FACTORS INFLUENCING BREAKFAST INTAKE AMONG SECONDARY SCHOOL STUDENTS IN IBADAN NORTH-EAST LOCAL GOVERNMENT AREA, NIGERIA

BY

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DEDICATION

This work is dedicated to THE ALL SUFFICIENT GOD

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ABSTRACT

Breakfast is the first meal of the day. It has been shown to have effects on diet, health and cognition. However, despite its importance, breakfast consumption has been observed to be on a decline in recent times. Globally, research on Intake of Breakfast (IOB) has mainly been carried out among primary school pupils and undergraduates, but not much has been done among secondary school students. This study was aimed at assessing the knowledge, attitude, perception, practice and other factors influencing the IOB among secondary school students in Ibadan North East Area, Nigeria.

This is descriptive cross sectional study involving a four stage sampling technique in selecting 348 students from six schools (4public and 2 private) based on proportionate allocation from schools, classes and aims. A pre tested interviewer administered questionnaire was used to elicit information on socio-demographic characteristics, knowledge, attitude, perception, practice and other factors influencing the IOB among students. Students' knowledge and attitude were measured using 10-point scale each, while 12- point and 18 point scales were used to measure practice and perception respectively. Scores of <8 and ≥8 were classified poor and good knowledge respectively. Scores of <8and <9 were classified as negative scores for attitude and perception respectively. Scores ≥12 were classified as good practice. Six Focus Group Discussions (FGDs) were conducted among the students, one in each school. Quantitative data were analysed using descriptive statistics, Chi square and logistic regression at 5% significance level while the FDGs were analysed using thematic approach.

Respondents' age was 14.1±2.0 years; 49.4% were males, 33.3% were from private schools and 42.0% were in junior secondary classes. Many respondents (49.1%) had mothers with tertiary education while 52.8%bhad fathers who had tertiary education. The knowledge score was 7.6±2.3. Majority of the respondents (66.7%) had good knowledge towards the importance of breakfast. About 89.0% had positive attitude towards IOB and 54.9% had positive perception towards breakfast. Over half (58.6%) of respondents had good time of consuming breakfast between the hours of 6:00a.m and 9:00a.m. Majority (87.4%) ate their breakfast on the day the

research was conducted and majority of the foods consumed were made from carbohydrates. The respondents who had positive attitude, 53.9% were males and 46.1% were females. Respondents whose mothers had no formal education were more likely to have poor knowledge towards the importance of breakfast than respondents whose mothers had no formal education (OR: 6.03, CI: 1.12-32.38). Other reasons that promoted breakfast include availability of food at home (89.9%), mothers having time to prepare breakfast (86.2%) and parents' financial buoyancy (79.2%). The FDGs revealed that not eating breakfast may make one weak, leading to lack of concentration in class, and later to illnesses.

Findings from this study documented that the students had good knowledge and positive attitude towards breakfast consumption which influenced their practice among secondary school students. There is need for awareness through public enlightenment programs on the sustainability of breakfast consumption among the students.

Keyword: Breakfast intake, Food availability, Secondary school students

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CERTIFICATION

I certify that this work was carried out by ADEDEJI, Ifeoluwa Abisade in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Dietary patterns established during childhood and adolescence often persist into adulthood, and therefore have implications for the risk of developing chronic diseases, not only in the near term but also in the future (Mikkila, Rasanen, Raitakari, Pietinen, and Viikari, 2005; Ebbeling, Pawlak and Ludwig, 2002; Baker, Olsen and Sorensen, 2007).

Breakfast is considered the most important meal of the day (Marika, 2003); it is described as the first meal of the day that breaks the fast that had been on for over twelve to fourteen hours (Wayon, Haines and Crawley, 1997). It has been documented that breakfast play an important role in the ability of student to assimilate properly during classes (Obanya, 2001; Toyobo, Owoycle, and Jimoh 2012). Without a breakfast meal there is the possibility of low blood glucose levels (hypoglycaemia) and low metabolic rate, irritability and fatigue (Marika, 2003). The time between the evening meal and breakfast the next morning is usually the longest period without uptake of energy and nutrients. Extending this fasting episode by skipping breakfast may result in metabolic changes that interfere with aspects of cognitive functioning and school performance. Missing breakfast may impair the availability of energy (glucose) or certain nutrients necessary for the synthesis of neurotransmitters, which in turn are necessary for correct functioning of the central nervous system (Dye and Blundell 2002; Benton, Ruffin, Lassel, Nabb, Messaoudi, and Vinoy, 2003). Children who eat breakfast have better overall diet quality, as assessed by the United State Department of Agriculture's (USDA 2008); furthermore, the quality of the breakfast is important as the nutritional status of a child can be affected as well as the physical and mental growth, health and general wellbeing of the child (Onyechi and Ugwunnadi, 2009).

Children who habitually consume breakfast are more likely to have favourable nutrient intake of dietary fiber, total carbohydrate and lower total fat and cholesterol (Deshmukh-Taskar, Nicklas, O'Neil, Keast, Radcliff and Cho, 2010). Breakfast also makes a large contribution to daily micronutrient intake (Balvin, Treviño, Echon, Garcia-Dominic, and Dimarco, 2013).Consuming breakfast can also contribute to maintaining a body mass index (BMI) within the normal range.

According to some researchers, children and adolescents who habitually consume breakfast [including ready-to-eat-cereal (RTEC)] have reduced likelihood of being overweight (Szajewska and Ruszczynski, 2010; de laHunty 2007; Gibson and Ashwell, 2013). Breakfast consumption is also associated with other healthy lifestyle factors. Children who do not consume breakfast are more likely to be less physically active and have a lower cardio respiratory fitness level (Sandercock, Voss, and Dye, 2010). Furthermore, breakfast has been shown to have positive effects on diet, health, and cognition (Nicklas, Reger, Myers, and O'Neil, 2000; Pollitt and Mathews, 1998). However, observational studies have shown that children and adolescents skip breakfast more often than any other meal (Rampersaud, Pereira, Girard, Adams, and Metzl, 2005).

Children who eat breakfast have a healthier overall diet compared with children who do not eat breakfast (Basiotis, 1999; Dwyer, 1998). Whether it is at home or at school, children who eat breakfast have higher intakes of vitamins and minerals and a lower percentage of calories from fat in their diet compared to children who do not eat breakfast (Basiotis, 1999). Children that ate breakfast had a slightly faster heart-rate and fasting children had great heart-rate variability, concluding that extended overnight fasting increased parasympathetic activity that attenuated expected increases in cardiovascular output (Pivik, Dykman, Tennal, and Gu. 2006).

School children who skip breakfast are more likely to have difficulty concentrating by mid-morning and to experience a decrease in intellectual performance (Keski-Rahkonen, Kaprio, Rissanen, Virkkunen and Rose 2003; Nicklas, O'Neil and Myers 2004.). Also, they may consume snacks that are high in fat, salt and sugar at other times of the day (Resnicow, 1991) to increase their total daily energy intake which predisposes them to obesity.

1.2 Statement of problem

In Nigeria, Olusanya (2010) documented that 10.3% of children skip breakfast in public schools in a rural community in Ogun state, 2.2% among primary school children in Eastern Urban centre (Ndukwu, 2014). Ndukwu (2014) further stated out that the prevalence of skipped breakfast obtained in the study that was carried among the primary school children is also much lower than those obtained from studies in the developed countries. Data obtained from 4,377 children in the Netherlands revealed a 5% prevalence of skipped breakfasts in primary school

children and 13% prevalence in secondary school children (Brugman, Meulmeester, Spee-van Der, Verloove-Vanhorick, 2008). An Australian study also reported that 15% of adolescent and nearly quarter of Australian adults' regularly skipped breakfast (Williams 2005); likewise, the prevalence of breakfast skippers from the United States and Europe (rates: 10%–30%) (Rampersaud et al., 2005; Siega-Riz, Popkin. and Carson 1998). Specifically, Siega-Riz, Popkin and Carson (1998) also observed that, from 1965 to 1991, breakfast consumption declined among preschoolers, 8 to 10 year old children, and adolescents by 5%, 9%, and 13-20%, respectively.

Skipping breakfast is reported to be a risk factor for weight gain (Health council of the Netherlands, 2002; Berkey, Rockett, Gillman, Field and Colditz, 2003; Cho, Dietrich, Brown, Clard and Block, 2003; Keski-Rahkonen et al., 2003; Sjoberg, Hallberg, Hoglund and Hulthen, 2003). On the other hand, breakfast taking has also been found to be a contributing factor in maintaining weight loss (Wyatt, Grunwald, Mosca, Klem, Wing and Hill, 2002). In Saudi Arabia, Abalkhail and Shawky (2002) reported that school children who skipped breakfasts have a greater likelihood of iron deficiency anemia, as well as poorer school performance. Furthermore, studies carried out among the adolescents found that that more days of skipped breakfasts predicted increased body mass index BMI from adolescence to adulthood (Niemeier, Raynor, Lloyd-Richardson, Rogers, and Wing,2006; Magnusso, Hulthen and Kjellgren 2005). Also, Dubois, Girard and Potvin, (2006), in Quebec did a population-based study of 1549 children (age 44-56 months) and found that about 10% of the children did not eat any breakfast and these children had double the probability of being overweight.

According to some researchers, skipping breakfast is linked to bad health, that people who miss breakfast tend to smoke more, drink more alcohol, and take less exercise than those who make time for breakfast; furthermore, a study by Chen, Sekine, Hamanishi, Wang, Gaina, Yamagami and Kagamimori, (2005) in Japan also showed that school children with "undesirable lifestyles" such as skipping breakfast, less participation in physical activity, longer television viewing, and later bedtimes were more likely to have poorer quality of life. Missing breakfast may also have long term negative effects such as depressive symptoms, stress, weakened immune system and chronic diseases (Timlin and Pereira 2007, Yang, Wang, Heish and Chen 2006). Abu, (2002) reported that people who skipped breakfasts had a significantly higher incidence of duodenal

ulcer disease. Skipping breakfast is more prevalent among female students, children from lower socioeconomic backgrounds, and older children and adolescents. (Rampersaud et al., 2005; Siega-Riz, Popkin and Carson, 1998). It has also been found out that skipping breakfast has also been found to be associated with dysmenorrhoea among the females (Fujiwara, 2003).

Research on the effects of breakfast on cognition shows that, particularly for younger children, skipping breakfast can have adverse effects on both general energy-levels and cognition of school children (Bellisle, 2004). Eating breakfast provides children with energy for their brains as it improves their learning skills. However, without breakfast, body energy reserves become depleted overnight. Researchers has documented that people who skip breakfast are more likely to have difficulty concentrating by mid-morning and to experience a decrease in intellectual performance (Keski- Rahkonen et al., 2003, Nicklas, O'Neil, Myers 2004) Furthermore, children who do not eat breakfast have reduced memory function, poorer attention spans and reduced performance in tasks requiring concentration when compared with those who consume an adequate breakfast. Therefore, consuming a healthy breakfast improves cognitive function and learning outcome (Mahoney, Taylor, Kanarek and Samuel, 2005). Habitually consuming an inadequate breakfast in quality and quantity is associated with poorer test scores (Lo´pez-Sobaler, Ortega, Quintas, Navia and Requejo, 2003). Research has further shown that skipping breakfast is associated with poorer school performance in children (Yang et al., 2006) and positively correlated with other health risk behavioural disinhibition (Keski-Rahkonen et al., 2003; Schoenborn 1986 and Yang et al, 2006).

There are several factors that affect the intake of breakfast among students. These include age, time, family structure, finance and parental attitude. Students tend to have change in their behaviour depending on what they have learnt in school. Considering these factors, there is little information as regards students' breakfast intake in Nigeria. It is therefore important to explore these factors and document as required.

1.3 Justification of the study

The period of transition between childhood and adulthood is adolescence; this is the phase of psychological, social and biological development. This stage of life is accompanied by rapid growth and an increased need for many nutrients especially vitamins and energy. Hence balance

diet and physical activity become important during adolescence (Millstein, Petersen and Nightingale, 1993). Adolescents choose their diet based on taste rather than on nutrition (Johnson, Wardle and Griffith, 2002).

Children require an adequate supply of nutrients for growth, energy and maintenance of body functions, their brain relies on a constant supply of nutrients in order to function properly. Researches on breakfast consumption have been carried out among primary school pupils and also among undergraduates. Not much has been done among the secondary school students Findings from this research will provide insight on the breakfast intake among secondary school students and this will also aid in the appropriate design of strategies to improve their practice among these students (Adewoye 2008; Lena, Carine, Jonatan, Emma, Chantal, Giovina, Ligia, SoniaGo'mez, Marcela, Fre'de' ric, Claire, Theodora, Kurt, Annika Luis, and Michael, 2011; Moy, Johari, Ismail, Mahad, Tie, and Wan Ismail, 2009) concluded that there should be planning for breakfast intervention programs through health awareness campaign for students.

The purpose of this study was therefore to identify the factors influencing breakfast intake among secondary school students. This study has provided information required helping in creating awareness about the importance of breakfast to students and it has also provided information required to design intervention programmes in schools to help address problems associated with breakfast skipping.

1.4 Research Questions

1. What is the knowledge of students on the importance of breakfast consumption?
2. What is the attitude of students towards breakfast?
3. How often do the students take breakfast?
4. What are the factors that contribute to the breakfast intake of students?

1.5 Broad Objective

This broad objective of this study was to document the knowledge, perception, attitude, practice and factors influencing the intake of breakfast among secondary school students in Ibadan North East Local Government.

1.6 Specific Objectives

The specific objectives of this study were to:

1. Assess the knowledge of students on the importance of breakfast consumption.
2. Assess the attitude of students towards breakfast consumption.
3. Determine the practice of breakfast consumption among the students;
4. Identify the factors that influence the intake of breakfast among the students.

1.7 Hypothesis

1. There is no association between mothers', level of education and knowledge towards the importance of breakfast.

2. There is no association between fathers', level of education and knowledge towards the importance of breakfast.

3 There is no association between the type of schools and knowledge towards the importance of breakfast.

1.8 Operational definition of terms

Breakfast: breakfast is the first thing you eat from the moment you wake up in the morning until the moment you start eating lunch (Dialektakou and Vranas, 2008).

Nutrients: The nutrients are the chemical substances that promote growth, supply energy and regulate all the body processes (Mann and Truswell 2007).

CHAPTER TWO
LITERATURE REVIEW

2.1 Definition of breakfast and its components

The term "breakfast" is an English noun which originated in the 15th century. It was the contraction of the phrase "to break (verb) (the) fast (noun)" indicating that overnight while one slept, one was not able to eat, and that shortly after awakening one would need to break the fast with a meal (Anon, 2013). Breakfast has been described as the most important meal of the day, contributing substantially to daily nutrient intake, health and energy needs of children. The importance of breakfast to children cannot be over emphasized as it required for proper growth and cognitive development in children. Researches has documented that there is no single definition for breakfast among scientists and consumers alike; however, some researchers has speculated that the lack of a universal definition for breakfast, as well as different methods for measuring the breakfast meal, has led to differing results in some studies examining the link between breakfast and health (Timlin and Pereira, 2007, Lee 2014). According to Rampersaud (2008), there are three key considerations for defining the breakfast eating occasion, namely the type of food consumed, the amount of food consumed and the time of day when the food is consumed.

