

**UNIVERSITY OF EDUCATION, WINNEBA
COLLEGE OF TECHNOLOGY EDUCATION, KUMASI**

**ADOLESCENTS FOOD CHOICES AND ITS IMPACT ON THEIR HEALTH STATUS
(A CASE OF STUDENTS IN DADEASE AGRIC. SENIOR HIGH SCHOOLS IN
EFFIDUASE DISTRICT)**

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SEPTEMBER, 2017

**UNIVERSITY OF EDUCATION, WINNEBA
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DEPARTMENT OF HOSPITALITY AND TOURISM**

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**A Dissertation in the Department Of HOSPITALITY AND TOURISM EDUCATION,
Faculty of VOCATIONAL EDUCATION, submitted to the School Of Graduate Studies,
University Of Education, Winneba, in partial fulfilment of the Requirement for the Award
of Master of Technology**

(Catering and Hospitality) Degree

SEPTEMBER, 2017

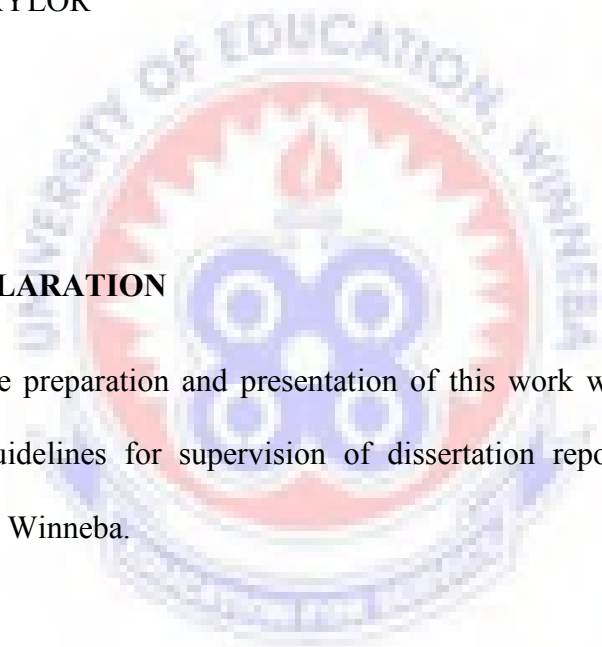
DECLARATION

STUDENT'S DECLARATION

I, Ernestina Efua Taylor declare that this dissertation report, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE..... Date.....

ERNESTINA EFUA TAYLOR



SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work were supervised by me in accordance with the guidelines for supervision of dissertation report as laid down by the University of Education, Winneba.

SIGNATURE:.....Date:.....

DR. MRS. ELLEN OLU

ACKNOWLEDGEMENT

I would like to express my sincere gratitude the almighty God for granting me life and ability to come out with this work and warm appreciation to many people who contributed to the success of this research work. First, I will like to express my warmest gratitude to Dr. Mrs. Ellen Olu my supervisor, for her keen interest, motivation and encouragement as well as efficient, objective, yet positive and friendly criticism that made this work possible. Without her inspiring guidance and continuous motivation, this study could so easily have become a long, meaningless and tiresome assignment.

Next, I want to thank the staff of Dadease Agric Senior High School for their immense support for this study. I also wish to express my heartfelt gratitude to my lovely brothers (Joseph, Michael and Nelson) and mother Ms. Mary Osei for their encouragement and assistance towards my education. Not to be left out of this acknowledgement are Mr. Francis Asare Bediako, Mr. Silas Udia Osabutey for their inspiration and prayers.

Finally, I wish to thank all the resource persons and respondents who willingly offered themselves to be used as tools for the development of this thesis especially Mr. Kenneth Owusu and Mr. Joseph K Taylor for their valuable input into this project. To you all, I say may God richly bless you.

DEDICATION

I wish to dedicate this project to my lovely husband Mr. Kwadwo Obeng Appiah and children (Yaw Nana Baffoe Obeng, Yaa, Serwaa, Leticia and Victoria) for their prayers and support.



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ABSTRACT

Adolescents' stage is usually characterized by a lot of influence in action taken. What to eat, how to eat, when to eat are mostly influence by several factors by the adolescent. Adolescents select and practice a particular eating behaviour base on certain influences when they leave normal environment for places like school. Therefore, the study is aimed at assessing the influences of adolescents' food selection practices and its impact on their health. The target population for the study was all students of Dadease Agric Senior High School. Descriptive survey design was appropriate for the study because it is done by collecting information that will determine or demonstrate relationships and describe situations as they exist. Systematic sampling technique was employed in selecting the respondents for the study. A sample size of 94 students was chosen for the researcher to be able to manage them. Questionnaire was the main data collection instrument used in collecting data for the research. From the analysis of data, the study found out that when students changed their normal environment to a place like school, they select the type of food they like solely by taste without considering the implication. The study also found out that five (5) items namely (Taste, Availability, Economics, Peers and Parental) are the most influential elements that influence adolescents to select the kind of foods they buy or select to eat and eventually leads to health disorders. Impact on adolescents' health status as a result of wrong food choices are (Malnutrition, Menstrual disorder, Infertility and Obesity). Finally, the study recommends that lessons on healthy nutrition practices in school should be added to the curriculum of Senior High Schools, as has been done in some developing countries in order to educate them on what to eat and what not to eat and food vendors on school premises should be encouraged to provide at affordable prices a wide variety of healthy foods such as appealing fresh fruits and vegetables for students to buy. Also at the dining hall fruits and fresh vegetables should be served to students. Students should be regulated on when they should visit their chop boxes as well as not eating after prep.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Adolescent is a period of transition from childhood. This period is marked by rapid growth rate. And what they eat affect their growth as well as their health status. Anand, et al., (1998) says this stage has a high record of anemia and malnutrition due to some selected practice when it comes to food, at this stage of adolescent, Shadid (2009). Adolescent stage is particularly unique period in life because it is a time of intense physical, psychological and cognitive development. Adolescent growth rate and development is linked with the diet received during childhood and adolescence. It has been indicated that adolescents are vulnerable to nutrient inadequacies as their bodies undergo various changes in life (Buxton, 2014).

Adolescents adopt various food selection practices that make it difficult to meet their dietary requirements. At this stage healthy eating habit is not a priority requirement. At this stage healthy eating habit is not a priority at this stage the freedom from parents selecting their food for them. Adequate nutrition of a person is normally influence by two factors (Chen, 1979) the first is the adequate availability of food both quantity and quality this depends on socio-economic status, food practices, cultural traditions and allocation of the food. The second factor is the ability of the food to digest, absorb and the nutrients being utilized by the body, (Buxton, 2014).

