340 (85%) respondents.
- "Eating instant noodles weakness the heart" as affirmed by 286 (72%) (i.e. adding SA+A see Table 4).

All these point to the fact stated earlier in this study that there is "high exposure" on Internet wellness information stipulating instant noodles consumption as unhealthy.

Research Question Two: What is the rate of instant noodles consumption among undergraduates in Southeast Nigeria?

The answers to the above research question found that 88% of undergraduates in South-East Nigeria consume instant noodles and about 63% eat it every day while 69% eat it once a week. The findings also reveal that 77% of undergraduates eat different kinds of instant noodles while about 51% are addicted eaters of instant noodles.

A study carried out by Borzekowski and Rickert (2001) agreed with the findings in this study. In their study, they found that 82% of respondents had access to the Internet and youths were found to be the majority in this group. They also found that 5% used it daily; 15% used it weekly; 23% used it monthly while 39% used it less than once in a month. This goes to show that respondents who consume information from the Internet were found to be more in monthly users.

The answers to the above research question showed results on how knowledgeable respondents are about instant noodles as unhealthy processed food. Much of what students know about instant noodles as unhealthy processed food was found to be in its contents that are harmful to the human body. Some of their knowledge was also found to be false because they did not agree with literature on what constitute unhealthiness in instant noodles as processed food. This was what informed the 67% knowledgeable rating given in the respondents on how knowledgeable they are about instant noodles as unhealthy processed food.

Also, the result from the FGD also underscores this rating as some of the respondents relied mainly on what people say about instant noodles which made some of them fall short in knowledge about instant noodles as unhealthy processed food. Another factor from the FGD that adversely affected students' poor knowledge about instant noodles as unhealthy processed food is the fact that some of them relied on what doctors say instead of consulting Nutritionist who would be in the best position to educate them on the dangers of each component of instant noodles.

More so, as they receive such information, the result showed that they acted based on how they perceived it. Poor knowledge can invariably produce poor perception which

can inform false behaviour change towards a given subject. Still on how knowledgeable the students are about instant noodles as unhealthy processed food, the findings from the FGD revealed that participants that relied on information received from the internet did not confirm the authenticity or reliability of such information. There is a general notion or believed held among students that anything you get from the internet is reliable not minding its source. This unfounded believe did not take into cognizance that there are no gate-keepers on the web, hence, all manner of ideas and information find their way into the internet some of which might be misleading to the user except when confirmed with an expert.

Research Question Four: Does exposure to Internet wellness information induce dietary behaviour change in regards to the consumption of instant noodles among these undergraduates in Southeast Nigeria?

The answers to the above research question dealt with how exposure to Internet wellness information can induce dietary behaviour change as regards to instant noodles consumption. The findings in this study show that negative Internet wellness information induced dietary behaviour change as regards instant noodles consumption among undergraduates in Southeast Nigeria. This statement is confirmed by the findings of this study where 237 (59%) respondents said they stopped eating instant noodles from the time they got information from the Internet about the unhealthy nature of its consumption.

Also, 257 (64%) respondents said they don’t eat instant noodles because of the unhealthy dietary information they got about it. The findings from the FGD also agree with the above findings from the survey. This is so because the concepts of

"Negativity", "change" and "inconsistency" drawn from the responses of the participants suggest the fact that there were some positive information about instant noodles in the Internet but the participants chose to focus on the negative ones and that led to the various levels of inconsistency found in their eating habit like:

- "Eating instant noodles with vegetables"
- "Eating instant noodles sparingly"
- "Eating instant noodles once in a while"

The response above contradicts the earlier response made by participants in the FGD where 50% said they eat instant noodles occasionally, 20% said they eat it every day and 30% said they eat it whenever there is no food at home. From these findings we can see that Internet wellness information had some level of influence on undergraduates dietary behaviour change as regards instant noodles consumption.

The themes resulting from the concepts stated earlier are: "Bizzare" and "Redundancy". What this implies is that when there is negative (bizarre) information about a given subject there is bound to be a "Redundant" behavioural response to such subject among a particular group of persons involved.