Some researchers define breakfast to be the first meal of the day, eaten before or at the start of daily activities within 2 hours of waking (Timlin and Pereira, 2007). Another definition of breakfast is the first thing you eat from the moment you wake up in the morning until the moment you start eating lunch (Dialektakou and Vranos, 2008); the first eating occasion involving a solid food or a beverage that occurred after waking (Matthys, De Henauw, Bellemans, De Maeyer, and De Backer, 2007; Smith, Gall, McNaughton, Blizzard, Dwyer, and Venn, 2010.); the intake before school (Sjöberg et al., 2003); any intake of food or beverage between specific times in the morning (Vanelli, Iovane, Bernardini, Chiari, Errico, and Gelmetti, 2005; Alexander, Ventura, Spruijt-Metz, Weigensberg, Goran, and Davis 2009) , first meal of the day typically taken no later than mid morning, any food and or drink consumed in the morning, either at home or upon arrival at school (depending on the study design). It has also been suggested that the food and drink should consist of a minimum energy content to classify as 'breakfast' (Simon 2011). Some

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studies distinguished between whether a solid, beverage or both constituted breakfast, and others allowed slightly different definitions for breakfast intake between weekdays and weekends. In the Nigerian context, breakfast can be defined as any food either solid or liquid consumed before the noon time.

The ideal time for breakfast varies across the globe. According to some researchers the time on week days ranges between 5am and 10am (Haines, Guilkey, and Popkin, 1996; Barton, Eldridge and Thompson, 2005; Timlin and Pereira 2007; Aranceta, Serra-Majem, Ribas and Perez-Ridrigo, 2001; Wilson, Pamell, Wohlers and Shirley 2006; Alexandra et al., 2009) and on weekends from 5am to 11am (Barton, Eldridge, and Thompson, 2005; Aranceta, Serra-Majem, Ribas, and Perez-Ridrigo, 2001; Albertson. Frank, Thompson, Eldridge, Holschuh, and Affenito, 2009). In Nigeria, it has not been documented that breakfast has to be eaten before these speculated times researchers in these developed countries has documented.

Globally, it has been suggested that not only the intake of breakfast, but also the quality of the breakfast consumed, may influence the rest of the day's intake thereby further improving overall diet quality (Nicklas, Myers, Reger, Beech, and Berenson, 1998). Aside from the sheer nutrients provided by a breakfast meal, it is plausible to suggest that nutrients consumed at breakfast may affect foods choices and behaviour which follows throughout the rest of the day, predisposing breakfast eaters to healthier, more nutritious choices when compared to breakfast skippers, who are more likely to display poorer eating habits for the remainder of the day, as measured by a diet quality score (Nicklas et al., 1998). Breakfast also provides adequate nutrient intake which helps in the growth and development demands of children and adolescents (Hill, 1995; Rampersaud et al., 2005, Gibson and O'Sullivan, 1995). The quality of the breakfast is important as the nutritional status of a child can be affected as well as the physical and mental growth, health and general well being of the child. Breakfast provide 25% of the daily nutrient requirement in children (Gibson and O'Sullivan, 1995). Stephens and Summar (2008) also suggested further that the quality or types of foods consumed at breakfast may have an effect on diet quality and food choices for the rest of the day; for example, consumption of wholegrain foods, fruit and low-fat dairy products as well as inclusion of high fibre foods contributes to satiety and an overall healthful diet. Eating breakfast which includes these elements may help to reduce total fat intake and limit unfavourable snacking throughout the rest of the day. Pereira, Erickson, McKee,

Schiankler, Raatz, and Lylte. 2011 shared the finding of Stephens and Summar (2008). Pereira et al., (2011) revicwed two experimental pilot studies which investigated the effects of breakfast frequency and composition on appetite and blood sugar in adults and children. The review concluded that both breakfast frequency and quality may be linked to blood glucose and appetite control. The breakfast composition factors cited as influential were fibre and nutrient rich whole grains and the inclusion of fruit and dairy. Ortega, Requejo, Navia, Lopez-Sobaler, Quintas, and Andres, (1998b) conducted a study among 110 Spanish school children to determine the relationship between breakfast consumption and the energy and macronutrient profile of dietary intake for the remainder of the day. The researchers found that among children who consumed breakfasts providing more than 20% of their daily requirements for energy, total daily intakes of energy, proteins, fats and cholesterol were lower than for children consuming breakfasts providing less than 20% of the daily requirement for energy. The study concluded that the quality of breakfast consumed may influence the conditions under which foods choices are made for the remainder of the day. This suggests that energy contribution from breakfast may affect food choices and diet quality.

In the developed countries, it has been documented that there are some various classes of food which could be considered appropriate for a healthy breakfast. According to the United States Department of Agriculture (USDA, 2008), and a study by Rhodes in 2010, a healthy breakfast should consist of a variety of foods, for example a good breakfast is any healthy combination of carbohydrates for energy and protein for stamina and plenty of fiber; the combination will help satisfy hunger and will keep one feeling full until lunch time. Increased intake of protein especially at breakfast is important because the satiating property of dietary protein is influenced by the time protein is consumed (Ikhioya, 2015). According to Leidy, Bossingham, Mattes, and Campbell, (2009) protein intake at breakfast has a greater satiety effects than later meal time. Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness. There are several explanations as to why this is the case; for instance, protein has a greater thermogenic effect than carbohydrates and fat which enables the body to burn more calories (Paddoo, Westman, Mattes, Wolfe, Astrup, and Westerterp-Plantenga, 2008), a high protein breakfast appear to slow gastric emptying which attributes to the fact that protein appear to be most satiating macronutrient (Blom, Lluch, Stofley, Vinoy, Holst, Schoaafsma, and

Hendriks, 2006). Finally a high protein breakfast increases the activity of glucagon which activates the pathways for the synthesis of glucose. The protein can come from low-fat meat, eggs, nuts or dairy products. A healthy breakfast does not need to be extravagant or take a long time to prepare (Murphy, Wehler, Pagano, Little, Kleinman, and Jellinck, 1998; Warren, Henry and Simonite, 2003). For example, the daily intake of a nutrient such as calcium is higher for those who consume breakfast (Rampersaud et al., 2005). Calcium is especially important for children and adolescents as it is the period when bone calcium accumulation is at its highest. It is also recommends that people should consume a variety of nutritious foods from each of the four major food groups each day (Ministry of Health, New Zealand; 2008). Foods recommended by the Ministry of Health include vegetables and fruit, breads and cereals preferably whole-grain, milk and milk products preferably reduced- or low-fat options, meat, poultry, seafood, eggs.

Apart from the nutrients supplied by the above mentioned classes of foods, other nutrients required by the body which should also be components of a healthy breakfast include Iron, Vitamins B (folate, thiamine, riboflavin, niacin, vitamin B6, and vitamin B12) and Vitamin D. this has been evidenced that children that take breakfast are 20–60% approximately higher compared with breakfast skippers (Gibson, 2003). Little research exists globally on the optimal nutrient profile of breakfast, and further studies and clinical trials are required to develop sounds recommendations for implementation in the public health setting (Pereira et al., 2011). In Nigeria, researchers have not documented it that there are some classes of food that are recommended for breakfast; but rather, culturally, people perceive food to as the 'stomach filling substances' ; this means that people eat in order to live (Onifade, Owojaiye and Olaogun 2008).

2.2 The Importance of breakfast intake

The anecdotal term, "breakfast is the most important meal of the day" is often used to encourage breakfast intake among adults and children alike. researches has documented the association between breakfast and a healthy body weight, protection against cardiovascular diseases, improved diet quality and cognitive performance in children and adolescents (Sandercock, Voss and Dye, 2010). Breakfast is one element of a healthy lifestyle which has been linked to improved health and wellbeing in the long- and short-term. Adolescents who are skipping breakfast are essentially missing an opportunity for improved wellbeing, and it is recommended

that health practitioners promote healthy breakfast consumption among this particular target group (Rampersaud, 2008).

Below are the benefits of breakfast.

2.2.1 Improved cognition

Breakfast is also widely promoted to improve cognitive function and academic performance of children and adolescent, leading to the provision of breakfast initiatives by public health bodies (Hoyland, Dye and Lawton, 2008). Breakfast intake alleviates hunger, which can result in a much more alert in students. It has also been reported that breakfast benefits several aspects of memory function (Rampersaul et al.,2005). Eating breakfast helps students to eliminate or reduce stomach pain, headache, muscle tension, and fatigue, all which lead to an interference with learning. School personnel have the perfect access to students' breakfast eating habits and need to utilize the opportunity to teach students good breakfast eating habits, whether at school or home (Wolfes and Burkman, 2001). Eating a good quality breakfast has been found to slow the rate children's cognitive performance declines during the morning (Ingwersen, Defeyter, Kennedy, Wesnes, and Scholey, 2006).

Good quality is defined as having a low glycaemic index (GI), that is, foods high in fibre and complex carbohydrates. It has been established clearly that blood sugar improves cognitive performance in children and low GI foods provide a more stable supply of blood sugar over a longer period than foods high in sugar such as soft drinks and high-sugar cereals (Ingwersen et al., 2006). GI classifies foods according to their effect on postprandial glycaemia (blood glucose responses after consuming 50 g of available carbohydrate from the food), when compared to 50 g of available carbohydrate from a reference food.

In some developed countries ,a controlled study carried out in Minnesota among the found out that primary aged school children who were provided with a nutritious breakfast showed that they had "better concentration, increased alertness and energy, and a decrease in stomach aches and headaches" (Wahlstrom and Begalle, 1999). Other benefits included "a decrease in discipline problems and benefits in social behaviour, attendance, and a general increase in math and reading scores". A Boston study that provided free breakfasts to children in public schools likewise found that among the children who consumed breakfast, there was a significant

improvement in maths tests scores and a decrease in the number of days they were absent (Kleinman, Hall, Green, Korzec-Ramirez, Patton, Pagano, and Murphy, 2002). Similar studies are carried out in these countries Philadelphia and Baltimore (Murphy et al., 1998) Spain, (Lo´pez-Sobaler et al., 2003), the United Kingdom (Colquhoun, Wright, Pike, and Gatenby, 2008).

Furthermore, the importance of breakfast for academic achievement is reflected in the effects of breakfast on cognitive performance (Dye and Blundell, 2002). Research suggests that skipping breakfast detrimentally affects problem solving (Pollitt, Lewis, Garza and Shulman, 1982) short-term memory (Vaisman, Voet, Akivis and Vakil, 1996), attention and episodic memory (Wesnes, Pincock, Richardson, Helm, and Hails, 2003) low mood (Smith 2002) in children. Conversely, when children consume breakfast, their performance is enhanced on measures of vigilance attention, arithmetic (Conners and Blouin, 1983), problem solving tasks (Pollitt, Leibel and Greenfield, 1981) and logical reasoning (Marquez, Sutil de Naranjo, Rivas de Yepez, RinconSilva, Torres, and Yepez, 2001). Furthermore, research on confectionery snacks consumed by children in the morning indicated that long term memory may also be affected by food consumption (Busch, Taylor, Kanarek and Holcomb, 2007). Breakfast has also contributed to an increase in school attendance and a decrease in tardiness rates (Rampersaud et al., 2005). In comparison, to satiated children hungry children experience things like dizziness, irritability, colds, and ear infections, and are less able to concentrate (Hill, 1995).

2.2.2. Regulation of Body Mass Index in Children and Adolescents

Skipping breakfast has been found to be associated with being overweight for young people (Affenito, Thompson and Barton, 2005; Rampersaud et al., 2005; Utter, Scragg, Schaaf and Fitzgerald, 2007). The relationship between skipping breakfast and increased body mass index (BMI) is not well understood but there is some evidence of lower percentage of fat intake among children who eat breakfast (Rampersaud et al., 2005; Wilson, Parnell, Wohlers, and Shirley, 2006). And thus, children who skip breakfast may overcompensate by eating caloric-dense snacks during the day (Sjoberg et al., 2003).

In addition, skipping breakfast has been associated with less healthful lifestyles, including poorer food choices and infrequent physical activity – all risk factors for being overweight or obese. Given this association, provision of breakfast can help one's aspect of this, and perhaps act as a

circuit breaker a range of unhealthy behaviours. One study found children who skip breakfast are 1.5 times more likely than their peers to be overweight (Veugelers and Fitzgerald, 2005), another that "eating breakfast every day is associated with having a healthy body weight, likely due to a more even distribution of energy intake across meals throughout the day" (Dubois, Girard, Potvin Kent, Farmer, and Tatone-Tokuda, 2009). Studies also suggest eating breakfast encourages more regular eating and that this too contributes to the lower weight seen in children who eat breakfast regularly (Gleason and Dodd, 2009; Szajewska and Ruszczynski, 2010).

Furthermore, in the developed countries, several studies have been conducted among the adolescents on the effects of breakfast intake of on their weight. Two recent reviews (de la Hunty, Gibson, and Ashwell, 2013; Horikawa, Kodama, Yachi, Heianza, Hirasawa and Ibe, 2011) and several large cross-sectional studies (Hallström, Vreeken, Ruiz, Patterson, Gilbert, Catasta, 2011; Kosti, Panagiotakos and Mihas 2005; Panagiotakos, Antonogeorgos, Papadimitriou, Anthracopoulos, Papadopoulos, Konstantinidou, 2008; Sandercock, Voss, and Dye, 2010; Szajewska and Ruszczynski, 2010; Thompson-McCormick, Thomas, Bainivualiku, Khan, and Becker, 2010; Utter, et al., 2007; Yang, et al., 2006) report that adolescents who regularly eat breakfast are significantly less likely to be classified as overweight or obese than those who do not regularly eat breakfast. Some longitudinal cohort data indicate that over several years, adolescents who do not regularly eat breakfast gain more weight than regular breakfast eaters (Berkey, et al., 2003; Merten, Williams, and Shriver, 2009; Niemeier, et al., 2006; Smith, et al., 2010). Several studies have also shown that there is a positive relationship between breakfast skipping and overweight or obesity in adolescents (Dubois et al., 2009, Rampersaud et al., 2005, Szajewska and Ruszczynski, 2010, Merten, Williams and Shriver, 2009). A study in New Zealand showed a clear socioeconomic and ethnic gradient in the consumption of breakfast, with more deprived groups being less likely to eat breakfast (Ministry of Health, 2003; Utter, et al., 2007). This reflects the distribution of overweight and obesity within the community, with low-income groups more likely to be overweight. Triches and Giugliani (2005) reported that not eating breakfast in the morning as well as a low frequency of milk, fruit and vegetable consumption, were practices associated with increased body weight and obesity among primary school children. Meal skipping, in particular breakfast skipping is associated with appetite disregulation and breakfast skipping may lead to increased appetite (Pereira et al., 2011). A regular meal pattern may reduce the risk of developing of overweight and obesity. A high quality

breakfast has also been associated with factors related to appetite control, blood sugar and insulin levels among children and adults (Pereira, et al., 2011). Regular breakfast consumption is associated with improved diet quality and better food choices throughout the day (Matthys et al., 2007). Both the frequency and the quality of breakfast may be important in the fight against obesity.

A study that was conducted in Nigeria among the university students in Delta State revealed that overweight students, depression was positively linked with eating breakfast. This could be explained in two ways. First, depressed people are more often than not engaged in eating. Second, higher BMI may result in depression. Also it was found out that depressed people are more likely to in over eat (Judith , Kchi and Jephtha , 2014); not much study has been carried out in Nigeria about the relationship between breakfast and obesity.

2.2.3 Improved nutrient uptake

The consumption of breakfast has greater macro- and micronutrient intakes (in particular, calcium, fibre, iron, zinc, magnesium and vitamins A, C and the B vitamins), particularly when cereal-based foods are eaten (Affenito et al., 2013; Quigley and Watts 2007; Rampersaud, et al., 2005; Ruxton and Kirk, 1997; Williams, 2005; Wilson, et al., 2006).