Adolescent who develop healthy eating habits in childhood have a reduced risk of suffering from chronic diseases such as cardiovascular diseases, cancers, diabetes and osteoporosis. Many

adolescents in developing countries enter adulthood under nourished, then end up with nutritional related diseases in adulthood (Isa & Masuri,2001). The food selection practices of adolescents who are away from home has not been a major concern and limited research in the area of adolescent nutrition practices, particularly in the developing country such as Ghana where the choices and selection of foods is dependent on various factors such as religion, culture, economic consideration, health status etc.

Nutrition is vital in life and a major determinant of health hence important to study this subject from its different perspectives. Most studies in eating and nutrition have focused on physiological aspects, but if dissociated from their pertinent social environment, it is believed to produce only limited knowledge and it is for this reason that cultural, psychological and social approach is necessary. Different attitudes towards food choices may have an effect on overall health and contribute to differences in to the health status of the individual (Rozin et al, 1991). Different food selection practices can have had an effect on overall health of people since pleasure apparently acts as health promoters and worries which can adversely affect health. Social and psychological components of eating included in the concept of food selection attitude may be major health determinants. There is no difference associated to either race or social condition among college students and the most important predictor is gender; women are more concerned with eating, weight and health (Rozin et al, 1991.).

In some cases, a shift from a traditional eating pattern to a more Westernized diet has had some undesirable effects on an adolescent student health status (Cruz, 2000). Generally, there is a likelihood of an individual to change his or her personality, attitude and behavior when introduced to a new environment. Food habits which are shaped by culture, are dynamic and susceptible to changes brought about by migration to a new environment. Dietary changes are

related to length of exposure to a new environment and extent of social contact with people of the new environment (Worthington & Wasiams, 2000). The new environment has an impact on their personality, attitudes and behavior hence their dietary habits (Papadaki et al 2007). From some of the studies conducted, the causes of shift from the original food habits to adoption of the new food habits from their new environment have not been taken to consideration. Most students who enter secondary schools at an average age of thirteen years and might be having a well-established pattern of eating based on food choices or selection that have been formed at home. According to Whitney and Cataldo, (1983), the period between ten and nineteen years referred to as adolescents where they are normally are at their developmental stages. The rapidity and extent of growth and maturation during this period of life distinguishes it from both childhood and adulthood. Uddoh, (1980) therefore observed the enormous appetite of this age group and emphasized that they are always eager to satisfy their appetite for various reasons, for that matter adolescents are ever ready to receive enough food to meet their normal physiological requirements.

In a case of an adolescent boarding student in Zimbabwe, some of them make poor food choices due to lack of nutritional knowledge and understanding of their dietary requirements. These often affect their health status since they pounce on anything that come their way without considering the health implication. There was prevalence of physical signs of lack of nutritional knowledge which indicated that the students were unhealthy and could impact negatively on their academic performance (Manwa, 2013). In this study, it is also important to capture the aspect of nutritional knowledge among students since it largely contributes to their dietary practices. A study conducted in Greece among university students to determine their eating habits and food choices at or away from home, found that students living at home did not show major changes in their

eating habits since starting university. Students living away from family home had made some negative changes. They decreased their weekly consumption of fresh fruits, cooked and the raw vegetables, oily fish, sea foods, pulses and olive oil while they increased their sugar, wine, alcohol and fast food intake. This implied that moving away from home and assuming responsibility for food selection and purchase for the first time affect dietary habits and food choices. (Manwa, 2013). However class schedules, availability of food variety and physical activities for the students were not looked into which can also influence dietary patterns. However, as observed by Oguntona et al., (1978), adolescents in boarding schools are able to a very large extent, to exercise free choice of foods, sometimes for the first time, free of parental guidance. It is with this reasons that this study is to be conducted to assess the influences of adolescents food selection practices and its impact on their health status.

1.2 Statement of the Problem

School life is a challenging period especially for students who have to leave their familiar surroundings and settle in a new environment. Most students at their adolescent age tend to explore more on different food selection practices based on several reasons especially when alone or with friends. The unfamiliar environment may have impact on their personality, attitudes and behavior especially on their food choices which sometimes tend to affect their health status. The kind of food an individual select and eat has a role to play on their health status. Adolescents' stage is usually characterized by a lot of influence in action taken. What to eat, how to eat, when to eat are mostly influence by several factors by the adolescent. Adolescents select and practice a particular eating behaviour base on certain influence. They are often influenced by their peers, follow advertisements, eat at night, take in convenience foods, and reduce quantity of food to lose weight and many others. Also, senior school adolescents comprises students from

different homes, religion and cultural background hence a heterogeneous socio-economic and multicultural society. Therefore, there is bound to be differences in their food selection practices and choices. These differences either influenced their food selection practices due to acculturation. From observation on daily routine of students such as busy class schedules, peer pressure, some of the students tend to buy fast foods from different food joints around the school while others eat from the school canteen as others can afford to cook in their hostels. However, what is not clear is the specific factors that influence food choice of adolescents. These practices go a long way to impact on their health status.

1.3 Aim of the Study

The researcher having taught in secondary school for six years has realized that adolescent select their food based on certain influence which eventually affects their health status. Therefore the study is meant to help find out the food selection practices of adolescents students that affect their nutritional status.

1.4 Objectives of the Study

The objectives of the study were;

- i. To examine the food selection practices of adolescent in Dadease Agric Senior High School
- ii. To determine the major influences of the food selection practices of adolescent students in Dadease Agric Senior High School
- iii. To examine the impact of adolescent food selection practices on their health status.

1.5 Research Questions

The following research questions were formulated to guide the study;

1. What are the food selection practices of adolescents in Dadease Agric Senior School?
2. What are the major influences of the food selection practices of adolescent at Dadease Agric Senior High School?
3. What are the impacts of adolescent food selection practices on their health status?

1.6 Significance of the Study

This study will bring to fore adolescents and their characteristics. The study seeks to contribute to existing research on food selection practices with regards to students in Ghana. It is also meant to identify the existence of food choices and their influences among students of Dadease Agric Senior High School. The study will highlight on the good food selection practice that will improve on the health status of adolescent in the selected senior high schools in Effiduase Districts. The study would also stimulate further research on adolescent practices.

It will enable them to pay special attention to students with poor food choices and provide substitutes to prevent nutrition deficiencies among students. Finally, recommendations based on the findings on food selection practices will inform school management and policy makers on the need to educate students on the best choice of food to select when in school. This will protect students' health, safety and improve upon academic work.

1.7 Delimitation of the Study

Within the context of this study, the focus is on the influence of food selection practices of school students. It is important to have an in-depth study into the extent to which these selections affect students' health. The study gathers both qualitative and quantitative data from the major stakeholders namely; students, dispensary staffs and matrons. However the study was narrowed down in scope due to financial constraints. The study therefore confines itself to only students in Dadease Agric Senior School. This means that for a more complete evaluation, the views of other stakeholders will have to be surveyed.