Conversely, this study also found that some undergraduates were not influenced by the Internet wellness information specifying instant noodles as unhealthy processed food. The findings revealed that 247(62%) said their decision not to eat instant noodles is not based on the Internet wellness information they got but that they personally don't like eating it; 222 (56%) said it is because instant noodles do not satisfy them; 322 (81%) said they are aware of it unhealthy nature as a processed food but still likes eating it; 204 (50%) said they don't eat it because they think it is meant for children while a

negligible few 125 (31%) said their dietary habit is not in any way influenced by any Internet wellness information. The findings above reveal the fact that there are other intervening factors that induce undergraduates' dietary behaviour change as regards instant noodles consumption apart from Internet wellness information. These factors are summed up as: "personal idiosyncrasies", "individual differences", "economic factor" and "psychological factors".

Burke (2000) in their study agrees with the finding that Internet wellness information induces dietary behaviour change towards a given subject. In their study they found that 55% respondents that claimed that information obtained via the Internet influenced the way they exercised and ate while 70% said that health information they got from the Internet affected their decision about how to treat a condition or an illness. To a large extent, it is evident from the foregoing that one's perception of the kind of Internet wellness information received determines how much influence such information will have on his/her dietary behaviour change especially as regards the consumption of processed food.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study investigates exposure to Internet wellness information on instant noodles consumption and dietary change among undergraduates in Southeast Nigeria as its focus. The study objectives include: to establish how exposed undergraduates in southeast Nigeria are to Internet wellness information; to study the rate of instant noodles consumption among the undergraduates in Southeast Nigeria; to examine how knowledgeable these undergraduates are about instant noodles as unhealthy processed food and to determine whether exposure to Internet wellness information, induce dietary behaviour change, in regards to the consumption of processed food, especially instant noodles among undergraduates in Southeast Nigeria.

On the rate of instant noodles consumption among undergraduates in southeast Nigeria, this study found that more females (61.5%) consume instant noodles out of the 88% undergraduates that consume the product and that the rate of consumption was found to be high among youths between the ages of 20-29 years who are singles (76%). The frequency of Instant noodles consumption were found to be 63% (everyday) and 69% (once a week) while 77% eat varieties of instant noodles leaving 51% as addicted eaters.

On how knowledgeable the students are about instant noodles being unhealthy, this study found their knowledge rating to be 67% based on their response to certain knowledge statements on instant noodles being unhealthy processed food. Also, their exposure to Internet wellness information specifying instant noodles consumption as

unhealthy showed a “high exposure” as 88% of undergraduates was found to be using the Internet for health information and 94% of them use it more often. Also, 85.5% use the Internet as their main source of information for diet and healthy living.

In specific terms, 85% of undergraduates that use the Internet found eating instant noodles to be linked to cancer; 85% found it to be slow in digestion while 72% found eating instant noodles to be responsible to weakness of the heart. The findings in this study revealed that negative Internet information induces dietary behaviour change to some extent as regards instant noodles consumption. This is because, the findings from both the survey and the FGD showed similar influence which negative Internet information about instant noodles had on the behaviour of its consumers. From the survey, 59% said they stopped eating instant noodles since they got such unhealthy information about it; 64% said they don’t eat it because of its unhealthy nature to their health.

Also, from the FGD, the findings revealed that most participants made their decisions about instant noodles based on the negative information they got about it. However, this study also found other intervening factors like: “personal idiosyncrasies”, “economic factor” and psychological factors” as responsible for dietary behaviour change as regards instant noodles consumption.

5.2 Conclusion

Based on the findings in this study, the following conclusions were drawn:-

(1) There is a strong correlation between Undergraduates (i.e. 20-29years) and high instant noodles consumption.

(2) Exposure to Internet wellness information is largely dependent on level of accessibility to Internet-enable devices and level of education of the user.

(3) Exposure to Internet wellness information does not translate automatically to gaining knowledge of instant noodles as unhealthy processed food.

(4) Frequency of exposure to Internet wellness information specifying instant noodles as unhealthy processed food can lead to increased knowledge of instant noodles as unhealthy processed food.

(5) Whenever an individual has access to a variety of health related Internet information, there is a likely tendency for such individual to focus more on the negative information about the subject, and make his/her decisions around them.