Wilson et al., (2006) argued that for the children who do not eat breakfast, a significant improvement in their daily nutrient uptake could be achieved if they did so. Consumption of a good quality breakfast has been shown to be positively correlated with nutrient uptake (Kleinman et al., 2002; Rampersaud et al., 2005). Poor nutrient uptake, or "hidden hunger" (Van Stuijvenberg, Kvalsvig, Faber, Kruger, Kenoyer, and Benade 2005), can have detrimental effects on children's mental and physical development (Wynd, 2005), and "may play an important role in chronic disease risk" (Rampersaud et al., 2005).Data from the Children's Nutrition Survey (Ministry of Health, 2003) found significantly that there are better nutrient uptake for children who reported eat breakfast. Although breakfast provided only 16.2% of the daily energy intake, it provided a significant proportion of the daily intake of calcium (29.9%), iron (26.9%), zinc (20.2%), thiamin (37.0%), riboflavin (35.1%) and folate (36.8%) (Wilson et al., 2006).

2.3 Nutritional, functional, and metabolic role of breakfast consumption

After prolonged night fast, breakfast must first provide readily-available energy to allow coping with the morning activities and those of the day. Skipping breakfast may worsen early morning operations, leading to lower rates of intellectual performance and endurance in the case of physical exercise. (Cueto, 2001; Vermorel, Bitar, Vernet, Verdier and Coudert, 2003; Fanjiang and Kleinman, 2007). In children, adequate breakfast is associated with improved memory performance, attention, ability in problem solving, and better comprehension during reading and listening. Performance is comparatively more efficient not only immediately after consuming breakfast, but also throughout the following hours, as also observed in adult subjects (Rampersaud et al., 2005; Bellisle, 2004; Mahoney et al., 2005; Benton and Parker, 1998; Smith, 1999). Breakfast may modulate brain function by at least two biological mechanisms:

(a) By providing the central nervous system with essential nutrients.

(b) By modulating the efficiency of cognitive processes (Pollitt and Mathews, 1998).

Results from controlled trials suggest that regular breakfast consumption also improves several metabolic parameters, mostly associated with cardiovascular risk and in general, with the overall health status (Ruxton and Kirk 1997; Affenito 2007). Indeed, regular breakfast consumption is associated with improved insulin sensitivity and higher glucose tolerance during the following meals. The main components of a balanced breakfast (carbohydrates, protein and fibres, mainly supplied by fruits, grains, and cereals) directly improve glucose metabolism and the insulinemic response. The resulting greater sense of satiety is responsible for the lower caloric intake during the following meals (Blom, Stafleu, de Graaf, Kok, Schaafsma, and Hendriks 2005). The lower cholesterol levels of regular breakfast consumers reported by epidemiological studies have also been related to the elevated provision of fibre obtained with a carbohydrate based meal, especially if consumed within a diet generally rich in fibres. The lower daily fat intake associated with a balanced diet made of four meals (breakfast included) contributes to the control of lipid metabolism (Ruxton and Kirk 1997, Matthys et al., 2007).

2.4 Knowledge of school children on the Importance of breakfast consumption

Breakfast consumption is greatly influenced by the knowledge on the importance of breakfast and thus, on its daily nutritional intake. The awareness about the importance of breakfast would enable students to have good knowledge about the intake of breakfast. The importance of breakfast has been established in a study by Rampersaud et al., (2005) to review and summarize the literature examining the associations between breakfast, nutritional adequacy, body weight and cognitive and academic performance. Series of articles were reviewed in this study (47 articles, 22 from the United States, nine were related to nutritional adequacy, 16 related to weight, and 22 related to cognitive or academic performance). Upon completion of the review, they concluded that breakfast consumption significantly contributes to whole diet nutrient adequacy.

A study conducted by Kornwika, (2008) among the elementary students on food consumption and knowledge towards breakfast showed an average level of knowledge to the importance of breakfast. Furthermore, these students knowledge about breakfast were obtained from different media at schools and health related organisation Similarly, Chanognait's research, titled Knowledge, Attitudes and Behaviors Regarding Food Consumption of Upper Secondary School Students at Demonstration Schools under the Ministry of University Affairs in Bangkok (2001), which demonstrated that the students' had an average level of food consumption knowledge towards breakfast. These students knowledge was also obtained from schools, family and health related organizations.

A study carried out by some researchers Cordoba, Luengo and Garcia (2013) to determine if students of Compulsory Secondary Education of Badajoz city knew foods that were part of a healthy breakfast. It was found out that less than half of the respondents (49.2%) knew foods which are part of a healthy breakfast. From their study, it was found that the lifestyle of these adolescents did not affect their knowledge about the foods that are healthy for breakfast and their academic performance.

2.5 Attitude of school children towards consumption of breakfast

Breakfast intake of student is not only influenced by their knowledge towards it, but also their attitude towards its intake. In a study carried by some researchers among children ages 9-11 years old, the children had a negative attitude towards breakfast and this is usually influenced by the socio economic status (Graham, Katy, Simon, Rebecca, Larry, Claire and Laurence 2006). Furthermore, some students might deprive themselves from taking breakfast for unhealthy items like snacks, sweet and this in turn would affect their attitude towards the intake of breakfast negatively. Deprivation was inversely associated with attitudes towards eating breakfast (Graham et.al, 2006). Similarly, a recent study conducted amongst 12–14-year-old children that attitudes towards eating breakfast were predictive of breakfast consumption (Martens, Van Assema and Brug, 2005).

A study conducted by Kornwika, (2008) among the elementary students, concerning food consumption attitude towards breakfast, the students showed an agreed level towards the importance of breakfast. Similarly, Wonrudee's research, titled the Knowledge, Attitude and Practice about Food Consumption of Students in Education Opportunity Extended Lower Secondary Schools under the Bangkok Metropolitan Administration (2001), which stated the attitude of the students were also at an agreed level and it was influenced by their teachers, parents and relatives who indoctrinated them.

2.6 Perception of school children about breakfast consumption

Perception towards breakfast means the behavior and what student sees breakfast to be. When students do not have a positive perception towards healthy diet, such students would not perceive breakfast to be important. From a focus group research that was carried out among youths, they perceived healthy eating as something that is not very important; they have an overriding orientation toward the present and little concern about the future in terms of their own health (Neumark-Sztainer, Story, Perry and Casey 1999). Furthermore, youths do not perceive much urgency to change their behavior, since the future is so empirical and chronic diseases are said to be connected with older people.

A cross sectional study that was conducted among the medical students in china, it was found out that medical students had a good perception towards breakfast (Juan, He, Zhiyue, Yan, Jiang and

Yanyan, 2011). Furthermore, the breakfast prevalence among student with good self-perception (81.4%) about learning was significantly higher than students with bad self-perception.

Teresa, Lap, Ignatius and Sian, (2008) studied children's perceptions of parental attitude affecting breakfast skipping in primary sixth grade student; from their result, it was found out that out of 426 students, 30.5% of the respondents skip breakfast for at least once daily in a school week. This is associated with lack of perceived parental emphasis on breakfast.

A study that was carried out among adolescent, showed that the weight perception of these adolescent was associated with infrequent breakfast consumption. Furthermore, out was found out that 9.5% of the adolescent who perceived they as overweight skip breakfast compared with less than 5% of adolescents who perceived as normal weight (Zumin, Nanna, Bernadette and Gerd, 2005).

2.7 Practice of breakfast intake

Breakfast intake and quality of food consumed is important to a child's nutritional status as it may affect the mental and physical development of children, as well as the health of the child (Dams and Metzl, 2000). When students skip breakfast, it may affect concentration, learning and school performance. Breakfast skippers are defined in various ways: people who skip breakfast on the dietary survey day; who usually skip breakfast; who skipped breakfast more than three times the previous week; who never or almost never consume breakfast (Rampersaud et al., 2005, Szajewska and Ruszczynski, 2010).

Despite the importance of daily breakfast consumption, breakfast skipping is common among many adolescents in the developed countries with prevalence of breakfast skipping varying between 3% (Dialektakou and Vrantas, 2008) and 34% (Rampersaud et al., 2005). Moreover, a good quality breakfast is consumed among just 10% or fewer of adolescents from Belgium (Matthys et al., 2007) and the Netherlands; thus, this pattern of decreasing breakfast consumption over time is seen in other countries that have collected time-series data, except a single small cohort study of adolescents from 15 to 21 years in Sweden (Raaijmakers, Kothelijne, Bessem, Stef, Kremer, and Patricia 2010, Brugman et al., 2008). Likewise in India, the proportion of children skipping breakfast regularly was even higher over 50% (Chitra and Reddy 2006). Furthermore, four studies which were conducted in three different countries (United State,

Jamaica and Peru) revealed from their findings that when undernourished children missed breakfast, they performed worse in tests of cognition. Adequately nourished children's performance was unaffected by missing breakfast. Breakfast skipping is highly prevalent in the United States and Europe (10% to 30%), depending on age group, population, and its definition. Breakfast may be the most important meal of the day, but yet, adolescents are more likely to skip this meal compared to any other meal (Pearson, Biddle, and Gorely, 2008). Thus, it is a common unhealthy practice in adolescent. It is estimated that 12-34% of adolescents and children skip breakfast (Siega-Riz, Popkin and Carson 1998, Gardner and Amanda, 2008). Similarly to this, a national health survey (1999-2006) that was carried out to know the relationship of breakfast skipping and the type of breakfast consumption with nutrients intake and weight status in children and adolescents found out 20% of children were breakfast skippers while 31.5% of adolescents were breakfast skippers. The percentage of adolescent skipping breakfast increases with age, especially for females. Among adolescents 14-18 years old, 34% of girls and 28% of boys ate nothing compared to only 15% among boys and girls aged 9-13 years old (Gleason, Phillip and Suitor, 2001). In addition, Yang et al., (2006) found that 23.6% of Taiwanese adolescents had irregular breakfast intakes (consuming breakfast 3 days or fewer from Monday to Friday.

A cross sectional study that was conducted among the medical students in china found out that more males skips breakfast than the females. The prevalence was 41.7%and 23.5% for males and females respectively (Juan et al., 2011). Also, a study that was carried out among the university students in the U.S found out that 8% of the students skip breakfast (Silliman, Rodas- Fortier and Neyman, 2004). A review of breakfast practices in Asian regions revealed that around 18% and 4% of Japanese high school and elementary school students skipped breakfast (consuming less than 100kcal within 2 to3 hours of waking), respectively (Howden, Chong , Leung , Rabuco , Sakamoto and Tchai, 1993). Similarly to this, a study was carried out which focused on Korean elementary school students, found out that an average of approximately 80.5% of children from two schools consumed breakfast 5 times or more per week (Chung, Lee and Kwon, 2004). In another study comparing the dietary habits of Malaysian and Singaporean adolescents, researchers found breakfast skipping rates to be 2.7% and 6.0%, respectively (Lew and Barlow, 2005). A study that was carried out among school students in Saudi on the prevalence of daily

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breakfast intake, iron deficiency anaemia and awareness of being anaemic showed that 14.9% of the students skip breakfast and also students with poor performance skip breakfast also do skip breakfast (Bahaa and Sherine 2002). In general, these studies found that the prevalence varied substantially across populations where inconsistent definitions of breakfast skipping or irregular breakfast consumption may partly be accountable for such differences.

An article reviewed several research studies on the impact of the lack of breakfast among students. Recent data reveal that in some of the African countries, like Ghana, 41% of children were underweight or had a weight-for-age under -2 standard deviations of the NCHS standards. In Tanzania, about 34% of children were underweight. In Nigeria, about 20% of children were wasted or had weight-for-height measurements under the 5th percentile of the US National Center for Health Statistics (NCHS) standard. Many more students in Africa are attending school, but many are leaving primary school early or failing secondary school examinations. It is argued that without the intake of breakfast, nutritional status of the children will be affected and thereby affect their learning process. However, despite the widely recognized importance of regular breakfast consumption, breakfast skipping remains prevalent in these populations (Mullan and Singh, 2010).

A study that was also conducted in Nigeria, conducted among the university students about their breakfast habits and nutritional status, was found out that over half of the students skip breakfast (Oladapo, Roland, Quarli, and Omogbenigun, 2014). In addition, Ogunkunle and Oludele (2013), also conducted a study among adolescents' in schools at Ila Orangun concerning their food intake and meal pattern, found out that one third (38%) of the adolescents skip breakfast. Furthermore, Onyechi and Ugwunnadi, (2009), revealed that out that school children who are rural dwellers (90%) consumed breakfast compared to urban dwellers (78.3%). Furthermore, there is a significant difference in the availability of food in rural homes and the quantity of food purchased in the market compared to the urban dwellers. Contrary to these other studies carried out in Nigeria, a study carried out among the primary school students in Enugu (Nwamarrah, Otitoju and Emewulu 2015) revealed that majority of the students (97.5%) consume breakfast and this is likewise consistent with a study conducted by Olumakaiye, Afinmo, and Olubayo (2010) on food consumption patterns of Nigerian children and it showed that majority of Nigerian children did eat 3 times per day. This is highly commendable and should be

encouraged; consumption of breakfast can boost a child's diet by meeting the daily nutrient intake requirement, promoting healthful food choices and it is also associated with better academic performances.

2.8 Factors Influencing Breakfast Intake

Globally, people skip breakfast for a variety of reasons. Recognizing these reasons for skipping breakfast is potentially important for identification of methods to promote breakfast consumption (Ratnpersuad et al., 2005). Factor has a strong influence on the intake of breakfast among children.

1 Age

Despite the benefits of consuming breakfast regularly, breakfast consumption decreases with increasing age during adolescence (Clinical Trials Research Unit, University of Auckland, and Synovate, 2010, Affenito, Thompson and Barton, 2005; Delva, O'Malley and Johnston 2006). In the developed countries, researchers has documented it that age, is one of the factors that affect the intake of breakfast. It is believed that as one grows older, the intake of breakfast increases. According to some researchers (Affenito 2007, Murata 2000, Barton, Eldridge and Thomspon 2005, Lytle, Seifert, Greenstein, and McGovern, 2000), it was found out that the intake of breakfast decreases with age among children. Similarly to this, a study that was carried out among the children (aged 18years or below) in America found out that older adolescents (aged 15 to 18 years) experienced the largest decline in breakfast consumption from 1965 to 1991, with a 14.8% and 19.7% decline among boys and girls, respectively (Siega-Riz, Popkin and Carson 1998). Despite this, the pattern of breakfast consumption may be different with the increase in age beyond adolescence. For example, Keski-Rahkonen et al., (2003) reported that older adults were less likely to skip breakfast compared with young adults. The authors postulated that this observation was due to increased meal regularity with age or general declines in breakfast consumption in younger generations (Keski-Rahkonen et al., 2003). Findings from Tin and Pamela (2010), study also revealed that older children tend to skip breakfast. Two nationwide surveys found that 81% of 10-14 year olds reported eating breakfast daily (Ministry of Health, 2012) compared to approximately half of 15-18 year olds (Ministry of Health, 2011). This decline in breakfast consumption over time may reflect the greater control adolescents exert over

their dietary patterns as they get older. In particular, studies have found that as adolescent's age they become less likely to consume breakfast (Siega-Riz, Popkin, and Carson, 1998), such that 19-24 year olds have the highest rates of breakfast skipping of any age group (Williams, 2007). Delva, O'Malley and Johnston (2006) conducted a study among the youth and observed that substantially fewer White, Black and Hispanic youth had frequent breakfast intake in grade twelve when compared to the frequency of breakfast intake among students in grade eight. Affenito, Thomspon and Barton (2005) conducted a study to measure breakfast consumption among African-American and White adolescent girls in the United State. To determine frequency of breakfast consumption, dietary intake over three days was assessed, and intake was considered frequent if the participants consumed breakfast on all three days of assessment. Among study participants aged 9 years, 77% of White girls and 57% of African-American girls ate breakfast frequently. Among study participants aged 19 years, only 32% and 22% of White and African-American girls reported frequent breakfast consumption. The study concluded that the number of days breakfast was eaten tended to decrease with increasing age.