1.8 Organization of the Study

This report comprises five chapters. Chapter one deals with background to the study, the problem, research question and the purpose of the study. Other aspects of the chapter are the significance, limitations and delimitations of the study. Chapter two focuses on the review of related literature while the methodology of the study is the subject of chapter three. The chapter on the methodology describes the research design, the population, sample and sampling procedures, data gathering instruments, pilot study and data collection procedures of the study. Also covered in the chapter are the variables of the study and the methods of data analysis. In chapter four, the data and their analysis are presented. Finally, the summary of the findings, conclusions, recommendations made and suggestions for further research form the concluding chapter of the report.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter discusses the review of related literature for the study. The purpose of this study is to identify adolescence food selection practices and its impact on their health and to find solution to it. The study will attempt to define adolescent period, food selection practices among adolescent students, major influences of food selection practices among adolescent students and impact of food selection practices of health status of students.

2.1 Definition of Adolescence

The review of available literature will therefore be on the following “Adolescence” is a dynamically evolving theoretical construct informed through physiologic, psychosocial, temporal and cultural lenses. This critical developmental period is conventionally understood as the years between the onset of puberty and the establishment of social independence (Steinberg, 2014). The most commonly used chronologic definition of adolescence includes the ages of 10-18, but may incorporate a span of 9 to 21 years depending on the source (WHO, 2005). The term adolescence is commonly understood to define the period of life between childhood and adulthood (Kaplan, 2004,). This time frame, however, not only describes a very diverse reality, but adolescence varies considerably across cultures, over time, and within individuals. Therefore, one developmental term or stage marked “adolescence” clearly fails to provide the best frame of reference for this diversely experienced developmental period of life. Western culture, for example, defines adolescence as the time period from puberty to age 18 or 21, but non-Western cultures tend to mark the beginning of adulthood with rites of passage often following the onset of puberty. These rites mark the end of an individual’s childhood and his or her acceptance into

adult society. Adolescence has been described as the period of life between 11 and 21 years of age in which profound and dramatic biological, emotional and cognitive maturity is attained. In this transitional stage of life, adolescents may no longer benefit from the attention and care usually given to children; and they may not get the protection associated with adulthood either. This transitional period between childhood and adulthood provides an opportunity to prepare for a healthy productive and reproductive life, and to prevent the onset of nutrition related chronic diseases in adult life. It also affords an opportunity to adolescence-specific nutrition issues and, possibly, also corrects some nutritional problems originating in the past (World Health Organization). There is therefore the need to know and understand the eating habits of adolescents, because of the high tendency for eating habits acquired during adolescence to persist into adulthood.

The adolescence period of life is therefore a critical period for establishing good dietary habits that would aid in the prevention of diseases in later life. It has been indicated that adolescents are particularly vulnerable to nutrient inadequacies as their bodies undergo various physiological changes, and as they begin to become more socially independent, which often impacts negatively on their dietary intakes. Some studies have also indicated that as a result of the rapid changes in physical growth and psychosocial development and as a result of the unhealthy dietary practices that adolescents adopt, they are unable to meet their dietary requirements. In addition, research has shown that, in most cases, healthy eating is not a priority of adolescents. It is common knowledge that children and adolescents who develop healthy eating habits early in life are likely to maintain them into adulthood, and have a reduced risk of suffering from chronic diseases such as cardiovascular diseases, cancers, diabetes and osteoporosis. Research has shown that adolescents who have healthy eating habits are more likely to have the ability to learn normally

in school and perform better academically than adolescents who have unhealthy eating habits. Past studies have further revealed that adolescents frequently consume energy-dense diets which are of poor quality in terms of essential micronutrients. The poor nutritional status of adolescents has been attributed to many factors, including low meal frequency, high consumption of sweetened beverages, increased consumption of energy-dense foods, increased consumption of foods away from home (with peers), skipping meals, particularly breakfast. Other unhealthy practices include the consumption of high-dense fatty and sugary fast foods as the main meals of the day, eating meals characterized by a low content of fruits and vegetables, adopting unconventional dietary practices such as cutting down habits of adolescents not only in Ghana, but also in other developing countries battling with persistently upward trends in the incidence of non-communicable health conditions.

2.1. Food selection practice among adolescent

2.2. The major influence on the food selection practice of adolescences

2.3. Impact of adolescent food selection practices on their health status

2.1 Food Selection Practice among Adolescents

Adolescents who are mostly in the secondary schools and have majority of them in the boarding houses, spent greater part of their years in school. At this stage, adolescent gain independence from their parents concerning their food selection at school. Hamilton and Whitney, (1988), identified adolescence as a well-known of time of rebellion which extends to all aspect of life styles including feeding. Lawik, (1981) also states that, this period is characterized by increase in social activity. Spindler, 1963) noted that the social activity of adolescent keeps them away from home longer. Mead, (1943) is of the opinion that adolescents demonstrate their independence by refusing to eat what is good for them. This dependence from food and their mobility leads to

some modification in their dietary patterns (Hurlock,1978). Spindler, (1963), found out that the food selection practice of adolescents has changed their food selection for worse. Some of the food selection practices of adolescents are skipping meals, snacking, unconventional dietary pattern etc. Numerous studies have shown that college students often have poor eating habits. Students tend to eat fewer fruits and vegetables on a daily basis and report high intake of high-fat, high-calorie foods (Brevard & Ricketts, 1996; Driskell, Kim, & Goebel, 2005; Racette, Deusinger, Strube, Highstein, & Deusinger, 2005). According to the American College Health Association (2006), a 2004 study revealed that only 7.3% of students eat five or more servings of fruits and vegetables daily. The transition to college life often worsens dietary habits among students (Grace, 1997) which could contribute to weight problems especially during the first year of college or second cycle institution (Anderson et al., 2003) and continue during later years of life (Centers for Disease Control, 1997; Racette et al., 2005).

2.2 Food Selection Practices of Adolescents in Developed Countries

In general, adolescents in most countries have three main meals (Siega-Riz, 1998; Cruz, 2000). Owing to urbanization and the change of lifestyle, the meal patterns of adolescents have their own characteristics which include, Breakfast skipping, dieting and snacking contributes to health problems of adolescents worldwide (Shaw, 1998; Cruz, 2000; Rolland Cachera et al, 2000; Samuelson, 2000), and they are found to be associated with overweight/obesity (Ortega et al, 1998; Berkey et al, 2003). Adolescent eating behaviour is a function of individual and environmental influences. Individual influences are psychological as well as biological, whereas, environmental influences include immediate social environments such as family, friend, and peer networks and other factors such as school meals and fast food outlets, food available at the school canteen as well as what is in their chop boxes(provisions). In addition, another important factor,

is social system or macrosystem which includes mass media, marketing and advertising, social and cultural norms of the society. Adolescent girls in particular, because of their excessive concern with body weight or obsession with thinness, are reported with moderate level of disordered eating behaviours. Disordered eating behaviours refer to many disturbed eating patterns which affect the nutritional status of adolescent girls. The literature shows that adolescent girls are more prone to adopt various forms of eating behaviours than boys, because they become preoccupied with and sensitive to their changing body size, shape, and physical appearance. Some dietary patterns appear to be quite common among adolescents: frequent snacking (usually energy-dense and convenience foods); habitual meal skipping (particularly breakfast); late night eating or irregular meal consumption; wide consumption of fast and highly processed foods and unconventional dietary practices. Regardless of family income, adolescents of both sexes are at the risk of both dietary excesses (total fat, saturated fatty acids, cholesterol, sodium, table sugar) and deficiencies (fruit, vegetables, iron and calcium-rich foods).