(6) Increased exposure to negative or unhealthy information about a given subject induces negative behaviour change toward such subject.

(7) People tend to believe negative information they receive about a given subject from others and make their decisions around them.

(8) Once there is negative information about a product via the Internet the chances of a continuous consumption of such product is low.

5.3 Recommendations

In the light of the conclusion drawn from the findings that emanated from this study, the following recommendations are made:

1. Manufacturers of processed food products should provide consumers with health information on how best to consume their product to achieve balanced diet.
2. Consumers should not just rely on any kind of Internet wellness information but should verify such from an expert in such field.
3. Authenticity of sources of Internet wellness information is vital before one can make decisions on such information.
4. It is risky to base one's decision about the consumption of processed food products on what people say about that product.
5. As part of its corporate social responsibility to its consumers, the media (both print and electronic) should from time to time sensitize consumers on the unhealthy nature of the consumption of processed food in this age of "fast food" syndrome.
6. There is a need for more studies on perceived usefulness and trustworthiness of the quality and quantity of health information that is accessible to the youth, in particular, who are early adopters of new things, including health information.

5.4 Suggestions for Future Research

i. Research on Internet wellness information on instant noodles consumption could be studied by looking at other variables such as whether age and occupation are key determinants of consumption pattern of instant noodles.

ii. There could be a replication of this study among other segments of respondents such as married women or adults who are engaged in others works other than undergraduates to consolidate the findings of this study. This will help to find out the rate of consumption of instant noodles between working adults and young people.

iii. There could also be a replication of this study among students in state and privately owned universities in other geopolitical zones.

5.5 Limitations of Study

There was dearth of literature which directly addressed Internet wellness information vis-à-vis instant noodles consumption. This led to the review of related literature.

Suspicion among the respondents in the intentions of the researcher was overcome by giving the respondents assurance of confidentiality of their responses.

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APPENDIX 1

QUESTIONNAIRE

Department of Mass Communication,
Nnamdi Azikiwe University,
Awka,
Anambra State.
26th June, 2017.

Dear Respondent,

I am a Ph.D student in the Department of Mass Communication, Nnamdi Azikiwe University Awka and currently carrying out a study on 'EXPOSURE TO INTERNET WELLNESS INFORMATION ON INSTANT NOODLES CONSUMPTION AND DIETARY CHANGE AMONG UNDERGRADUATES IN SOUTHEAST NIGERIA'. The purpose of the study is to establish whether exposure to Internet wellness information with regards to instant noodles consumption being unhealthful, prompts health action by way of dietary change among the undergraduates in Southeast Nigeria.

Kindly answer every question as accurately and objectively as possible to enable me obtain data for the study. Your participation is voluntary and anonymous. The study is strictly for academic purpose. Be assured that your confidentiality of information is guaranteed.

Yours faithfully,

Chukwuemeka, Gloria Nwakego

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INSTRUCTION: Read the following question carefully and tick (√) for the appropriate answer.

SECTION A: DEMOGRAPHICS

1. Age: 10-19 ( ) 20-29 ( ) 30-39 ( ) 40 and above ( )
2. Sex: Male ( ) Female ( )
3. Marital Status: Single ( ) Married ( )
4. Study Level: 100 level ( ) 200 level ( ) 300 level ( ) 400 level ( )

SECTION B:

5. Do you eat Instant Noodles? Yes ( ) No ( )
6. How often do you eat Instant noodles? Often ( ) Very Often ( ) Occasionally ( ) Always ( )
7. Do you know that instant noodles are unhealthy processed food? Yes ( ) No ( )

Using the following scales, kindly rate your responses to the following statements.

S/N	Statements	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided
9.	Instant noodles does not digest easily when eaten					
10.	Instant noodles contain much fibre					
11.	Instant noodles seasoning contains so much salt					

12.	Instant noodles is low in carbohydrates					
13.	Instant noodles is a processed food that contains balanced diet					
14.	Instant noodles can damage the kidney					
15.	Instant noodles is not good for old people					
16.	Instant noodles contains too much fat and oil					

17. Do you use the Internet? Yes ( ) No ( )

18. How often do you use the Internet? often ( ) Very often ( ) Occasionally ( ) Always ( )

19. Have you ever used the Internet to source for information about diet and healthy eating ? Yes ( ) No ( )

20. Do you know that eating instant noodles is unhealthy for your body? Yes ( ) No ( )

Using the following scale, Kindly rate your responses to the following statements.