It is believed that as children grow older, they make moral decisions and act on them; and these are some of the factors that influence their breakfast intake. In line with this, Murata (2000), and Burgman et al., (2008) found out that breakfast skipping habit has also been found to increase with age, possibly explained by increasing autonomy. Such increasing autonomy may lead to sleeping and waking up late (Kim, Frongillo, Han, Kim and Jang, 2003, Benton and Jarvis 2007; Korol and Gold 1998), which affect their breakfast intake. Furthermore, dietary autonomy may increase children's' exposure to different food as they grow older, increasing the chance for them to demonstrate food choices and dietary habits. In addition to increased autonomy, studies which focused on adolescents in Japan (Murata 2000) and Taiwan (Yang et al., 2006) have suggested increased food intake late at night by high school students studying for entrance exams to be the culprit leading to breakfast skipping in the following morning. Although it is unlikely for parents to allow young children to stay up at night for studying, this hypothesis remains possible due to constant parental emphasis on the importance of academic achievement. According to research conducted by Hallstrom et al., (2011), younger adolescents are more likely to be influenced by their parents' food choices and breakfast behaviour. This trend tends to decrease as the adolescent's age increases. This may be as a result of older adolescents expressing their

independence and autonomy, and choosing not to follow their parents' example (Hallstrom et al., 2011). Levin and Kirby (2012) used data from the Scottish health behaviour in School-aged Children surveys conducted in 2002, 2006 and 2010 to determine which factors within the family environment influenced irregular breakfast consumption. Regardless of family structure, being of older age or of higher grade was significantly associated with irregular breakfast consumption for adolescents.

2 Gender

Globally, studies have frequently reported that girls were more likely to skip breakfast compared with boys (Timlin, Pereim, Story, and Neumark-Szwiner 2008, Rampersaud et al., 2005, Sjoberg, 2003) A possible explanation is the stronger desire for girls to skip meals in attempt to lose weight (Timlin et al., 2008, Zullig, Ubbes, Pyle, and Valois, 2006) and by so doing this, they skip breakfast.. However, a study which focused on Primary 6 schoolchildren found that girls were less likely to skip breakfast compared with boys (Cheng, Tse, Yu, and Griffiths 2008). Although the results were statistically non-significant and reasons for breakfast skipping were not explored according to sex, these findings suggested that the characteristics of non-Western breakfast skippers may differ from their Western counterparts. For example, Affenito, Thomspon aand Barton (2005) reported that African- American girls were less likely to be frequent breakfast eaters compared with their White counterparts; thus, this therefore suggests that breakfast intake may vary across different cultures and races. Studies carried out found that boys more likely to be regular breakfast consumers compared with girls, which is supported by previous findings (Lien, 2007; Matthys et al., 2007; Sjoberg et al., 2003), although not consistently (Arancela et al.,2001). One reason for the sex differences in breakfast consumption could be that girls skip breakfast to control their weight (Lattimore and Halford, 2003; Timlin et al., 2008). Girls reported also that they were more influenced in their choices of food for breakfast by their 'parents', by 'concern for health' and 'daily routine' compared to boys. Similar results have been reported elsewhere (Boutelle, Neumark-Sztainer, Story and Resnick 2007). Hallstrom et al., (2011) assessed the factors affecting food choices and breakfast habits amoog European adolescents, it was found that overall, and girls were less likely to be regular breakfast consumers when compared to boys. These findings were supported in the research conducted by (Merten, Williams and Shriver 2009), which also concluded that females were less likely than

males to eat breakfast during adolescence. An Australian based study investigating adolescent breakfast skipping identified gender to be the only statistically significant demographic variable predicting breakfast skipping behaviour (Shaw, 1998). These findings contradict understanding of female dietary behaviour as females typically make more healthy food choices and have a greater concern for health than males (Hallstrom et al., 2011; Lattimore and Halford, 2003), weight conscious (Yeung 2010). A possible explanation for this observation is that because females are typically more health conscious and are more likely to adopt energy-restrictive dieting techniques, they are significantly more likely to skip breakfast (Lattimore and Halford, 2003). Furthermore, a study that was carried out among primary school student to know relationship between breakfast, academic performance and vigilance in school aged children it was found out that more than half (56.9%) of student that were used for the study skip breakfast and that it has nothing to do with gender (Abdullah 2000). Regardless of sex or gender, individuals who regard themselves as too heavy may skip breakfast to lose weight (Rampersaud, 2009, Utter et al., 2007, Timlin, et al., 2008). Consistent with other studies (Nicklas et al., 2000, Onega et al., 1998), more Ghanaian girls (16.9%) than boys (12.2%) in a study carried out skipped breakfast. A study that was conducted by Onyiriuka, Umoru and Ibeawuchi (2013) among the Nigerian Urban secondary school girls, found out that 48.1% of the girls skip breakfast and the two reasons they gave were that they lack appetite and time. Judith, Kehi and Jephtha (2013) documented that the sex or gender does not have any influence on the breakfast consumption of students in Nigeria from a study conducted. From the study, it was found out 55.8% and 58.9% of male and female respectively tend to eat breakfast. 'There is no significant difference between male and female students who were observed for frequency of breakfast consumption, although in most Europe countries females eat breakfast more than do males.

3 Food preferences taste and hunger

Self-reported food preferences have been found to be one of the strongest predictors of food choices, especially among adolescents. Food preferences are formed through a series of interactions throughout an individual's life, such as exposure, experience associated with certain foods and individual genetic palate, ultimately conditioning individuals to their food preferences (Story, Neumark-Sztainer and French, 2002). According to the research conducted by Hallstrom et al., (2011), the personal factors of 'hunger' and 'taste' were some of the most important

influences of food choice at breakfast among adolescents. Similar findings were reported by Yeung (2010), indicating that 'flavour' was a key factor in driving food choice. Yeung (2010) also reported that cost was a main concern when making food choices, but nutritive value and hygiene were less important influences among these adolescents. In 12 focus group discussions conducted by Stevenson, Doherty, Barnett, Muldoon, and Trew, (2007) among adolescents based in the UK, it was found that food aesthetics, such as taste, texture, appearance and smell were the most powerful reinforces of food choice. As a result, foods which were less healthy, but offered good taste were viewed as rewarding because of the foods physical properties, where healthier foods (notably green vegetables) were noted to be bland or unpleasant. Berg, Jonsson, Conner, and Lissner (2003) conducted a study among Swedish adolescents aged 11 to 15 years to determine the reasons for choosing different fat and fibre-containing foods at breakfast. While students were aware of which cereal products were higher in fibre, and aware of the associated health benefits of fibre, the study participants were less likely to choose these foods for usual breakfast consumption. The reason for this was that in general, the students perceived foods higher in fibre to be less palatable. In this example, the taste of the food was the key factor in determining which food would be consumed at breakfast regardless of the nutrition credentials of the food (Berg et al., 2003). Because the 'tastiest' foods are often those higher in fats, sugars and energy, allowing 'taste' to be the key driving factor for food choices may compromise nutrition intake.

4 Socio Economic Status

It is documented that the health related behaviours among American students: National Trends Report conducted in the United State sought to establish long term trends in race and socio-economic status relating to students who are overweight and engaging in health behaviours associated with weight loss (Delva, O'Malley and Johnston 2006). The study showed a consistent positive association between socio economy status and regular breakfast consumption. Students of high socio economy status were significantly more likely to consume breakfast than students of low socio economy status. Breuning, Larson, Story, Neumark-Sztainer and Hannan (2011) found similar results; in a study aiming to identify the predictors of breakfast consumption among adolescents in the US, based on the findings of the Project 'Eating Among Teens' (EAT). One finding of this study was that study participants from higher socio economic status were

more likely to report regular breakfast consumption. Breuning et al., (2011) noted that interventions promoting breakfast consumption in lower income schools are required. Merten, Williams and Shriver (2009) analysed data from the National Longitudinal Study of Adolescent Health in the United State to understand the interaction between breakfast, obesity and community and family influences. According to (Merten, Williams and Shriver 2009), higher levels of community disadvantage and family poverty decreased the likelihood of adolescent breakfast consumption. Contrary to these findings, (Hallstrom et al., 2011) found that adolescent males who perceived their family to be "not well off" were more likely to consume breakfast regularly when compared to adolescent males who perceived their family to be "well off". Pearson, Macfarlane, Crawford and Biddle (2009) conducted a systematic review of correlates of breakfast consumption among adolescents; of the 13 studies included which investigated adolescent breakfast consumption, seven found that socio-economic status was positively associated with breakfast consumption. The remaining six study samples reviewed found no association between these variables. While studies have shown the inverse relationship between socio economy status and breakfast consumption among adolescents, others have argued that the influence of peers, schools and the environment outweigh the influence of socio- economic status on breakfast intake (Pearson et al., 2009). A number of factors linked to lower socio economy status could influence decreased breakfast consumption, such as limited access to food outlets, limited shared family time, strained financial resources, food insecurity and lack of nutrition and health knowledge (Gable and Lutz, 2000).

Food insecurity occurs when the most critical issues that confront Nigeria are the problem of food insecurity and family insecurity. Food security exists when people have physical and economic access to sufficient, safe and nutritious food to meet the dietary needs and food preference of family members. The food security problem is multifaceted since its relates to poverty, in terms of the family purchasing power and food practices that may enhance the nutritive value of food in the correct quality and quantity. Food security for a household means access to nutritious meals by all members at all times. Inadequate food supply affects family security. According to Food and Agricultural Organisation (FAO 2011), food security includes, at a minimum, the availability of nutritionally adequate and safe foods and the ability to acquire acceptable foods in a socially acceptable way. In the absence of secured source of food supply,

there is bound to be hunger problems, and its manifestation in malnourishment especially of children and women. The main causes of malnutrition are: lack of food, health and care. Food security, health and family security have an important link to nutrition. Majority of people do not have access to food that is adequate in quantity and quality consisteat with decent existence at all times. Food insecurity has adverse effects on individuals and nation as it's slows down nations' developmental plans and affects family insecurity. In Nigeria, the quality and quantity of food purchase is low (Nwakego and Elizabeth 2013). A comparative study that was carried out among the rural and urban school students in Nigeria, found out that the reasons why the urban dwellers skip breakfast were lack of time, unavailability of food in the house and not being hungry, while that of the rural dwellers were that there is no food and that they are not hungry. Furthermore, Onyechi and Ugwunnadi (2009) further stated that poverty was implicated as the major cause of low breakfast consumption.

5 Family Structure and Parental Modeling

Families mediate dietary behaviours for adolescents in two ways: first is the provision of certain foods affecting availability and accessibility of foods to the adolescent, and second is the role of the family and parents in particular in influencing food preferences, values. attitudes and habits (Story, Neumark-Stainzer and French 2002). While parents have little influence on adolescent food choices outside of the home, they can influence which foods are available within the home. Ensuring that nutritious healthy foods are available and visible guides the adolescent's food choices (Story, Neumark- Stainzer and French 2002). Levin and Kirby (2012) investigated irregular breakfast consumption by family structure, and breakfast intake was shown to vary depending on the family dynamics present. Difficult parent-child relationships or poor communication and irregular personal and family routines were associated with irregular breakfast intake regardless of the number of parents in a household. In households where both parents were present, living with siblings, being treated unfairly and having older siblings was associated with irregular breakfast consumption. Being close to at least one parent was associated with reduced likelihood of irregular breakfast consumption in single mother households, and in single mother homes, adolescents with mothers who worked away from home also had higher likelihood for irregular breakfast intake (Levin and Kirby, 2012). Similarly, Meiten, Williams and Shriver (2009) found that adolescents who had at least one parent present

in the morning were more likely to eat breakfast than adolescents who had no parents present in the morning.

Family routines are important to facilitate communication and connections between family members, as well as to promote family identity and organisation. Opportunities for connecting with family members allows parents to socialise with young people, share values and experiences, and influence their children's habits and activities. Family organisation and routine have been linked to adolescent psychological health, body weight status and dietary intake. Routines and socialisation in turn impact parent-child relationships (Levin and Kirby, 2012). Hallstrom et al., (2011) highlighted the role of parents in encouraging healthy eating behaviour among adolescents. In this study, boys from single-parent or divorced families were less likely to eat breakfast regularly when compared to boys from traditional families. Boys whose parents gave little or no encouragement to eat breakfast or follow a healthy diet tended to be less likely to eat breakfast regularly. Where parents of boys practised healthy eating behaviours themselves, their sons were more likely to eat breakfast regularly when compared to boys whose parents did not practise healthy eating behaviours. By setting a positive example of dietary intake behaviours themselves, they create a standard of acceptable dietary behaviour, which their children are more likely to comply with. It has been suggested that increased frequency of meal eaten together as a family is an effective way of influencing adolescent's breakfast habits and to create an environment that encourages general health conscious behaviour (Hallstrom et al., 2011; Levin and Kirby, 2012). Shaw (1998) reports that breakfast skipping was more frequent when eating alone, or when breakfast had to be prepared by teenagers themselves and found that the social context played an important role in the consumption of breakfast. The context was also seen as a determining factor of the consumption of a good quality" breakfast. It was found that children having breakfast with their family were classified in the "good quality" breakfast group (Aranceta et al., 2001). In support, a study focused on breakfast skipping among Australian adolescents found that breakfast skipping appeared to depend on personal choice and that offering subsidized or free meals should not be the solution to encourage breakfast consumption (Shaw 1998). Children and adolescents who do not live with both parents are more likely to skip breakfast (Burgman et al., 1998, Yang et al., 2006). The importance of family has influence on the breakfast intake of young children has previously been documented in a review by Pearson et

al., (2009), although the authors noted that research in this area requires further exploration. Food availability, behaviour modeling and family culture are postulated to play key roles for influencing the dietary behaviour of children (Pearson et al., 2009, Dejong, Van, Van der and Oenema, 2009). Other common reasons for skipping breakfast include not liking the food served at breakfast (Shaw 1998), not wanting to eat in the morning (Sweeney and Horishita, 2005), and a preference for sleeping over eating (Neumark et al., 1999) or lack of time or hunger to eat and prepare breakfast. Parental influence on children's breakfast habit may be age-specific, such that younger children are under more parental control compared with older children (Keshi-Rahkonen et al., 2003). Western studies have suggested that children of ethnic minorities were more likely to skip breakfast (Rampersaud et al., 2005). Cheng et al., (2008) also reported in his study that the most common reason for school children to skip breakfast was having insufficient time to eat and also, the lack of perceived parental emphasis on breakfast was an important reason for skipping breakfast. Lack of parental control and some parents working outside the home or some divorced can have an influence on the child's intake of breakfast (Mullie, De Ridder, Deriemacker, Duvigneaud, and Hebbelink, 2006; Shaw, 1998). This reflects the importance of parental influence on breakfast habit among young children.