In Poland, majority of rural school children and adolescents aged 9–13 have poor dietary habits, including breakfast skipping, high consumption of sweets, and low consumption of fruit and vegetable. There is a strong positive association between irregular breakfast eating and the risk of excess weight gain as the first step to obesity and metabolic disorders, diabetes, cardiovascular diseases. In this aspect, the maintenance of balance between energy intake/output and adequate food daily intake is significant and breakfast has been considered to be an important factor for energy intake regulation. In developed countries, irregular meal patterns as well as snack consumption are common, especially among girls in areas with low Socio Economic Standards (SES) (Hoglund et al, 1998), while adolescents with a higher socio-economic level tend to show a higher consumption of vegetables, fruits and high fibre foods and a lower consumption

of meat, meat products and fats than their counterparts from a lower socio-economic level (Samuelson, 2000; Wardle et al, 2003). China is undergoing a rapid nutrition transition. There has been a tremendous dietary change during the last decades. According to China's National Nutrition Survey, between 1982 and 1992, cereal and tuber consumption decreased by 12 and 47%, respectively, while consumption of meat, eggs, fats and oil increased by 38, 60 and 61% (Chen, 1999). The rapid increase in the prevalence of childhood obesity in developed countries across the world has led to increased concern about the diets of adolescents and children. Although increased levels of inactive behavior are likely to be associated with this upsurge in obesity, changes in food consumption patterns are also likely to play a vital role. Several dietary behaviours have been linked with childhood obesity, including increased number of meals eaten outside the home, larger portion sizes of meals at restaurants and fast-food takeaways, and increased consumption of soft drinks. The increasing prevalence of snacking has also recently been suggested as a potentially important influence on energy regulation in adolescents and adults

2.2.1 Skipping Meals

Meal skipping is the omission or lack of consumption of one or more of the traditional main meals (breakfast, lunch or dinner) throughout the day. The regular omission of meals, particularly the breakfast meal, has been associated with undesirable health outcomes and dietary patterns. Since children and adolescents may be considered as an indicator of this erratic eating behavior and is associated with numerous health compromising eating poorer diet quality, lower intakes of total energy, vitamins and minerals These unhealthy eating behaviors and inadequate intake are directly correlated with deficiencies in intellectual performance and cognitive development, behavioral and mental problems, obesity and overweight conditions as well as

eating disorders. This practice is usually formed through a complex interaction of internal and external causes such as food preference and availability, as well as weight perception and parental and peer influences. Research suggests that young adults engage in poor eating behaviors, such as low fruit and vegetable consumption, high consumption of energy-dense snack foods, and frequently fail to consume regular meals. Skipping meals, especially breakfast, is common among adolescents and “grazing” has become more popular. Grazing is not in itself the problem, it is the choice of foods that students eat as snacks that often puts them at risk for nutrient deficiencies and obesity. According to the Continuing Surveys of Food Intake by Individuals there has been an overall energy intake increase by adolescents from 1977-1996 predominantly from an increase in snack consumption. Some of the reasons that students skip meals include Adolescent girls’ excessive concern with body weight or obsession with thinness, are reported with moderate level of disordered eating behaviors. Breakfast is the meal adolescents normally skip, this result in decrease in their daily energy intake and low performance at school, calcium and protein intake (Nickless, Reger, Beech and Berenson, 1998). Skipping meals leads to Adolescent ending in nibbling food rather than having proper meals (liu et al. 2006).

Meal skipping plays a causal role in overweight or is associated with other factors impacting BMI such as parental involvement in food decisions. In summary, meal skipping and other extreme dieting behaviours have been linked to overeating and overweight in UK, US, and Australian populations. Skipping breakfast is a common practice by people around the world. The 1999-2006 National Health and Nutrition Survey of the United States reported that between 20% and 30% of children and adolescents skipped breakfast frequently.² In India, the proportion of children skipping breakfast regularly was even higher (over 50%).

2.2.2 Snacking

Snacking is defined as the consumption of foods and drinks between meals including milk drinks, regular soft drinks, sports drinks and energy drinks (international journal of Behavioral nutrition and physical activity, 2007.) Among adolescents and children varies widely across the world. For example, 87–88% of American adolescents (aged 12–18 years) consume at least one snack per day, with snacks contributing approximately 25% of their daily energy intake. Anderson (1998). In European countries, snacking is also highly prevalent, with Scottish adolescents (aged 15 years) consuming on average 2.8 snacks per day and Portuguese youth (aged 5–15 years) consuming 1.5 snacks per day. In Asian countries, snacking rates among youth (aged 2–19 years) are more variable. For example, in the Philippines, Russia and China, 86%, 71% and 10% of youth consume at least one snack on a daily basis, with snacks providing 18%, 16% and 1% of their total daily energy, respectively. Snacking is also commonly associated with undesirable health outcomes and dietary patterns.

Since adolescents select snacks based on taste over nutrition, they more often choose salty, crunchy foods as snacks over healthier alternatives. Consequently, snacking is commonly regarded as a contributing factor in the development of childhood overweight and obesity, although studies that have examined the association between snacking and body mass index have yielded mixed results. Although evidence is limited, snacking may also be associated with less frequent consumption of meals, which may be detrimental to health since regular meal patterns are associated with greater dietary diversity, healthier food choices and better nutrient intakes, behaviors and less adequate dietary intakes. Select snacks based on taste over nutrition, they more often choose salty, crunchy foods as snacks over healthier alternatives such as fruits and protein base snacks. Consequently, snacking is commonly regarded as a contributing factor

in the development of childhood overweight and obesity, although studies that have examined the association between snacking and body mass index have yielded mixed results. Little is known about the context of snacking in adolescents, or how snacking may influence other dietary habits, such as meal skipping. While previous research shows that snacking among children and adolescents occurs most often in the afternoon and at home, information about the specific contexts in which adolescent's snack (e.g. while doing homework or working, while watching television) is lacking. Similarly, while meal skipping has been shown to be associated with a higher snacking frequency among both adolescents and adults, Snack consumption has been described in terms of items eaten.