S/N	Statement	To a very large	To a large	To some extent	Not at all

		extent	extent		
21.	Eating instant noodles can kill the kidney faster				
22.	Instant noodles increases the rate of hypertension				
23.	Instant noodles can be slow in digestion				
24.	Instant noodles can block the intestine after a long time				
25.	Eating instant noodles can lead to excess weight gain				
26.	Eating instant noodles can be linked to cancer				
27.	Eating instant noodles weakens the bone				
28.	Eating instant noodles weakens the heart				

S/N	Statement	Strongly	Agree	Strongly Disagree	Disagree	Undecided

		Agree				
29.	I don't eat instant noodles because of the unhealthy dietary information I have about it					
30.	I don't eat instant noodles not for any information I received about its harmful effect but just because I don't like eating it					
31.	I don't eat instant noodles because it does not satisfy me.					
32.	I eat instant noodles even though I know of its harmful effects					
33.	I don't eat instant noodles because I think it is for children					
34.	Since I knew about the unhealthy dietary nature of instant noodles I					

	stopped eating it					
35.	My dietary habit is not in any way influenced by any Internet wellness information					

APPENDIX 11

FGD SCREENER QUESTIONS / PRE SESSION QUESTIONNAIRE

1. Are you a student of this university?
2. What is your discipline?
3. What level of study are you in now?
4. Do you use the Internet?
5. Do you use the Internet to source for information about diet and healthy eating?
6. Do you eat instant noodles?
7. Do you know that instant noodles are Junk food?
8. Do you know that eating instant noodles is unhealthy?

B MODERATORS GUIDE

Segment one: 15-20 minutes

1. Introduce the dissertation title.
2. Explain the purpose of the study.
3. Build rapport. It can dramatically influence the willingness of participants to answer questions.
4. Set the tone so that participants become enthusiastic to discuss raised issues.

Segment Two: 45 minutes to 1 hour

1. Raise salient issues related to the theme and research objective in the study, which include.
   a. Student knowledge of instant noodles being unhealthful.
   b. Student exposure to Internet wellness information about instant noodles.
2. Ask follow up questions.
3. Make sure every participant is heard. Identify quiet participants and urge them to express their view.

Segment Three: 15-20 minutes

1. Summarize the views of the group.
2. Listen to comments and reactions.
3. Appreciate participants for their time and contributions
4. Offer light refreshment as a way of showing gratitude
5. Be attentive to the informal views expressed by the participants on the issue during the refreshment.

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

`

Location: School Premises

Date: March 5, 2018

State:

Team Members:

Moderator: Chukwuemeka Gloria

Note Recorder:

Video Recorder:

No of Discussants 7(5girls and 2boys)

Starts: 12noon

End: 12.55

Characteristics of Discussants

No	Age	Sex	Study Level	Religion
1	23	F	300	Christian
2	24	F	300	Christian
3	23	F	200	Christian
4	27	M	400	Christian
5	19	M	100	Christian
6	24	F	400	Christian
7	22	M	200	Christian

Use the Screener's question /Pre session questionnaire to determine if the discussants conform to the criteria of inclusion in the group. If any does not qualify to be among the discussants, politely ask him/her to leave, explain reason why he or she is not qualified to participate and that it does not exclude their participation in other study.

My name is ----------, and my colleagues are ---------- ---------- and----------.We are from the Department of Mass Communication, Nnamdi Azikiwe University, Awka. We are carrying out a research study on 'Exposure to Internet Wellness Information on Instant Noodles Consumption and Dietary Change among undergraduates in Southeast Nigeria. We are

going to ask you questions relating to your exposure to wellness information on the Internet, consumption of instant noodles, and if the information affect your change of diet. Your response to the question will help us to ascertain if your exposure to Internet wellness information on Instant noodles affect your dietary change. Your utmost confidentiality is assured and data collected from this exercise is purely for academic purposes.