6 Physical environmental or community setting

The physical environment in which a community exists affects accessibility and availability of different foods (Story et al., 2002). As young adolescents become young adults, their likelihood for eating more meals out of the home increases. It has been reported that a third of adolescent eating occasions take place outside of the home, and is comprised of meals at school, fast food restaurants, vending machines and other locations (Anon, 1998). For this reason, the physical environment to which an adolescent is exposed significantly impacts the type of foods made available to them, thus influencing dietary intake, meal frequency and patterns.

Some families in Nigeria depend on food vendors for provision of their meals especially breakfast. Food and Agricultural Organisation (FAO 2011), has defined street foods as ready to eat foods and beverages prepared and sold by vendors especially in streets and other public places.

7 School

The school food environment may have a key influence on adolescents' dietary behaviour and food choices because a large portion of adolescents total daily energy intake is consumed at school (Burghardt, Gordon, Chapman, Gleason, and Fraker 1993). According to United Nations' World Food Program (WFP, 2010; Isa, Khalid and Ahmed 2012), in developing countries, almost 60 million children go to school hungry everyday about 40% of them in Africa. Among the poor, there is often not enough food at home, and most schools in developing countries lack canteens or cafeterias. School meals are a good way to channel vital nourishment to poor children. Having a full stomach also helps them to concentrate better on their lessons (WFP, 2010). In countries where school attendance is low, the promise of at least one nutritious meal each day boosts enrolment and promotes regular attendance. Parents are motivated to send their children to school instead of keeping them at home to work or care for siblings (WFP, 2010). The WFP also believes that in the poorest parts of the world, a school meal program can double primary school enrolments in one year. In South Africa, Temple Steyn, Myburgh, and Nel, (2006) investigated foods items consumed by students attending different schools; 22% of the study participants skipped breakfast before going to school, 80% did eat a meal at school, which in the majority of the cases was purchased from the school. Three quarters of the food purchased at the school came from a tuck shop and was generally regarded as less healthy food. One quarter of the students who bought food from school purchased from local vendors. In this case, the types of food to which children are exposed at school influence their dietary choices and as a result, have a less healthy diet. By influencing the types of food made available, it would be possible to improve the overall diet among these children (Temple et al., 2006). The provision of meals in school provides a significant contribution to food intake among the adolescents from lower socio-economic background.

To improve the nutritional status of school children, the Federal Government launched the Home-Grown School Feeding and Health program in September 2005 under the coordination of the Federal Ministry of Education. The program aims to provide a nutritionally-adequate meal during the school day (UNICEF, 2006). Provision of school meal will definitely impart positively on both the attendance and cognition of the pupils. Although provision of school meal is in practice in Nigeria, it is still at a very low ebb and optional. If the huge amount being

invested on the Universal Basic Education is to yield the desired results urgent and appropriate action should be placed on the provision of government subsidized school meals. Also, the school meals should be well planned to ensure good nutrient quality (Adepoju 2010). In this respect, the Home Economics units of both the schools and ministry of education should be involved in the planning, formulation and preparation. If school meals are of good nutrient quantity and quality and the supply is efficient and continues for some time, the children's underlying nutrition status such as wasting should improve. However, it is more difficult but possible, to improve stunting (Powell, Walker, Chang and Graham 1998).

2.9 Strategies to Improve breakfast consumption

According to Quigley, Taylor, and Scragg, (2007), the following strategies could help improve breakfast consumption:

- Parents should role-model eating breakfast, and siblings should consume breakfast together and role-model for each other;
- Children should be involved in the preparation of breakfast (either the night before or in the morning);
- Parents need to be aware of what foods are available for purchase at the school and discuss with their children what they are buying with pocket money or money provided to buy food;
- If a child will not eat breakfast, a suitable packed breakfast could be provided (leftovers if feasible).

2.10 Conceptual Framework

There are a number of social-cognitive models that attempt to understand these factors behind behaviour. The Theory of Planned behaviour is among the most cited theoretical frameworks for predicting a wide range of behaviours. (Hall and Geoffey 2007). Theory of planned behavior is a theory about the link between attitudes and behavior. The concept was proposed by Icek Ajzen to improve on the predictive power of the theory of reasoned action by including perceived behavioural control (Ajzen 1991). It is one of the most predictive persuasion theories.

According to the theory, human behavior is guided by three kinds of considerations: beliefs about the likely consequences of the behavior (attitudes towards behaviour), beliefs about the

normative expectations of others (subjective norms), and beliefs about the presence of factors that may facilitate or impede performance of the behavior (perceived behavioural control).

In combination, attitude toward the behavior, subjective norm, and perception of behavioral control lead to the formation of a behavioral intention. Intentions are the immediate antecedent to performing a specific behaviour. In general, the stronger the intention to engage in behaviour, the more likely it will be performed (Ajzen, 1991). The more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to perform the behavior.

Application of theory of planned behavior to the intake of breakfast

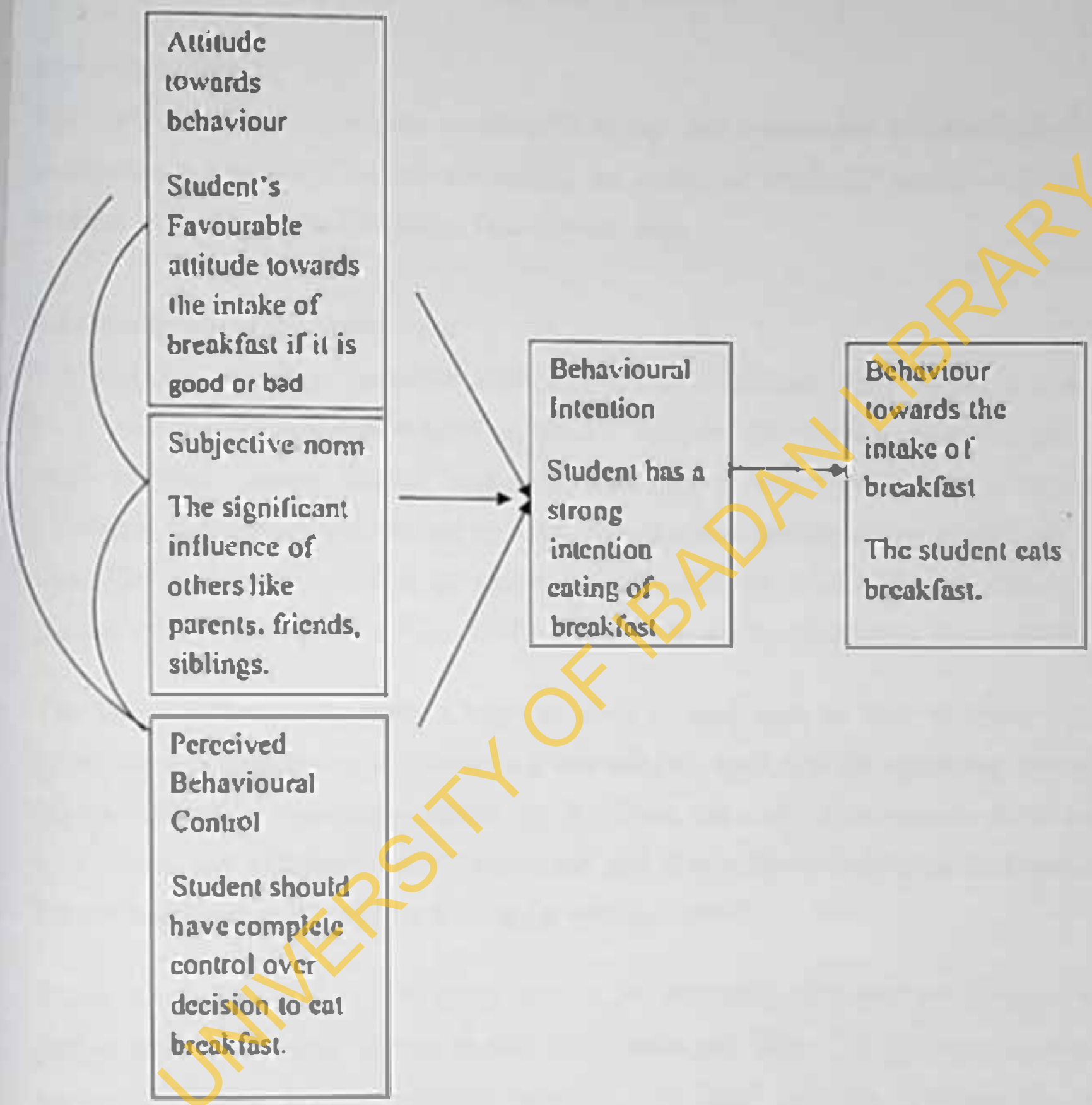
Attitude towards behavior: Attitudes is an individual's internal state in response to an object and reflect some degree of either positive or negative. From the study conducted, the belief that breakfast is important would enable the students to have positive attitude towards the intake.

Subjective norms: The signifance of people around the students might influence their intake of consuming breakfast. Parents, siblings and friends are likely to have a positive influence if these people consume breakfast. The belief that their parents for example provide breakfast for them by either giving them money to buy food or they bring the food from home would encourage the student to consume breakfast.

Perceived behavioural control: the belief that breakfast has nutritional value would make the students to consume breakfast.

Behavioural intention: from the study, the positive attitude towards the importance of breakfast and its intake; with the influence of people around them like their parents, siblings and friends, the students would be able to have a strong intention of taking breakfast.

Behaviour towards taking breakfast: the belief that breakfast is important for their growth and development would encourage the students to consume breakfast.



Theory of planned behavior. (Azjen 1991)

Fig 2.1 Model of Theory of Planned Behaviour as applied to the study.

CHAPTER THREE
METHODOLOGY

3.1 Study design

The study was descriptive cross sectional in design and it identified the knowledge, attitudes, perception, practice and factors influencing the intake of breakfast among secondary school students in Ibadan North-East Local Government Area.

3.2 Description of the Study Area

The study was carried out in Ibadan North East Local Government Area Oyo State. Ibadan North East Local Government was created on the 27th August 1991 by the administration of former Head of State General Ibrahim Badamosi Babagida. It was carved out the former Ibadan Municipal Government and derived its name from the metropolitan nature of the area it covered then. The local government has its administrative headquarters located along Iwo road axis of Ibadan, a major entry point through the Ife/Ibadan expressway end of Oyo State capital.

The Local Government covers a large expanse of land with an area of about 12.5 square kilometer. It is bounded on the East by Egbeda and Ona Ara Local Governments, on the West by Ibadan North East Local Government. On the North, the Local Government shares boundaries with Lagelu and Akinyele Local Governments with Ibadan South East Local Government on the South (Handbook of Ibadan North Local Government 2007).

Ibadan North East Local Government Area is predominately occupied by Yorubas. However, people from other ethnic groups include the Hausas and Ibos. The populace consists of civil servants, teachers, traders, students, artisans. The main business activities in this Local Government area is buying and selling of different types of goods ranging from household needs, foodstuff, building/ electrical materials. It has a population of 331,444 people. The male population is made up of 163,844, while the female population is 167,600 people (Handbook of Ibadan North Local Government 2007).

There are 19 Public Secondary Schools and 5 Private Secondary Schools. The public schools are divided based on students population into 2 schools. The junior Schools and Senior Schools: 41 junior schools and 11 senior schools (Handbook on Ibadan North East Local Government, 2007).

3.3 Study Population

The study was carried out among the secondary school students of both the public and private in Ibadan North East Local Government Area, Oyo State, Nigeria.

3.4 Sampling Size

The Sample size was calculated by using the following formula for population size greater by 10,000.

$$n = \frac{z^2 pq}{d^2}$$ (Leshic Kish 1965 Formula)

Where:

- n= the desired population size greater than 10,000
- z= the standard normal deviate using set at 1.96=95%
- P= 29.2% (Moy et al 2009).
- Q= 1-p (1-0.29= 0.71)
- $n = \frac{1.96^2 \times 0.29 \times 0.71}{0.05^2} = 316$

A non-response rate of 10% was added to the calculated sample size of 316 to make it 348. This was done so as to accommodate the problem of incomplete responses and possible cases of attrition due to one factor or the other.

3.5 Quantitative Data Sampling Technique

Multistage sampling techniques involving four-stages were used to select respondents for the study.

Stage 1: Stratification of the schools in the Local Government Area was done based on public and private Schools (see appendix 1).

6 schools were proportionally allocated selected to participate in the study out of the 11 secondary schools in the LGA (50% of the schools that met the inclusion criteria were used for this study). Using proportionally allocation base on selecting 2 and 4 schools (see appendix11)

Stage 2: In each school, respondents were stratified by arms

Stage 3: Random selection from arms of classes was done using balloting method.

Inclusion and Exclusion Criteria

Day schools that are co-educational (Mixed School) and comprising of Senior and Junior Schools were included in the study, while every school that is not co-educational and not a day school were excluded.

3.5.1: Qualitative Data Sampling Technique

Focus Group Discussions (FGD) were conducted in six schools. Respondents were selected randomly from different classes in the schools. Participants in the FGD were not allowed to participate in the quantitative study. This was done to prevent information bias.

3.6 Instruments for Data Collection

Two instruments were used for the data collection.

(i) Focus Group Discussion Guide.

(ii) Semi Structured Questionnaire.

3.6.1: Focus Group Discussion Guide

The focus group discussion was used to elicit the respondents' view on their knowledge on breakfast, attitude and perception towards breakfast, practice on their breakfast consumption. The focus group discussion guide contained 7 questions to capture respondents' perceived factors that influence their breakfast intake (see appendix III).

3.6.2: Semi-structured Questionnaire

The semi structured questionnaire (see appendix IV) had six sections (A, B, C, D, E, and F) and a total of 50 questions.

Section A: addressed the socio demographic characteristics of respondents.

Section B: focused on knowledge of respondents towards the importance of breakfast

Section C: assessed the attitude of respondents towards breakfast.

Section D: dealt with the perception of respondents towards breakfast.

Section E: documented the practice of breakfast intake among the respondents.

Section F: documented the factors that influences the breakfast intake of respondents.

The questionnaire was self-administered

3.7 Validity and Reliability of the Instrument

3.7.1 Validity

In order to ensure validity of the study instrument, relevant literatures were reviewed with a view to learning about pertinent variables which needed to be measured in this study before developing the questionnaire for the main study. The questionnaire was also subjected to scrutiny by my supervisor and experts in the fields of health promotion and education.

3.7.2 Reliability

The instruments for data collection were pre-tested among students in a school in Ibadan North-West LGA within Ibadan metropolis. The questionnaire was pre-tested on 35 students (that is 10% of the sample size) while the two (2) Focus Group Discussion was pre-tested with other group of students which were not given the questionnaire. Necessary corrections were made following the pretest exercise such as:

- Questions 6-9 (parents' occupation and their level of education) in the socio demographic section was changed from closed ended to open ended.
- Question 18 (Breakfast can reduce behavioral problems) was reframed because the students did not understand what behavioral problems were.
- An additional question was included in section B of the questionnaire (Cereals and Beverages are not the only food for breakfast).
- Question 34 (If you do not have your breakfast at home, when is your first meal of the day?) was reframed to a close ended question (Where do you take your breakfast?)

Cronbach's Alpha co-efficient analysis was used to determine its reliability. The reliability co-efficient was 0.83, thus confirming its high degree of reliability.