An investigation of snack data from the USDA's Nation-wide Food Consumption Survey and Continuing Survey of Food Intake by Individuals shows an increase from 20 to 23 percent in total daily calorie intake from snacks from 1977-78 to 1994-96. Soda/juice beverage and salty snack consumption increased, while high-fat dessert consumption decreased. Milk consumption decreased during this time as well. Nowadays eating habits are moving away from eating three substantial meals a day to eating smaller amounts of food more frequently (snacking). Snacking is the consumption of foods and drinks between meals including milk, drinks, regular soft drinks, sport drinks and energy drinks. Most adolescent practice snacking at least once a day. There can be healthy snacks and unhealthy snacks which do not contain most of the essential nutrient.

High-energy snack foods one longitudinal study in US girls found that higher snacking frequency was associated with an increase in BMI from 5 to 9 years. This study also found that girls who watched more TV consumed more snacks in front of the Television.³⁵ In an

experimental study of 5-year-old to 7-year-old US girls, those who ate large amounts of snack foods in the absence of hunger were more likely to be overweight at both ages.³⁶

Sugar-sweetened soft drinks: There were four longitudinal studies focusing on the consumption of sugar-sweetened soft drinks. A small study of US children aged 6–13 years attending a summer camp found that the children who consumed >16 oz/day of sugar-sweetened soft drinks had significantly higher total energy intake and a tendency to greater weight gain over the summer compared to children who consumed between 6oz and 16oz of sugar-sweetened soft drinks per day.³⁷ A retrospective longitudinal study from Netherlands of over 10 000 children who had diet assessed at age 2 or 3 years and height and weight measured a year later found that the odds of becoming overweight was two times higher in children who were above the 85 centile at baseline and who had one or more ‘sweet drinks’ (fruit juices,)

2.2.3 Dieting

In western countries, thin body is the most preferred body shape. However, exceptions observed in certain ethnic groups. Thinness is a symbol of beauty, success, control, and sexual attractiveness, while obesity represents laziness, self-indulgence, and lack of willpower. To achieve thin body image, adolescent girls of western countries often remain engaged with their body weight and shape. They may even deny the requirement of important nutritional components in their body when they need it most. For example, in the United States, Killen *et al* .Found that 11% of adolescents regularly vomit their food after having it known as anorexia nervosa and 13% of them reported some form of purging behaviours like use of laxatives or diuretics for body weight control due to excessive concern over body weight. A Minnesota school based survey suggested an association between dieting and later onset of

obesity and eating disorders. Another study carried out in Minnesota revealed that 56% of 9th grade females and 28% of 9th grade males reported disordered eating behavior such as fasting, vomiting, binge eating. These behaviours were found to be high among both 12th grade females and males. In Europe, study reported that adolescent who practiced disordered eating such as dieting had less self-esteem compared to those who practiced normal eating. Many studies carried out in Australia also showed the existence of disordered eating behaviours and unhealthy weight reduction practices among adolescent girls. Both young and older adolescent girls reported significantly more disordered eating behaviours than their male counterparts.

Internationalization of thin body weight and mass media play a key role in the development of disordered eating behaviours among Arabian adolescents living in the United Arab Emirates. Study reported that about 66% of adolescents perceived themselves as overweight and desired to be thin. Study also revealed that about 78% of adolescents expressed dissatisfaction with their current body weight and attempted to reduce it through restricting food intake, avoidance of certain food groups. Dieting is a common practice among adolescent especially girls. This practice is to enable them to lose weight (Konn, Kinchen, Williams, Lowry, et al, 2000) Dieting is when one does not eat the kind of food that or amount of food with reason to gain or lose weight.

Adolescents according to Guthrie, (1971) are either fat or fear to be fat and the diet. Adolescents especially the girls are mostly those that practice dieting to lose weight. Cultural perceptions that “thin is beautiful” norm in the western culture is influencing their dieting practice. Adolescents strive to achieve an image pleasing to themselves and to look attractive to their peers so they diet

to achieve the desired body shape. Adolescents especially girls skip meals for reason of weight losing and tend to be at risk of dietary inadequacy (Neumark,Sztainer,2004.) .

2.2.4 Eating Out

Adolescent stage is a state that most of their time in a day is spent with friends outside home (Mead, 1993.) Most of adolescent eating habit takes place at school and food vendors by the road side. Fast foods, restaurant and food courts are the favorite place for adolescent to go and eat due to the fact that, 1. They can socialize with friends 2. The food is less expensive. 3. Their services are fast. 4. Offerings are limited so they are made decisions easily. Also, adolescent prefer eating outside home or going to buy food outside or even if there is home food available. They don't normally consider nutritional aspect of the food they select outside (siege – Riz et al.,1998, Shaw,1998.) Adolescent stage is characterized by a lot of social activity this social activity keeps them away from home so they eat outside home. Mead,(1993)

2.3 Food Selection Practices of Adolescent in West Africa

Ghanaians who are in West Africa, diets basically on carbohydrate dense food and most families plan their meals around it. Despite the energy value of carbohydrates, its physiological effects on human health cannot be overemphasized. The energy contents and digestibility of different carbohydrates, however, differ (Mann et al. 2007). Some carbohydrate foods elicit a quicker response from insulin than others (Lin et al. 2010). This is due to differences in the rate at which they release glucose into the blood. The relative ranking of how fast or slow a carbohydrate food is converted to glucose after ingestion is a measure of its glycemic index (Lavigne et al. 2000). Glycemic index (GI), though a simple numerical index which measures the blood glucose raising

ability of carbohydrates, has become an established concept for classifying carbohydrates (FAO/WHO, 1998) Most Ghanaian carbohydrates (such as corn, rice, cassava, yam, and plantain) are subjected to quite a number of processing techniques during preparation for consumption. The processing of a carbohydrate food plays an important role in determining its overall properties (Englyst et al. 2007), which also has a significant influence on physiological function in the human body Common Ghanaian Foods Locally pounded fufu (LPF) preparation involved plantain and cassava quantities in the ratio of 80:20 boiled and pounded into paste. Banku was prepared from corn dough and cassava dough in the ratio of 80:20 stirred in hot water to form a palp. TZ and kenkey were, however, solely from corn. TZ is made from unfermented maize flour stirred in hot water into palp kenkey is made from fermented corn dough. Industry- processed fufu flour, containing the following ingredients: plantain, cassava, and potato were, however, prepared based on instruction on the package. All these food are energy dense foods.