Conduct of Discussion:

I want to encourage everyone to participate in the discussion. There are no wrong and right answers and everyone should please bring up all idea that they think or know in the way that they perceive it. We will contribute one by one to each discussion issue. One person will begin and others take turn to contribute. Thank you.

1. Are you exposed to wellness information on the Internet?
   Probe for:
   - The use of the Internet to source for information.
   - The frequency in the use of the Internet to source for health information.
   - Do they use the Internet to source for information on dieting.
2. How often do you eat instant noodles
   Probe for:
   - Daily consumption.
   - Forth nightly consumption.
   - Weekly Consumption.
3. Do you know that instant noodles are unhealthy processed food?
   Probe for:
   - Their knowledge of instant noodles being a junk.
   - Their knowledge of how unhealthful instant noodles are.
   - The health implication of regular consumption of instant noodles.
4. Does your exposure to Internet wellness information induce your dietary behaviour change in regards to the consumption of processed food?

Probe for

- The effect of wellness information they are exposed to on their eating habits.
- The influence of the internet wellness information they are exposed to on their diet.
- How often they eat instant noodles and other processed food after their exposure to wellness information on the internet.

5. Did you know that instant noodles do more harm than good?

Probe for

- Instant noodles can damage the kidney.
- Increased risk for metabolic syndrome.
- Wheat flour used in making instant noodles is low in fibre and protein content.

6. Did you know that instant noodles contain too many calories and too little nutrition?

   |Probe for

   - Weight problem.
   - Healthy problems like insulin resistance, high blood pressure, high cholesterol. etc

7. Did you know that instant noodles destroy digestive system?

   Probe for

   - Abdominal pains after eating noodles.
   - Bloating and heavy feeling after eating noodles.
   - Diarrhea and stomach problem after eating noodles.

8. Did you know that Monosodium Glutamate that make noodles to taste delicious is dangerous?

   Probe for

   - It can cause brain damage.
   - It can cause chest pain.
   - It can cause kidney disease and other illness.

9. Could you explain the role that the use of health websites and social networking sites play in your health information searching?

   Probe for

   - Doubting the credibility of the information on the internet
   - Preferring human source like family and friends
   - Comparing it with medical reports

10. Do you examine the criteria used in evaluating the health information before consuming it?

    Probe for

    - Topic coverage
    - Readability
    - accuracy

APPENDIX IV: FOCUS GROUP DISCUSSION REPORT

`

Location: School Premises

Date: March 5, 2018

State: Enugu

Team Members:

Moderator: Chukwuemeka Gloria

Note Taker: Shalom Felix

Video Recorder:

No of Discussants 7 (5girls and 2boys)

Starts: 12noon

End: 12.55

Characteristics of Discussants

No	Age	Sex	Study Level	Religion
1	23	F	300	Christian
2	24	F	300	Christian
3	23	F	200	Christian
4	27	M	400	Christian
5	19	M	100	Christian
6	24	F	400	Christian
7	22	M	200	Christian

Moderator – Good afternoon students

Discussants – Good afternoon Aunty (chorus)

Moderator –I welcome you all to today's discussions, I appreciate you for honouring my invitation, I want to ask you questions relating to your exposure to Internet wellness information, consumption of instant noodles and dietary change. Your responses to the questions will help me to understand if your exposure to wellness information on the

Internet concerning instant noodles consumption affects your dietary change. Your utmost confidentiality is assured and you are also assured that data collected from this exercise will be used purely for academic purposes. My first question is;

Moderator –Do you use the Internet?

Discussants – Yes (chorus)

Moderator – So everybody here use the Internet? **D** – Yes of course, we are living in digital age. I don't think there is any undergraduate in this country that do not use the Internet for one thing or the other.

Moderator – How often do you use the Internet?

Discussants – I use the Internet every day. **D** – I browse anytime I am less busy. **D** – I browse every morning after my morning prayers for at least one hour. . **D** – I read information online anytime I am free. . **D** – Thank God for smart phones, I am always online doing one thing or the other, Even when someone is talking I can be listening and browsing at the same time.