3.8 Data collection process

The data was administered and collected by the researcher and a research assistant. The research assistant was trained to ensure that she had adequate understanding of the tool prior to the commencement of data collection. The training focused on the objectives of the study, the sampling process, the ethical guidelines guiding the study. The data collection was carried out within a period of four weeks between the hours of 9am and 2.30pm. A total of 348 copies of the questionnaire were administered. The data collection process involved the following steps:

1. Introduction of the researcher and the presentation of the ethical approval to conduct the study were showed to each school principals.
2. A research assistant was recruited to help in the process of data collection. The research assistance was trained on adhering to all ethical provisions guiding the study
3. Proper explanation about the study was given to the students and those that participated were told that their responses would be kept confidential.
4. Administration of the questionnaire to the participants by the researcher and the research assistant.
5. Collection of completed copies of the questionnaire and a quick spot check for completeness.
6. Six (6) focus Group discussions was conducted among other group of students that were not selected for the questionnaire and these sessions were facilitated by the researcher and research assistant with the aid of a focus group discussion guide. Respondents were grouped according to sex and class hence three (3) sessions of focus group discussions were conducted for males and same for females and each group contained a minimum of eight (8) persons and a maximum of ten (10) persons. The tape recorder and audio-tapes were used for the interview and each interview took between 40 and 45 minutes. After each session, the audio-taped interview was replayed, carefully listened to and transcribed.

3.9 Data Management and Analysis

The Focus Group Discussion findings were transcribed and a report of each was written. These reports were then analysed thematically.

The questionnaires were properly checked on the field for necessary corrections were necessary. A coding guide was developed after the responses were properly checked. Students' knowledge and attitude were measured using 10-point scale each, while 12-point and 18-point scales were used to measure practice and perception respectively. Each correct answer was assigned two scores for each while each wrong answer was assigned zero. Scores that is less than 8, equal to and greater than 8 were classified poor and good knowledge respectively. Scores less than 8 and greater than 9 were classified as negative scores for attitude and perception respectively. Scores greater than 12 were classified as good practice. The questionnaires were coded and entered into

the computer using the serial number written on each questionnaire. A template was designed on the statistical products and services solution (SPSS version 15.0) software for entry of the coded data and analysis. The data entered into the computer were subjected to descriptive and inferential statistical analysis. This helped to generate frequency data and tables, run Chi-square and logistic regression at 95% confidence interval and a p value of 0.05. Finally, information obtained were summarized and presented in tables and charts.

3.10 Ethical Considerations

The study was conducted in accordance to the ethical norms concerning the use of participants in the research. Ethical approval was obtained from Oyo State Ethical Review Committee (see Appendix III). Permission was obtained from school authorities of the schools that participated in the study. Participants were informed that the focus group discussions would be recorded to facilitate analysis and they were also informed that participation is voluntary. All information provided were kept confidential and used for research purpose only. The data collected were protected to prevent loss and unauthorized access to them.

CHAPTER FOUR

RESULT

4.1 Socio demographic characteristics of respondents

The results in table 4.1 show the socio demographic characteristics of respondents. There were more female respondents (50.6%) than male (49.4%). The age of the respondents ranged from 8-19 years with a mean age of 14.1±2.0 years. Majorities (66.7%) of them were from public schools, and more (58.0%) were in senior secondary class (SS). The respondents were mainly from the Yoruba tribe (86.2%) and over half of them 55.2% were Christians. Most of their mothers (66.6%) and fathers (48.9%) were traders. However, a few reported that their mothers (8.0%) and fathers (11.7%) were dead. Of those (320) whose mothers were alive, 49.1%, and 43.8% reported that their mothers had secondary and tertiary education respectively while only 2.8% had no formal education. One hundred and sixty two of the 307 respondents, whose fathers were living, reported they have tertiary education, 42% had secondary education and only 2.9% had no formal education. Majorities (80.7%) of the respondents' parents were living together, and most (72.7%) were from monogamous family. Majority (84.4%) live with both parents, 9.5% live with a single parent, 5.5% live with other relatives and 0.6% live alone.

Table 4.1 Socio demographic characteristics of respondents (N=348)

Variables	Frequency (N)	Percentage (%)
Sex		
Male	172	49.4
Female	176	50.6
Age		
8-14	180	51.7
15-19	168	48.3
Religion		
Islam	156	44.8
Christianity	192	55.2
Class		
Junior Secondary (JS)	146	33.3
Senior Secondary (SS)	202	66.7
Family Type		
Monogamous	253	81.1
Polygynous	59	18.9
Mother's Occupation		
Trader	229	66.6
Civil servant	24	7.0
Professionals	39	11.3
Teaching	29	8.4
Artisan	23	6.7
Father's Occupation		
Trader	163	48.7
Civil servant	45	13.4
Professionals	50	14.9
Teaching	19	5.7
Artisan	58	17.3

4.2 Knowledge of respondents' towards breakfast

Majority (97.7%) of the respondents had good knowledge of breakfast as the first meal of the day; while (2.3%) had poor knowledge on the definition of breakfast. Over half (74.4%) disagreed that breakfast was not the important meal of the day, and less than half 30.2% of them reported that the ideal time for breakfast is taken between 6:00a.m and 9:00a.m. Most (79.9%) of them did not agree that cereals and beverages are the only ideal food for breakfast, and 83.3% believed breakfast can reduce some health problems like ulcer while others (16.7%) did not. Of all respondents, 267(76.7%) of them agreed that eating breakfast may reduce hunger later in the day, and 89.3% believed that people who take breakfast have more nutritional intake than those who do not. Less than half (31.3%) of the respondents says skipping breakfast can aid in weight gain while the others (68.7%) disagreed but majority (72.4%) of them agreed that breakfast should not just be taken when one is hungry. Details are presented on Table 4.2.

Table 4.2 Knowledge of respondents towards breakfast (N=348)

Variables	Frequency (N)	Percentage (%)
Cereals and beverages are not the only ideal food for breakfast		
Yes*	278	79.9
No	70	20.1
Breakfast can reduce some health problems like ulcer		
Yes*	290	83.3
No	58	16.7
People who take breakfast have more adequate nutrients intake		
Yes*	311	89.4
No	37	10.6
Eating breakfast may reduce hunger later in the day		
Yes*	267	76.7
No	81	23.3
Skipping breakfast can aid in weight gain		
Yes	109	31.3
No*	239	68.7
Breakfast should only be taken when one is hungry		
Yes	96	27.6
No*	252	72.4

*Correct answer

The result in Figure 4.1 below shows the respondents mean knowledge score of 7.6±2.3 using a 10 point scale. Majority (77.0%) of the respondents had good knowledge of breakfast while those with poor knowledge score were 23.0%. The knowledge grade of respondents on breakfast was compared using their socio-demographic characteristics. More males (72.7%) tend to have good knowledge of breakfast than the females (60.8%). Respondents' whose father has only primary education (85.7%) had good knowledge of breakfast than those whose fathers had tertiary education (76.5%), secondary education (54.6%) and no formal education (33.3%).

In focus group session held, majority of the students had a clear understanding of the term "Nutrition" and its importance and this help them to have good knowledge towards the intake of breakfast consumption from their discussions; likewise, some of the respondents still do not agree is breakfast is the most important meal of the day. Furthermore, the students were able mention the time they consume their breakfast. Culturally, in Nigeria, there is no specific time that allotted to take breakfast but rather it should be consumed before noon time. Below are some of their findings:

"I think breakfast is the mast important meal because when you eat breakfast, it will keep tour body warm maybe something that is hot even throughout the day and it should be the energy given food".

"breakfast should be consumed between these times 7:00a.m", "8:00a.m", "8:30a.m", "at least 9:00a.m"

Figure 4.1 Knowledge grade categories (N=348)

4.3 Attitude of respondents towards breakfast

Majority of the respondents (81.9%) agreed that breakfast is important while 86.5% encouraged breakfast consumption. Eighty three percent of the respondents said they do not hate to eat breakfast and (69.5%) disagreed that they would rather have snacks than to eat breakfast. More than half 59.8% of the respondents did not agree that breakfast was required for effective teaching in the class. The respondents mean attitudinal score of 7.6±2.3 using a 12 point scale. (See table 4.3).

Table 4.3: Attitude of respondents towards breakfast (N=348)

Variables	Frequency (N)	Percentage (%)
Think breakfast is important		
Yes	285	81.9
No	63	18.1
Encourage breakfast consumption		
Yes	301	86.5
No	47	13.5
Hate eating breakfast		
Yes	289	83.0
No	59	17.0
Would rather have snack in the morning than eat breakfast		
Yes	242	69.5
No	106	30.5
Do not require breakfast for effective attention in class		
Yes	208	59.8
No	140	40.2

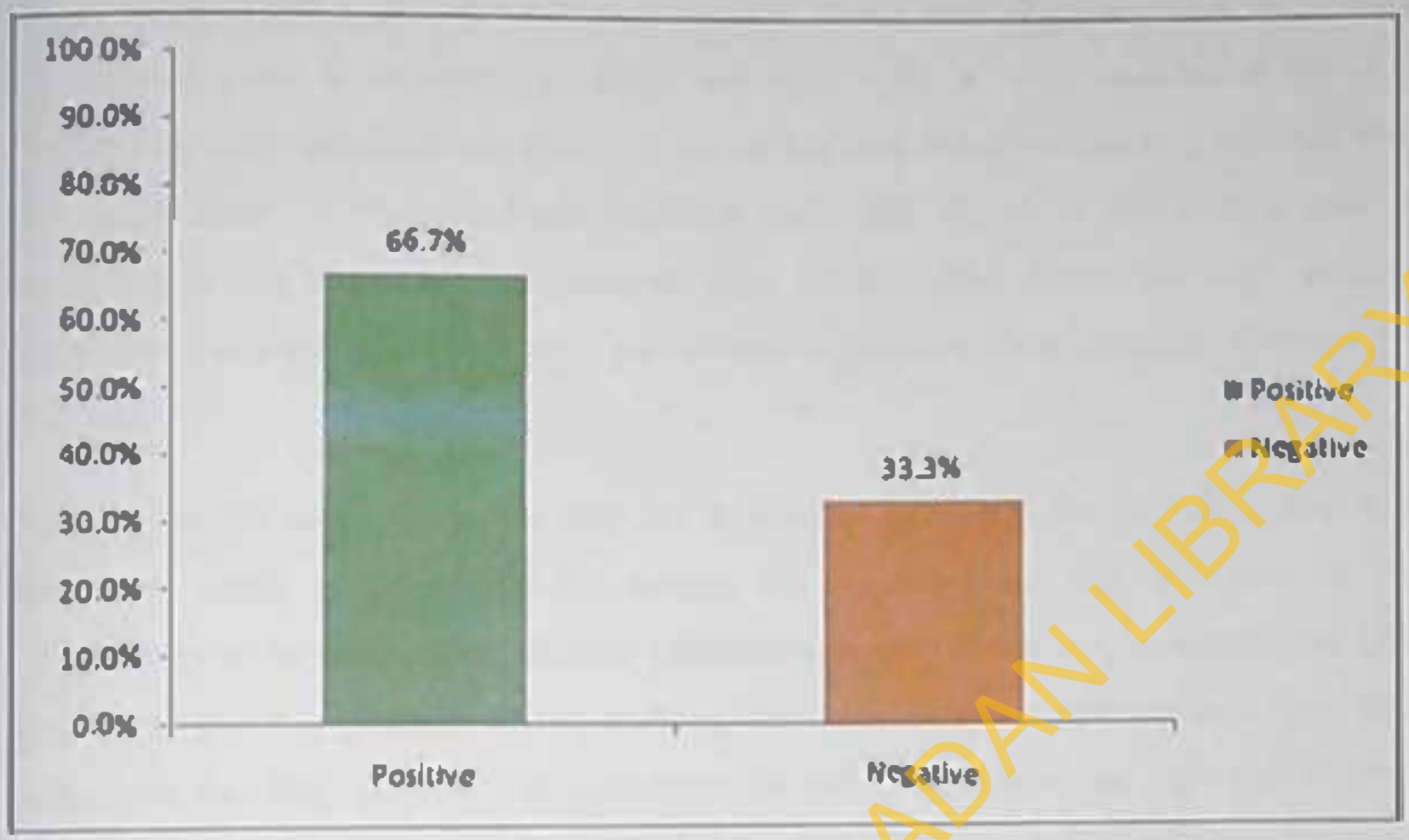


Figure 4.2: Respondents' Attitude towards breakfast (N=348)

4.4 Practice of respondents towards Breakfast

Respondents listed types of food such as rice, bread and egg they took that morning the questionnaire was administered to them (see table 4.4). A large number of the respondents (84.2%) eat their breakfast regularly; 82.5% do not skip breakfast while 17.5% do. Majority of the respondents 72.1% take their breakfast early and 89.4% of the respondents had their breakfast on the day the questionnaires were administered. From the total number of the respondents that ate their breakfast (311), 89.4% of them ate their breakfast between 6:00a.m to 9:00a.m.

Majority of the respondents (85.3%) ate foods that are ideal for breakfast like cereals and beverages while 14.7% of the respondents do not eat foods that are ideal for breakfast. 191(54.9%) of the respondents eat their breakfast at home, 30.2% eats in school (see table 4.5). It was found out that majority of the students who attend private schools eats their breakfast in school; on the other hand 4.3% of students in the public schools eat on their way to school. The respondents mean practice score of 8.6±2.7 using a 12 point scale. From the list of foods mentioned by the respondents, majority of the students consume foods that contain carbohydrates. Other classes of foods consumed are protein, fats and oil, vitamins.

From the FGD reports majority of the discussants mentioned the types of meals that can be taken as breakfast and these were in accordance to the ideal meals that can be taken as breakfast. Below these were the foods mentioned

"Rice with plantain"

"Bread and moinmoin"

"Aha some of us like to eat amala or eba in the morning"

"Beans and fried plaintain"

"Yam"

"Yam cassava"

Table 4.4a: List of food respondent took in the morning (N=309)

Variables*	Frequency (N)	Percentage (%)
Rice	102	33.0
Rice and dodo	87	28.2
Bread and Butter	34	11.0
Rice and Beans	29	9.4
Yam	16	5.3
Bread and Egg	8	2.6
Beans	7	2.3
Spaghetti	6	1.9
Pap	5	1.6
Snacks	5	1.6
Indomic	4	1.3
Cornflakes and Egg	2	0.6
Golden Morn	2	0.6
Fruits	1	0.3
Yam flour and melon soup	1	0.3

*Multiple responses were present

Table 4.1b Classification of food taken for breakfast into food groups

Classification of food	Examples of food
Carbohydrates	Rice, Yam, Bread, Spagetti, dodo, Yam Flour, golden morn, indomine, pap, amala, eba
Protein	Beans, Egg, beans cake, plantain
Fats and Oil	Butter
Vitamins	Fruits

Table 4.5 Practice of respondents towards breakfast **(N=348)**

Varinbles	Frequency (N)	Percentage (%)
Eat breakfast regularly?		
Yes*	293	84.2
No	55	15.8
Skip breakfast always?		
Yes	61	17.5
No*	287	82.5
Took breakfast late		
Yes	97	27.9
No*	251	72.1
Took breakfast this morning		
Yes*	311	89.4
No	37	10.6
Where did you take your breakfast		
At home	191	54.9
On the way to school	15	4.3
In school	105	30.2
Not applicoble	37	10.6
Time breakfast was taken		
6-9a.m.	300	86.2
After 9am	48	13.8

4.5 Perception of respondents towards breakfast

Majority of the respondents (82.2%) disagreed that skipping breakfast is a good habit. Eighty three point nine took breakfast to maintain normal body weight; and 16.1% perceived that taking breakfast does not help to maintain normal body weight. A large percentage of respondents (86.2%) disagreed that breakfast was not important; and 66.7% disagreed that skipping breakfast makes ones level of concentration become high while the others did not. Eighty point five percent of the respondent agreed that breakfast has positive effect on health while 19.5% disagrees; also, majority of the respondent 93.7% agreed that breakfast is important to supply the energy we need while 6.3% disagreed breakfast is not important.