Food habits are among the oldest and most entrenched aspects of many cultures that exert deep influence on the behaviour of people. The cultural background determines what is eaten as well as when and how. A people's culture has a lot of influence on the kind of foods people eat in each community. In every part of the society, people have diverse feeding habits that have been inherited from generation to generation. Food is used to satisfy hunger, provide comfort and relief from boredom or anxiety, as a status symbol, as well as in the performance of various rituals and rites. Several factors influence the choice of the food we eat. These include availability, economy, cultural and social habits, physiological and psychological attributes, marketing methods, and nutritional knowledge, among others Familiar food is satisfying and reassuring, particularly the traditional foods of childhood, which evoke a deep-seated emotional response. Many African countries have in the past three generations experienced extensive

changes in food supplies and in household diets. Exotic (untraditional) foods now dominate many urban areas in Africa. Even in the rural areas, the range of traditional domestic foodstuff has been considerably reduced partly due to increased cost of production and processing, and long and laborious domestic preparation methods. Most of the dietary energy comes from the staple cereals such as maize, sorghum, millet and rice. These contribute 40-60 percent of the total dietary energy supply. Their contribution to the family diet has therefore considerably declined the dietary practice of increasing intake of fast foods, replacing naturally nutritious high fiber diet with western diets which contain high concentrations of sugar and fat, coupled with the tendency to a more sedentary lifestyle, has resulted in the epidemic of childhood obesity. Overweight and obesity, which were considered problems in high-income countries only, are dramatically rising in low and middle-income countries, particularly in urban settings, and hence have become global public health problems OjofeitimiEO, Iyanuoluwa A, Olugbenga-Bello, Adebode DA, Adeomi AA (2011). It has been asserted that the rising trend of overweight and obesity cases and their associated diseases among Ghanaians is likely to worsen, given the influx of high-energy dense foods into the Ghanaian market, coupled with the huge change in the dietary habits of people, mainly as a result of improvements in socio-economic conditions. Ayisi-Addo(2006) Carbohydrates which are the main energy source in most human diets, making up about 40–80% of our calorie intake play an enormous role in human physiology (Mann et al. 2007). Most Ghanaian diets are carbohydrate based and most families plan their meals around it. Despite the energy value of carbohydrates, its physiological effects on human health cannot be overemphasized. The energy contents and digestibility of different carbohydrates, however, differ (Mann et al. 2007). Some carbohydrate foods elicit a quicker response from insulin than others (Lin et al. 2010). This is due to differences in the rate at which they release glucose into the blood. The relative ranking of how fast or slow a carbohydrate food

is converted to glucose after ingestion is a measure of its glycemic index (Lavigne et al. 2000). What the African communities eat can be viewed in the context of the diverse socio-cultural and economic environments. The food consumed is not the same throughout, although there are some striking similarities. Higher income and education almost directly translate into enhanced dietary practices. Generally, Africans eat more grain foods, but most of them consume less than one serving of fruits per day. Locally available staples generally form the basis of a meal, but the meal becomes nutritionally adequate and tasty if a relish or soup (consisting of beans or groundnuts, vegetables, fats or oils, condiments and spices) and fruits are eaten with the staple. In most African communities, people rely on one or two staple crops. Most common are maize, teff, cassava, yam, sweet potato, plantain and enset. These crops provide the bulk of energy intake of household members. To balance their diet, consumers complement staple foods with legumes or foods from animal sources that are rich in proteins and fats/oil. (Nana AA. Body, 1999) Locally pounded fufu (LPF) preparation involved plantain and cassava quantities in the ratio of 80:20 boiled and pounded into paste. Banku was prepared from corn dough and cassava dough in the ratio of 80:20 stirred in hot water to form a palp. TZ and kenkey were, however, solely from corn. TZ is made from unfermented maize flour stirred in hot water into palp kenkey is made from fermented corn dough. Industry- processed fufu flour, containing the following ingredients: plantain, cassava, and potato was, however, prepared based on instruction on the package.

2.3.1 Skipping Meals

Regarding snacking habits, it has been reported that adolescents usually cultivate the habit of consuming large portion sizes of fast food meals. Ello-Martin JA, Ledikwe JH, Rolls BJ (2005) and also consume high quantities of carbonated soft and energy drinks (Lewik, 1981). Although,

ample evidence is not available, snacking has been linked to intakes of reduced portion sizes of meals, which makes it detrimental to health, since regular meal patterns are associated with healthier food choices and greater dietary diversity. Cusatis DC, Shannon BM (1996) and meeting recommended energy and nutrients intakes. It has also been reported that adolescents who skip breakfast are most likely to have difficulty concentrating and remaining focused and alert in class by mid-morning. In addition, people who skip breakfast are more likely to consume high sugar, fat and salt- dense snacks often during the day (Resnicow,1991).

Similarly, other studies have shown that breakfast skipping is associated with substantially lower daily energy intakes (Schenkel, Stockman, Brown, Duncan, 2007). In addition, other studies have found that children who practice unhealthy eating habits become more susceptible to obesity in early life, which later results in health defects such as cardiovascular diseases, diabetes and breast, colonic, endometrial and prostate cancers. Ojofeitimi, Iyanuoluwa, Olugbenga-Bello, Adebode , Adeomi (2011). The dietary practice of increasing intake of fast foods, replacing naturally nutritious high fibre diet with western diets which contain high concentrations of sugar and fat, coupled with the tendency to a more sedentary lifestyle, has resulted in the epidemic of childhood obesity (Anderson, Butcher, 2006).

Overweight and obesity, which were considered problems in high-income countries only, are dramatically rising in low and middle-income countries, particularly in urban settings, and hence have become global public health problems. It has been asserted that the rising trend of overweight and obesity cases and their associated diseases among Ghanaians is likely to worsen, given the influx of high-energy dense foods into the Ghanaian market, coupled with the huge

change in the dietary habits of people, mainly as a result of improvements in socio-economic conditions.

2.3.2 Snacking

The standard meals sometimes omitted are made up of snacks. Adolescents are seen as eating more of their foods as snacks than adults. Guthrie, (1971) reported that between meal foods provided on the average eleven to nineteen per cent of the energy of adolescents in New York. The study showed that boys had on the average 6.4 day time snacks and 2.9 evening snacks per week while girls had 7.7 day time and 3.8 evening snacks per week. The difference in the number of snacks eaten was probably due to the fact that more females than males skip meals and therefore had to make up with snacks. Leverton, (1968) found that boys ate breakfast more frequently than girls and their choice of breakfast provided more nutrients.

Snacking per se, is not detrimental as it can sometimes provide the nutrients which would help to balance up what is deficient in the main meals. However, Fleck, (1976) emphasized that when snacks are made up of foods providing only calories, they might be detrimental to the health of the adolescent. Unfortunately, one feature of many foods liked and consumed by adolescents is their mainly high energy content (Fleck, 1976) . Stasch et al., (1970), recorded that soft drinks were the most commonly chosen snacks by adolescents both at home and at school.