Moderator – What do you use the Internet for?

Discussants – I use the Internet for social media, search engines and online business. **M** – Is that all? What about health information? How many of you use health websites to get health information from the net. **D**– Yes I often use health websites to get health information from the Internet. **D** – Yes I also read about health information on the net at my leisure time. **M** – So everybody here must have read about one health information or the other from the Internet. **D** – Yes (chorus).

Moderator – What type of health information do you get from the Internet?

Discussants – Life- style choices like smoking, illegal drug use and alcohol. **D** – I enjoy information on sexual health, such as contraceptive, sexually transmitted diseases and dating violence. **D** - I love reading about mental health, cancer, and diabetes. **D** – I prefer latest information on fitness, exercise, diet, nutrition and healthy living.

Moderator – How many of you have ever eaten instant noodles as an undergraduate?

Discussants – I have. **D-** I have too, **M-** Is there anybody in this group that has never consumed instant noodles since he or she became an undergraduate in this university.

Discussants – No (chorus) **D** – I have not, I do not like instant noodles because it looks like worm after cooking it.

Moderator – Have any of you ever come across the health implication of instant noodles consumption on the Internet?

Discussants – Yes of course (chorus) **D** - personally, I do not believe that all those information are true. **D-** They are at least 90% true and 10% false. **D** – Anyway, I scan through those information and ignore some of them.

Moderator – Ok, can you tell this group the information on instant noodles consumption you came across on the Internet?

Discussants– The shocking information I saw on the internet recently about instant noodles is that it contain some contents that triggers cancer, weakens the immune system, damages the kidney and liver. **D-** I read that the content of the little sachet inside every packet of instant noodles that makes it to taste delicious can cause chest pain, brain damage and headache and kidney disease.

Moderator – Do you have other information?

Discussants – Yes I read on the net that instant noodles contain lots of sodium that could stimulate increased blood pressure, fluid retention in the hands and feet and kidney damage. **D**-There is this experience I was having before I eventually come across it on the internet, whenever I eat instant noodles I will have abdominal pains, constipation and stomach problem.. **D-** I also read that regular intake of instant noodles add weight drastically and reduces body metabolism.

Moderator – Almost all of you have read about an information or the other concerning the health implication of the consumption of instant noodles, I want to know if the

wellness information you got from the Internet affect your dietary behaviour change in regard to instant noodles consumption. That is, what is your eating habit like concerning processed food especially instant noodles since you started reading about wellness information on the Internet.

Discussants – I was an addict consumer of instant noodles before now, I like indomie to the extent that I buy it in cartons and I eat it every day with or without, since I started reading about wellness information I take it once in awhile with plenty vegetables. **D-**, I eat instant noodles when I do not have good food or when I am tired to cook but since I saw its health implication I stopped eating it, I will rather eat fruits. **D-** Instant noodles are not my favourite food because it looks like worm after cooking it, before I saw the health implication on the Internet. **D-** I cannot do without instant noodles, I eat it even though I know its harmful effects, i love the taste. **D-** I stopped buying instant noodles since I started reading about wellness information on the Internet.

Moderator: Apart from the Internet, have you ever heard from any other source that regular consumption of instant noodles is not healthy?

Discussants: Yes, I heard from nutritionist that it is not healthy to take instant noodles. **D-** The last thing my Mum will do is to cook noodles for us. She said it is unhealthful. **D-** Our family doctor discouraged us from taking fast food and that noodles is a junk. **D-** There is this talk show on the television I watched, they were discussing about the type of food that we should take to diet and not to die. They condemned all junk food and carbonated drink as unhealthy.

Moderator: You see, research from every area has shown that instant noodles consumption is not healthful. I encourage all of you to consider dietary change to avoid the future health consequence of instant noodles consumption. At this point we have come to the end of our discussion. Again, I thank all of you who were able to leave what you are doing to participate in this session. May the lord God lead you safely back home, **Discussants:** Amen (Chorus).

APPENDIX V: ONE OF THE FOCUS GROUP DISCUSSION SESSIONS