Less than half 29.9% agreed that skipping breakfast makes one sleepy in class and 77.9% of the respondent disagreed that taking breakfast does not make them gets hungry easily while 22.1% says they gets hungry easily. Over half of the respondents 54.9% that skipping breakfast makes them loose weight while 45.1% of the respondents agreed that skipping breakfast makes them lose weight. The respondents mean perception score of 12.9±2.9 using a 18 point scale.

On the aspects of consequences of not consuming breakfast, the respondents gave various consequences of not consuming breakfast.

"That person will not have energy and the person will not be able to perform the normal activities because the person will feel very dizzy".

"It may weaken someone".

"It may lead the student to be stealing when the students have not taken breakfast. student can steal in the school".

"Lack of concentration when the teacher is teaching"

"The person will not be able to work and it can cause ulcer"

"The number one thing is kwashikor because the most food we normally eat is carbohydrate so if there is no sufficient food of carbohydrate it will be kwashikor".

Table 4.6 Perception of respondents towards breakfast **(N=348)**

Variables	Frequency N)	Percentage (%)
Skipping breakfast is a good habit		
Yes	62	17.8
No	286	82.2
I take breakfast to maintain normal body weight		
Yes	292	83.9
No	56	16.1
Breakfast is not important		
Yes	48	13.8
No	300	86.2
When you skip breakfast your level of concentration becomes high	239	68.9
Yes	109	31.3
No		
Breakfast has positive effect on health		
Yes	280	80.5
No	68	19.5
Breakfast is important to supply the energy we need		
Yes	326	93.7
No	22	6.3
Skipping breakfast makes me sleepy in class		
Yes	104	29.9
No	244	70.1
Taking breakfast makes me gets hungry easily		
Yes	77	22.1
No	271	77.9
Skipping breakfast makes me lose weight		
Yes	157	45.1
No	191	54.9

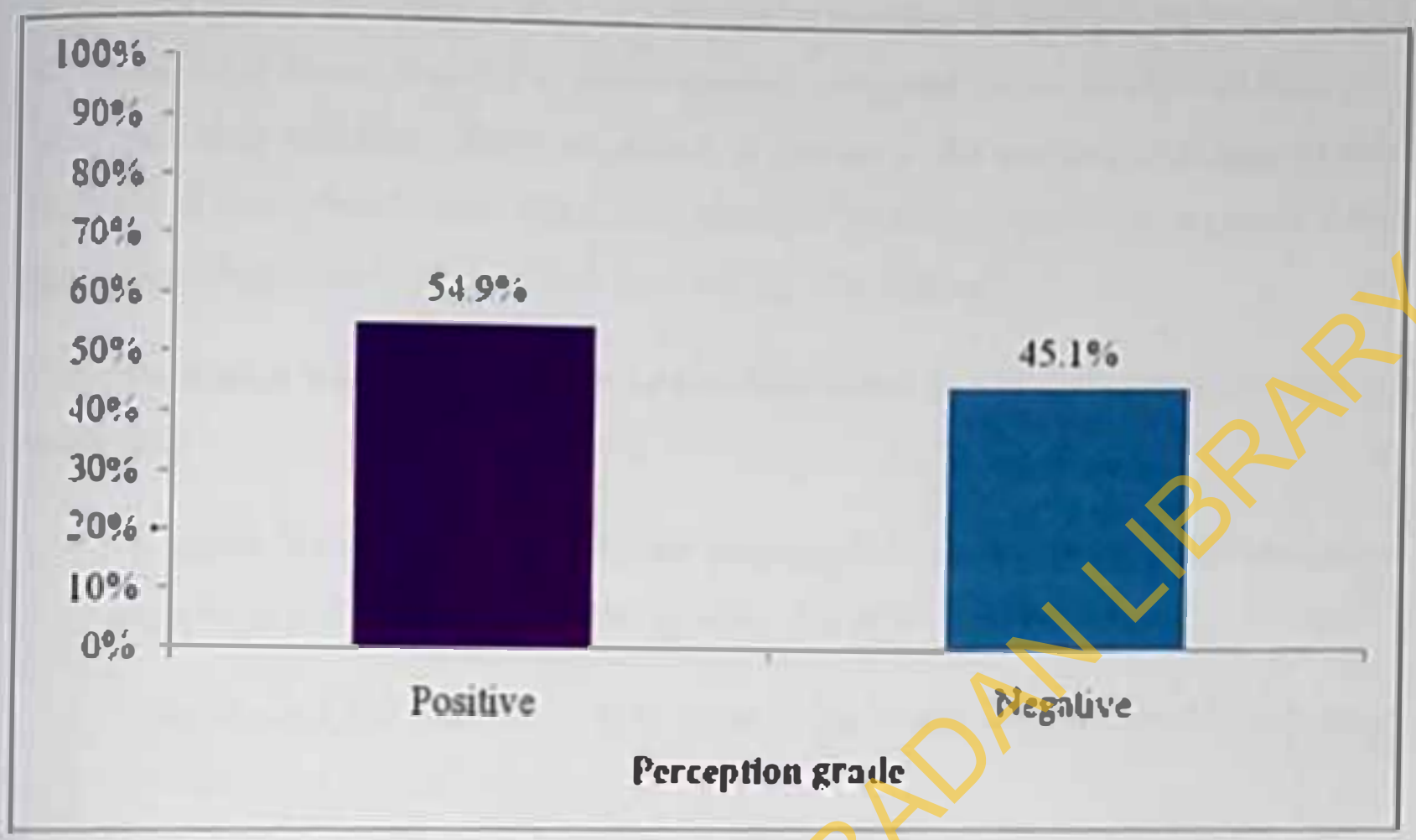


Figure 4.3: Perception of respondents towards breakfast (N=348)

4.6 Factors affecting the intake of breakfast

More than half of the respondent 55.5% disagreed that they would not get late to school if they ate breakfast at home; majority of the respondent disagreed that their mothers does not have time to prepare their breakfast . Fifty one point four percent of the respondent disagreed that the distance of their school would affect their taking of breakfast while 48.6% agreed that the distance of their school would affect their taking of breakfast.

The respondents were able to explain further about other factors that enable students to consume breakfast.

> *"Factors like when there is sufficient beverages food items at home, its encourage, it encourage parents to provide the breakfast for their children".*

> *"I think when you wake up early in the morning so that you will be able to prepare one or two things for your breakfast".*

On the other hand, the students explained other factor that does not enable students to consume breakfast

> *"if there is famine in such land"*

> *"Ignorance of our parents to cook early in the morning"*

> *Illiteracy*

> *If the students does not have appetite*

Furthermore, it was discussed that family tradition, family size are one of the major factor that influences not consuming breakfast by the students.

> *"family tradition can also affect the intake of breakfast because some families usually say that em like they do not usually eat early in the morning because it usually cause stomach pain for the child that the child should not eat early in the morning but rather should come back and eat his /her food".*

> *"for instance now, we muslims we use to take our breakfast after the fajr prayer, so we will come back home, prepare the meal and carry it to school".*

"when we do fasting and prayer in the Christian way too"

Family size can also affect the intake of breakfast because by the process if there are large children in a particular family; it can lead to shortage of food for the children

"I think the size of the family can cause it too because in an extended family now and they have chn they normally ate five cups of rice and there is two cups at home, so how would they eat their breakfast".

The following suggestions were given by the respondents as regards to the intake of breakfast consumption:

"Hello my fellow students, breakfast is important because you will pay attention in the class".

"The parents should provide for needed things for the children adequately".

"The government should provide job for whn the parents so that they can feed their children".

"There should be early preparation of food and chn the child if the food is not prepared early, the child can take it to school and eat it immediately he/she gets to school".

"We must be good students and children at home for us to get what we want from our parents".

"My own view is that the government should reduce tax on food on the farmers so that they can provide more food for the family".

"The government cannot do anything about breakfast because they cannot go every home in the state I think my own is on the parents that they should encourage their children to take breakfast if they do not take breakfast, they will not concentrate on what the teacher is teaching in the class so I think it is the parents that should be encouraged".

4.7 Test of Hypotheses

Hypothesis 1:

There is no association between mother's, level of education and their knowledge towards the importance of breakfast (table 4.71).

The result in table 4.71 showed a significant association between mothers' level of education and their knowledge towards the importance of breakfast ($p<0.05$). Respondents' whose mother has no formal education are more likely to have poor knowledge towards the importance of breakfast than mothers who had tertiary education. The null hypothesis was therefore rejected and the alternative that there is a significant association between mothers' level of education and their knowledge towards the importance of breakfast (O.R: 6.03, C.I. 1.25-32.38) (Table 4.8).

Table 4.7.1 Association between respondents' mothers level of education and knowledge of breakfast consumption

Mothers' educational status	Knowledge of breakfast consumption		Total Freq. (%)	Chi-square (χ^2)	P-Value
	Poor Freq. (%)	Good Freq. (%)			
Informal	5(71.4)	2 (28.6)	7(100.0)	8.385	0.03
Primary	2 (14.3)	12 (85.7)	14 (100.0)		
Secondary	41(25.8)	118(74.2)	159 (100.0)		
Tertiary	41(29.3)	99(70.7)	140(100.0)		

Hypotheses 2:

There is no association between fathers' level of education and their knowledge towards the importance of breakfast (table 4.7.2).

From the chi square, the result showed that there is no association between the fathers' level of education and the knowledge of breakfast consumption. The p value is >0.05. Therefore, the null hypotheses is accepted.

Table 4.7.2 Association between respondents' father level of education and knowledge of breakfast consumption

Fathers' Educational Status	Knowledge of breakfast consumption		Total	Chi-Square (χ^2)	P-Value
	Poor Freq. (%)	Good Freq. (%)	Freq. (%)		
Informal	5 (55.6)	4(44.4)	9(100.0)	3.495	0.32
Primary	2 (28.6)	5 (71.4)	7 (100.0)		
Secondary	35 (27.1)	94(72.9)	129 (100.0)		
Tertiary	44 (27.2)	118(72.8)	162(100.0)		

Hypotheses 3:

There is no association between the type of school and the knowledge of respondents towards the importance of breakfast (table 4.7.3)

There is no association between type of school of the respondents and their knowledge towards the importance of breakfast (table 4.7.3). From the chi square, the result showed that there is no association between the type of school and the knowledge of breakfast consumption. The p valve is >0.05. Therefore, the null hypotheses is accepted.

Table 4.7.3 Association between respondents' type of school and knowledge of breakfast consumption

Type of school	Knowledge of breakfast consumption		Total	Chi-Square (χ^2)	P-Value
	Poor Freq. (%)	Good Freq. (%)	Freq. (%)		
Public	25 (10.8)	207 (89.2)	232(100.0)	0.139	0.70
Private	11(9.5)	105 (90.5)	116 (100.0)		
Secondary	41 (25.8)	118(74.2)	159 (100.0)		
Tertiary	41 (29.3)	99(70.7)	140(100.0)		

Table 4.8: Regression Analysis

Factors that influence respondents' knowledge towards the importance of breakfast consumption

Variables	P-value	Odd ratio (95%CI)
Mother's Level of Education		
No formal Education *	0.36	6.03 (32.38-1.12)
Primary Education	0.24	0.40(1.88-0.08)
Secondary Education	0.49	0.83 (1.39-0.50)
Tertiary Education **		

**Reference category

*Significance category

CHAPTER FIVE

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Socio – demographic characteristics of the respondents

In Nigeria, the broad goals of secondary education are geared to prepare the individual for useful living within the society and to progress to higher education (Federal Government of Nigeria, 2004). The school at this level is established so that students can learn in order to be able to transmit knowledge from one generation to another for the continuity and well-being of the society. The age of the respondents ranged from 8-19 years. Majority of them were from public schools, and more were in senior secondary class (SS).

5.2 Knowledge of breakfast

Findings from this study revealed that the students had good knowledge about breakfast. Also, it was revealed that the students were able to agree that breakfast is regarded as the first meal of the day. This is in line with the studies of researchers who defined breakfast as the first meal of day (Marika 2003, Pollit and Matthew 1998, Timlin and Pereira 2007). Although, majority of the students do not know the ideal time for breakfast; various studies have not revealed the ideal time students take breakfast but rather, researchers has stated that breakfast should be taken between 6:00a.m and 9:00a.m on weekday while that of weekends should be taken between 6:00a.m and 11:00a.m (Barton et al., 2005; Timlin and Pereira 2007, Aranceta et al., 2001). As reported by the students, breakfast helps to reduce hunger in which, they would be able to concentrate well in the class. In support to this, Rampersaud et al., (2005) discussed from their findings that breakfast intake alleviates hunger, which can result in a much more alert student. Furthermore, majority of the students were able to agree that breakfast intake has nutritional value. Similar to this, (Kleinman et al., 2002; Rampersaud et al., 2005; Wilson et al., 2006), explained in their various studies that the consumption of a good-quality breakfast has been shown to be positively correlated with nutrient uptake. Also, data from the Children's Nutrition Survey (Ministry of Health, 2003) found out that children that take breakfast has better nutrient uptake.

From the findings of this study, most of the students revealed that skipping breakfast does not aid weight gain. Contrary to this, a study from the United States conducted by Berkey et al., in (2005), reported that children who never ate breakfast were heavier than those children who ate breakfast nearly every day.

5.3 Attitude of respondents towards breakfast

The good knowledge the students had an influence in their attitude towards breakfast. Furthermore, the students had a positive attitude towards breakfast intake. Majority of the students disagreed that they would rather have snacks in the morning than for them to eat food. Contrary to this, a study that was conducted among the children ages 9-11 years old, revealed that the children had a negative attitude towards the intake of breakfast and this is influenced by taking unhealthy items like snacks, sweets which would not allow them to take breakfast (Graham et.al., 2006).

Furthermore, majority of the students does not agree that breakfast is required for effective teaching. Contrary to this study, a controlled study carried out in Minnesota found out that primary aged school children who were provided with a nutritious breakfast showed that they had "better concentration, increased alertness and energy, and a decrease in stomach aches and headaches" (Wahlstrom and Begalle, 1999). This means that the intake of breakfast has a positive effect on learning.

5.4 Perception of respondents towards breakfast

From this study, the students also had good perception towards breakfast; although, from the sex perceptive, majority of males had good perception towards breakfast more than females. This is because that boys like to eat food to keep them growing while the girls does not like food so as to maintain a fine figure. Similar to this study, Oladapo et al., (2014) found from their studies that quite a high number of female participants skipped breakfast more than male counterpart. they further stated that perhaps the female are more concern with their body image, that is, fear of being overweight and obese would prevent them from taking breakfast. This is also similar with the previous studies that linked meals skipping to concern about body image among adolescent girls (O'Dea and Caputi 2001).

Majority of the respondents also agreed that breakfast is important for the energy they need to carry out their daily school activities although majority of them does not agree with the statement that skipping breakfast would make them sleep. This is in line with a study conducted by Pollitt (1998) that stated that extending the overnight fast by missing breakfast is thought to affect cognitive function through decreased blood concentrations of glucose, insulin and other neurotransmitters and this would affect the student.