For pastoral communities, most children spend up to 70% of their time away from home herding livestock. They therefore only eat their main meal in the evening. Young children must eat adequate food as they pass through the critical stages of growth and development. Snack foods that provide energy can be eaten raw or cooked and are suitable for filling the gap between the

family meals. Example of snacks commonly consumed in Africa include boiled or roasted roots and tubers (cassava, yams, potatoes), plantains; boiled or roasted green maize; roasted ground nuts or oilseeds, koose, tubaani, wasawasa, kulikuli, soyabeans kebab, soobolo ,bukina with milk; fried fish; insects such as locusts or termites; and fruits such as bananas, oranges, mangoes or sugarcane. For the farming communities, the children spend some time on the farms but in most cases, they spend up to 60% of their time in school and parents have less control over food preparation and the food the child selects and eats .As adolescence begins, the growth associated with this stage increases their appetite considerably.

2.3.3 Late Eating

Nighttime eating, particularly before bed, has received considerable attention. Limiting and/or avoiding food before nighttime sleep has been proposed as both a weight loss strategy and approach to improve health and body composition. Indeed, negative outcomes have been demonstrated in response to large mixed meals in populations that consume a majority of their daily food intake during the night. However, data is beginning to mount to suggest that negative outcomes may not be consistent when the food choice is small, nutrient-dense, low energy foods and/or single macronutrients rather than large mixed-meals. From this perspective, it appears that a bedtime supply of nutrients can promote positive physiological changes in healthy populations. In addition, when nighttime feeding is combined with exercise training, any adverse effects appear to be eliminated in obese populations. Lastly, in Type I diabetics and those with glycogen storage disease, eating before bed is essential for survival. Nevertheless, nighttime consumption of small (~150 kcals) single nutrients or mixed-meals does not appear to be harmful and may be beneficial for muscle protein synthesis and cardiometabolic health. Future research is warranted to elucidate potential applications of nighttime feeding alone and in combination with exercise in

various populations of health and disease. Adolescents normally eat during prep time and after prep before sleeping. The food they normally take ranges from snacks to heavy meal like gari n shito or kenkey and shito.

2.4 Major Influences on the Food Selection Practice among Adolescents

In Ghana, for instance, some rural and urban areas due to traditional beliefs abhor certain food items; which in a way may have caused certain alterations in the eating habits of adolescents and consequently their nutritional intake. Nutritional needs during adolescence are increased because of the increased growth rate and changes in body composition associated with puberty but nutritional intake by adolescents is interrupted by a myriad of factors. Rea (2007) posited that being aware of the factors that influence what and how much one eats can help you make informed eating choices. Some of the influences are parental influence, media influences, peer influences, body image influences, economic influences, taste of the food.

2.4.1 Parental Influence

Parents are a major influence in the lives of their adolescent children. The ways in which parents consume food will influence their children (Koivisto, 1999; Koivisto, Fellenius, & Sjödén, 1994; Michela & Contento, 1986). If the parents do not eat fruit, for example, then the children will be unlikely to do so. This assertion is further emphasized by Videon and Manning (2003), on studying the determinants of fruits, vegetables, and dairy products consumption among adolescents in the United States. They concluded that the presence of parents during evening meals associated positively with increased consumption of fruits, vegetables, and dairy products. Nevertheless, Wood-Wright (2009) in an examination of dietary intakes and patterns among U.S.

families found that the resemblance between children and their parents' eating habits is weak and that factors other than family and parental eating behaviors may play an important role in affecting children's dietary intakes. In a research done by Luepker et al. (1996), older children whom the juniors looked up to had a positive influence on their junior peers' behaviors including what they eat. Experienced counselors and school and preschool teachers often use this approach informally by identifying which child is an "opinion leader" and then recruiting him or her to influence the other children's behaviors. Early adolescents consume 63%–65% of their daily calories at home, Parental behaviors forming part of the home and family environmental sphere of influence within the Socio-Ecological Model which include practices, such as making healthy foods available, establishing expectations for healthful food consumption, and setting a good example. These practices have been positively associated with overall diet quality of youth. A similar set of parenting practices has been identified regarding influence on youth physical activity behaviors including modeling, providing support for physical activity in the home environment

Parental influence via parenting practices is based on the parent's presence and involvement in the daily life and routines of an early adolescent. Parent supervision during eating occasions at home likely varies with child age and autonomy, parent employment/availability, and socio-demographic variables, such as socioeconomic status. Presence and involvement provides an opportunity to implement parenting practices regarding role modeling, encouraging positive behaviors, and modifying availability of foods and beverages in the home environment. Family involvement has been assessed previously in a cross-sectional study involving children (10–11 years) including measures of a child's time spent alone without an adult at home after school, weekday frequency of family meals, and a parent being physically active with a child. When

children spent less time alone after school they consumed fewer soft drinks and had less screen time. Parents are a major influence in the lives of their adolescent children. The ways in which parents consume food will influence their children (Koivisto, 1999; Koivisto, Fellenius, & Sjöden, 1994; Michela & Contento, 1986). If the parents do not eat fruit, for example, then the children will be unlikely to do so. This assertion is further emphasized by Videon and Manning (2003), on studying the determinants of fruits, vegetables, and dairy products consumption among adolescents in the United States. They concluded that the presence of parents during evening meals associated positively with increased consumption of fruits, vegetables, and dairy products. Nevertheless, Wood-Wright (2009) in an examination of dietary intakes and patterns among U.S. families found that the resemblance between children and their parents' eating habits is weak and that factors other than family and parental eating behaviors may play an important role in affecting children's dietary intakes.

Presently, the media is a very brute and powerful force and can influence the lives of many in a very quick manner. Television has several roles in many families: It can be a useful child minder, a source of constant stimulation, an escape into fantasy, and/or a source of information about people and the outside world (Salmon, Timperio, Telford, Carver, & Crawford, 2005). We may eat foods because we were brought up eating them and find them comforting. Rea (2007) reported that some people eat, or do not eat, certain foods based on religious, political, or social beliefs. These factors are also reflected in the food choices parents make for their children. Regarding gender, it appears that adolescent girls do experience more stress than their male counterpart's due to the physical and physiological changes and are at a greater.

2.4.2 Media Influence

The media is a very brute and powerful force and can influence the lives of many in a very quick manner. Television has several roles in many families: It can be a useful child minder, a source of constant stimulation, an escape into fantasy, and/or a source of information about people and the outside world (Salmon, Timperio, Telford, Carver, & Crawford, 2005). Television and the mass media, which most of us are highly dependent on, play important roles in the postmodern society. Australian children are exposed to more television food advertising than probably children of every other nationality (Salmon et al., 2005). They showed that 80% of food advertising in children's viewing hours is for confectionery and foods and beverages that contain copious amounts of fat, sugar, and salt. Long hours of exposure to television programs were also associated with increased risk of obesity in children. Current guidelines suggest that children should spend no more than two hours per day viewing all electronic entertainment media (American Academy of Pediatrics, 2001; Australian College of Pediatrics, 1994) We may eat foods because we were brought up eating them and find them comforting. Rea (2007) reported that some people eat, or do not eat, certain foods based on religious, political, or social beliefs.