5.5 Breakfast Consumption Practice

This study revealed that slightly more than half of respondents had good practice towards breakfast. Similar to this findings, a study that was conducted among the adolescents found out that the frequency of regular breakfast consumption among these adolescents in their study is in agreement with other European studies in adolescents, indicating that many do not have appropriate breakfast habits (Aranceta, Serra-Majem, Ribas, and Perez-Rodrigo, 2001; Bruno-Ambrosius, et al., 2005; Keski Rahkonen, et al., 2003; Lien, 2007; Matthys et al., 2007; Sjo¨berg, et al., 2003; Vereecken et al., 2009, Deshmukh-Taskar et al., 2010). Furthermore, the study conducted among undergraduates in university in Kuala, Malaysia showed that 29.2% skipped breakfast (Moy, Johari, Ismail, Mohad and Tie 2009). Tanaka, Mizimo, Fuakuda, Shigihara and Watanbe (2008) showed that 35.4% skipped breakfast meal, 31.5% of adolescents skipped breakfast in a study conducted by Priya, Theresa, Carol, Debra, John and Susan, (2010), the prevalence of breakfast skipping among students studying traditional Chinese medicine and Mongolian medicine was 22.7% (Sun, Yi, Liu, Wu, Bian, Eshita, Li, Zhang and Yang 2013), while it was 44.9% among undergraduates of Federal University of Agriculture Abeokuta, Nigeria (Adeshina, 2013). Contrary to these findings, a study that was conducted among university students in Nigeria found out that slightly above average (52%) skip breakfast (Oladapo et.al, 2014). From the total number of the respondents that ate their breakfast 89.4% of them ate their breakfast between 6:00a.m to 9:00a.m.in line to this, the ideal time for breakfast should be taken within two hours of waking, any food and/or beverage consumed between 5 a.m. and 9 a.m.; no later than 10:00 a.m (Barton, Eldridge and Thompson, 2005; Timlin and Pereira 2007; Arancela et al., 2001; Wilson et al., 2006). Although, majority of the respondents ate foods that are ideal for breakfast like cereals and beverages never the less, theses respondents do not know the types of food that are ideal for breakfast. The type of food commonly eaten is cassava based foods were consumed by the majority of the respondents in the school. This type of positive connection between the staple foods commonly consumed by school children and the major agricultural produce of the community has been reported in previous study (Olusanya, 2010). Surprisingly however, rice is the food commonly eaten by the respondents' for breakfast in both the public and private schools; is probably due to the ease of preparation. It also saves time. Hence most families found it convenient to prepare and serve for breakfast. This is similar

to other studies carried out in Ogun State among students who attend public schools and private school (Olusanya 2010).

5.6 Factors affecting Breakfast Consumption

Factors affecting the intake of breakfast play a major role as a whole in the health and nutritional status of students in general. From the study, the factors that promoted breakfast intake of these students were that their mothers has time to prepare their breakfast; this means that their mothers were either working class mothers or they were housewives. For some of the respondents that their mothers do not have the time to prepare their meals for them collect money and they buy their food on their way to school. This is in line with the result of a study that showed that urban mothers gave their children street foods (Egal and Lopriore 2005). In line with these findings, a study that was carried out in Nigeria found out that mothers that live in an urban setting were mostly civil servants who had demanding jobs that kept them away from homes rather than rural mothers who are housewives; rather has time to prepare breakfast for their children (Onyechi and Ugwumadi 2006).

Also from this study, majority of respondents said that that their parents are financially buoyant. This indicated that majority of the respondents parents have money to cater for their children in terms of the food. In addition to this, Egal and Lopriore (2005) indicated that 90 % of the foods consumed in urban areas are mostly purchased and that the parents of these children earn a living. Most of the respondents disagreed that timing was not a factor that affect their intake of breakfast. Contrary to this findings, Sweeney and Ruszczynski, (2005) and Neumark et al., (1999), found out that most students does not like to take breakfast because they do not want get late to school and also, they might not like the food that is being served.

Other reasons the respondents gave that would affect the intake of breakfast were more of personal choice such as if there is famine in such land, ignorance of our parents to cook early in the morning, illiteracy, some of these respondents does not like to eat early in the morning, no appetite or overslept, family size. Furthermore, Onyechi and Ugwumadi (2009) also stated that poverty is one of the factors that contributed to the skipping of breakfast among the rural and urban children. Levin et al, (2008) also stated that some children, especially adolescents, say they're not hungry when they wake up.

The reasons cited by the students for skipping breakfast were inadequate feeding allowances or pocket money and busy schedules. Inadequate monthly allowances may lead to missed meals and intake of low nutritional value foods which may in turn impair cognitive function. Rampersaud et al. (2005); Pollitt and Mathews (1995) assert that breakfast consumption improves school attendance and enhances the quality of the students' diets.

5.7 Conclusion

The importance of breakfast in the cogutive development of students cannot be over emphasized as several studies have acknowledged it importance in the growth and cognitive development of young children. Findings from this study have documented good knowledge on the importance of breakfast. And also, the students had positive attitude towards breakfast consumption which influenced their intake pattern.

The practice of breakfast consumption among the students in the study was positive. Sustainability measures need to be put in place in order for them to continue in the intake of breakfast; for the other students who do not have good practice, public enlightenment programs is needed. The findings of this current study suggest that parents' financial buoyancy, having time to prepare breakfast may influence their intake of consuming breakfast; on the other hand, students were able to explain some factors such as family tradition and cultural belief in terms of religion are factors that affect their intake of breakfast.

There is need for awareness through public enlightenment progmms on the sustainability of breakfast consumption among the students and to have an increase in the consumption of breakfast.

5.8 Implication to Health Promotion and Education

Findings from this study revealed that the students were not aware that breakfast skipping aids in weight gain. As one of the health promotion strategy, the school has a vital role to play in students' wellbeing. The school environment strongly impacts the behavior, and thus the health and general wellbeing of the students. This can be achieved by making sure that comprehensive health education is incorporated into their school curriculum; by so doing, the teachers would be able to impact this nutritional education knowledge into the students; this should include various types of food composition. Also, the teachers should teach the students on how to communicate to their parents and inculcate in them to have a positive attitude towards breakfast consumption in their various homes.

Furthermore, advocacy can be done to the parents' and teachers through parents' teacher association (PTA) forum. This can be achieved through short health talks whereby, nutritional experts can be invited. Training can be done among the teachers and parents because they are like change agents which would impart nutritional knowledge to the students. This nutritional information given to the students, can lead to healthy choices as pertaining to the food they eat for breakfast.

Although, majority of the students had good practice towards breakfast consumption; the school board need to make breakfast consumption as part of the school policy. This can be achieved through advocacy to the government to provide free meals in schools. This is important because some of the students who are not privileged to eat at home can be opportune to eat in school. Provision of free meal programs may play a significant role in promoting breakfast intake among young student because it makes them to pay attention in class. To enhance sustainability of this, monitoring and evaluation should be put in place in order to ensure that the provision of these free meals is making an impact in their lives. Also, the provision of these free meals would enhance the involvement of the communities and other non-governmental organization to participate by making donations to the various schools.

The schools should implement policies and set up standard guidelines that they would set for food vendors in order for them to sell food that has nutritional value to the students.

5.9 Recommendations

(1) Encouraging breakfast consumption among secondary school students would enable them to have good practice towards breakfast consumption. This can be done by putting in place programs that would be of benefits to the students; through this, students who are not aware about the importance of breakfast can benefits and they too can also have a positive attitude which would affect their practice.

(2) Parents should be educated on the benefits and importance of breakfast their children. This should include what makes a nutritious breakfast to ensure that the children are not only fed breakfast but also one that enhances their nutritional status.

(3) Parents teachers associations in schools would help in reinforcing the attitude and practice of breakfast consumption among the students and this would help in the sustainability of the practice.

(4) Governments' intervention is needed by creating more jobs for people.

(5) Government should try and provide free breakfast meals to the students in their various schools.

5.10 Suggestions for Further Studies

The knowledge of mothers towards provision of breakfast is very important. Therefore, there is need for further research targeting the knowledge of mothers towards the provision of adequate breakfast intake of their children.

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APPENDIX I

Table 3.1: Stratification of Schools for the study

	School Type	Total Number of School	Proportion of School	Total Number of School Selected for the Study
1	Public	8	$\frac{8 \times 6}{11} = 4.3$	4
2	Private	3	$\frac{3 \times 6}{11} = 1.6$	2

APPENDIX II

Table 3.2: Name of school and number of respondents for the study (N=348)

	School Type	Name of school	Class	Numbers of Students in each schools	Proportion of respondents	Total (N)
1	Public	A	Junior	502	$\frac{502 \times 232}{5525}$	21
			Senior	835	$\frac{835 \times 232}{5525}$	35
2		B	Junior	451	$\frac{451 \times 232}{5525}$	19
			senior	866	$\frac{866 \times 232}{5525}$	36
3		C	Junior	494	$\frac{494 \times 232}{5525}$	21
			Senior	813	$\frac{813 \times 232}{5525}$	34
4		D	Junior	398	$\frac{398 \times 232}{5525}$	17
			Senior	1164	$\frac{1164 \times 232}{5525}$	49
5	Private	E	Junior	200	$\frac{200 \times 116}{548}$	42
			Senior	148	$\frac{148 \times 116}{548}$	31
6		F	Junior	120	$\frac{120 \times 116}{548}$	26
			Senior	80	$\frac{80 \times 116}{548}$	17

*Total number of students in schools: Public – 5525

Private– 548

APPENDIX [I]

FOCUS GROUP DISCUSSION

My name is Adedeji Ifeoluwa, a Postgraduate student of the Department of Public Health, College of Medicine, University of Ibadan. I am carrying out a study on the Factors Influencing Breakfast Intake among Secondary School Students in Ibadan North-East.

I would appreciate your cooperation in discussing the issues below. I want you to allow me to make use of the tape recorder in case I forget anything when writing it down.

I want you to know that everybody has the right to his/her opinion, so there is no right or wrong answer.

Thank you.

Can we please introduce ourselves?

S/NO	QUESTIONS	PROBING QUESTIONS
1.	What is the importance of nutrition to the body?	
2.	Which is the important meal of the day?	
3.	What is breakfast?	Definition of breakfast. What is the ideal time for one to take breakfast?
4.	What is the importance of breakfast?	What are the consequences of not taking breakfast?
5.	What type of meal do students usually take in the morning?	Probe for the types of food that are mostly taken in the morning? When and where should one can take the breakfast, and with whom or who prepares it.
6.	What are the factors that enable or not enable one to take breakfast?	Probe for time of preparation, family income, family size, family tradition.
7.	What suggestions do you have to improve breakfast intake among student	

APPENDIX IV

QUESTIONNAIRE

Introduction

Good day. My name is Adedeji Ifeoluwa, a Postgraduate student of the Department of Public Health, College of Medicine, University of Ibadan. I am carrying out a study on the Factors **Influencing Breakfast Intake among Secondary School Students in Ibadan North-East.** Information obtained from this study will be treated with utmost confidentiality and will be used for strictly research purposes.

Are you willing to participate? Yes No

Thank you,

Date:.....

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. Sex of respondent 1. Male [ ] 2. Female [ ]
2. Age of respondent as at last birthday _____
3. Current class of respondent 1. Junior secondary [ ] Senior secondary [ ]
4. Ethnicity 1. Igbo [ ] 2. Yoruba [ ] 3. Hausa [ ]
5. Religion: 1. Islam [ ] Christian [ ] 3. Traditional [ ]
6. Mother's occupation _____
7. Father's occupation _____
8. Mother's level of education _____
9. Father's level of education _____
10. Parents' marital status 1. Single [ ] 2. Living together [ ] 3.Separated [ ] 4.Widowed [ ]
11. Type of family? 1. Monogamy [ ] 2. Polygamy [ ]
12. Whom do you live with? 1. Single Parent [ ] 2. Both Parents [ ] 3. Relatives [ ] 4. Alone [ ] 5. Surrogate Parent

SECTION B: KNOWLEDGE OF STUDENTS ON BREAKFAST

SN	STATEMENT	YES	NO
13.	Breakfast is the first meal of the day		
14.	Breakfast is not the most important meal of the day		
15.	Breakfast should be taken between 5:00a.m and 12:00p.m		
16.	Cereals and beverages are not the only ideal food for breakfast.		
17.	Any food can constitute for a breakfast		
18.	Breakfast can reduce some health problems like ulcer		
19.	People who take breakfast have more adequate nutrient intakes		
20.	Eating breakfast may reduce hunger later in the day		
21.	Skipping breakfast can aid in weight gain		
22.	Breakfast should only be taken when one is hungry		

SECTION C: ATTITUDE OF STUDENTS TOWARDS BREAKFAST CONSUMPTION

SN	STATEMENTS	AGREE	DISAGREE	UNDECIEDED
23.	I don't think breakfast is important			
24.	I encourage breakfast consumption			
25.	I hate eating breakfast			
26.	I would rather have snack in the morning than eat breakfast			
27.	I do not require breakfast for effective attention in class.			

SECTION D: THE PRACTICE OF BREAKFAST CONSUMPTION AMONG STUDENT

SN	STATEMENTS	AGREE	DISAGREE	UNDECIEDED
28.	I eat breakfast regularly			
29.	I skip breakfast always			
30.	I take breakfast late			

31. Did you take breakfast this morning? Yes No

32. If yes, what time did you take your breakfast? _____

33. What did you eat this morning? _____

34. Where do you take your breakfast? 1. at home ☐ 2. On the way to school ☐
3. At school ☐

35. What do you usually eat for breakfast if you eat on the way to school or arriving at school?

_____

SECTION E: PERCEPTION OF STUDENTS ABOUT BREAKFAST

SN	STATEMENTS	AGREE	DISAGREE	UNDECIDED
36.	Skipping breakfast is a good habit			
37.	I take breakfast to maintain normal body weight			
38.	Breakfast is not important			
39.	When you skip breakfast, your level of concentration becomes high			
40.	Breakfast has positive effects on health			
41.	Breakfast is important to supply the energy we need			
42.	Skipping breakfast makes me sleepy in class			
43	Taking breakfast makes me get hungry easily			
44.	Skipping breakfast makes me lose weight			

SECTION F: FACTORS INFLUENCING EATING OF BREAKFAST BY STUDENTS

SN	STATEMENTS	AGREE	DISAGREE	UNDECIDED
45.	I would get late to school if I eat breakfast at home.			
46.	My mother does not have the time to prepare breakfast for me.			
47.	The distance of my school is far.			
48.	There is no food at home			
49.	I don't usually have appetite in the morning.			
50.	My parents are not financially buoyant.			
51.	I forget to take breakfast because I rush to school			

52. Mention 5 other factors that can affect breakfast intake.

1. _____
2. _____
3. _____
4. _____
5. _____

53. What are the various suggestions you have for improved breakfast intake?

APPENDIX V

TELEGRAMS.....

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref No. .....

All correspondence should be addressed to
the Honourable Commissioner stating
Our Ref No AD 13/ 479/ 214

5th November, 2012

The Principal Investigator,
Department of Health Promotion and Education,
Faculty of Public Health,
College of Medicine,
University of Ibadan.

Attention: Ajiboli Ibukun Abisade

Ethical Approval for the Implementation of your Research Proposal in Oyo State

This acknowledges the receipt of the corrected version of your Research Proposal titled: "Factor Influencing Breakfast Habits of Secondary School Students in Ibadan North East Local Government Area Oyo State Ibadan."

2. The committee has noted your compliance with all the ethical concerns raised in the initial review of the proposal. In the light of this, I am pleased to convey, to you, the approval of committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the committee will monitor, closely, and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of the findings as this will help in policy making in the health sector.

4. Wishing you all the best.

Sola A... (Dr.)
Director, ... & Statistics
Secretary, Oyo State, Research Ethical Review Committee