These factors are also reflected in the food choices parents make for their children. Regarding gender, it appears that adolescent girls do experience more stress than their male counterparts due to the physical and physiological changes. . Food selection is a complex behavior influenced by a huge variety of determinants related to the food, to the external environment and to the individual which interact to produce food choice. Individual influences include physiological and psychological factors, acquired food preferences and knowledge and the interpersonal or social influences are, for example, the family and group influences. There are other influences such as sensory characteristics, food related expectations and attitudes, health claims, price,

ethical concerns and mood. The media and advertising are a principal source of information about food and nutrition for many whether threats or arousal of fear in messages will stimulate people to make desired dietary changes, the media have the capacity to persuade. Presently, the media is a very brute and powerful force and can influence the lives of many in a very quick manner. Television has several roles in many families, most adolescence spent a lot of their time watching all kind of programs on television, which can be a source of constant stimulation, an escape into fantasy, and a source of information about people and the outside world (Salmon, Timperio, Telford, Carver, & Crawford, 2005).

Media influence in the form of television advertisements targeting children have been very successful at increasing consumption of “fast food”, food from restaurants which prepare and serve food quickly that is generally high in fat and calories. Advertisements for other calorie dense snacks are equally abundant during the hour’s children usually watch television. (Rees, 1992) In a focus group study of social-environmental influences on children’s diets, both the children and the parents mentioned television commercials promoting “junk-foods” and sports drinks as being influential. (Cullen et al, 2000) there is the need to develop healthy habits. (American Heart Association, 2002) This is important prior to developing interventions designed to promote healthy snacking behavior in adolescents.

2.4.3 Gender Influence

Food selection between genders. Ladies generally show a slightly healthier pattern of food choice than their men counterpart, this can be partly attributable Literature shows that adolescent girls are more prone to adopt various forms of eating behaviors than boys, because they become preoccupied with and sensitive to their changing body size, women’s concern about weight

control and partly to their stronger beliefs in healthy eating. Young women were also more likely to diet to lose weight while young men were more likely to desire to gain weight. If men do attempt weight loss, they typically try exercise rather than dieting. These two behaviors can be found in young school children. Men's are in poor nutrition knowledge than their fem Gender differences also exist (Racette et al., 2005). Female college students tend to eat more fatty foods than male students, although their fruit and vegetable consumption tends to remain similar. Women's food decisions have much more personal importance and relevance. While for men the food decisions may be socially and culturally determined, and are very much rooted in the ideology of what it means to be female and male. Some research has shown that the most important factors predicting food selection among adults are: taste, cost, nutrition, convenience, pleasure, and weight control, in that order (Glanz, Basil, Maibach, Goldberg, & Snyder 1998).

Many studies have shown that people often establish these tastes and habits while they are relatively young (Birch, 1999). Evidence suggests early establishment of habits and preferences occurs for a variety of behaviors including media use (Basil, 1990) and music listening (Holbrook & Schindler, 1994), as well as food choice (Birch, 1999). Therefore, it is advisable to begin establishing good eating habits when people are as young as possible. Importantly, however, for the very young many food decisions are controlled by parents and preschools (Nicklas et al., 2001). Therefore, food choice for the youngest age groups may be constrained by a number of factors. An especially important time of life for food choice is when people step out independently for the first time and begin to make all of their own food decisions. For many people, this is the transition to college life. The transition to college or university is a critical period for young adults, who are often facing their first opportunity to make their own food decisions (Baker, 1991; Marquis, 2005) and this could have a negative impact on students' eating

behaviors (Marquis, 2005; Rappoport, 2003). Other literature has extensively discussed factors that influence eating behaviors among college students. However, application of a behavioral model such as the health belief model (HBM) has received less attention. HBM in the college eating context (Garcia & Mann, 2003; Von Ah, Ebert, Ngamvitroj, Park, & Kang, 2004; Wdowik, Kendall, Harris, & Auld, 2001). These studies examined avoiding dieting, a combination of eating and exercise, and diabetic students, respectively.

2.4.4 Body Image Influence

Body image is the picture a person has in their head of their body, which may or may not reflect reality, and includes a value judgment of that picture. Body image as a factor influencing food choice is more important for adolescents than it is for younger children. One survey found 62% of adolescent girls and 28% of boys reported dieting in the previous year. (Story et al, 1998) While dieting and other methods of weight control can be harmful to growing bodies, not all students who report dieting are engaging in unhealthy weight control practices. Body image may also cause restriction of snacks and meals. Gender may also play a role in body image. Dieting or some form of weight control is common among adolescents, and awareness of weight is heightened even in young adolescent girls. (Story et al, 1998) This will have an impact on the types of snacks they choose. Both male and female adolescents do report attempting weight loss. Because males tend to have an overall higher food consumption, they may score higher than girls on nutrient analyses (Cusatis & Shannon, 1996) but they consume proportionally more sugar, and salt as well. This is a problem because without the protective effects of estrogen, males suffer from cardiovascular disease earlier in life than women do.

2.4.5 Students Status Influences

Studies have shown a link between demographic and psychographic characteristics with dietary behavior of college students. Driskell et al. (2005) revealed few differences among lower and upper level students in terms of their dietary habits, suggesting that habits established in the first year or two likely carry forward into later college years. However, where a student lives seems to affect his or her dietary habits and diet-related health (Brevard & Ricketts, 1996). Students living off-campus reported a higher percentage of energy from protein. Similarly, serum triglyceride level and the ratio of total cholesterol to high-density lipoprotein were also higher among students living off-campus. The authors conclude that students living off campus are choosing different foods than those living on campus. According to Brevard & Ricketts (1996), residence on or off campus made a difference, but it also interacted with gender. Higher energy from protein was more prevalent among men living off campus than on campus. For women, higher serum triglyceride and ratio of total cholesterol to high density lipoprotein was found among those who lived off campus.

Horacek & Betts (1998) clustered male and female college students by dietary intake differences. Four clusters were found: students influenced by internal (hunger and taste) and external cues (friends and media), by budget, by health, and neither of the factors. Males tended to be equally represented in all the four clusters with a somewhat higher percentage in the cues group, while female students tended to cluster in the cues group (55%) followed by health factors (28%). In a study by Mooney & Walbourn (2001), females avoided certain foods for their concern for weight, health and ethical reasons (especially when avoiding meat) more significantly than males. Marquis (2005) similarly reported that females were more significantly motivated by convenience, pleasure, price, and weight concerns than male students. We can thus conclude that

the dietary intake of male and female college students is influenced by different factors. Motives influencing eating behaviors among college students have been studied as well. House, Su, and Levy-Milne (2006) investigated what benefits college students believed result from a healthy diet. In this study, students at a Canadian university reported healthy eating to be helpful in providing a healthy appearance.

2.4.6 Peer influence

Individual influences are psychological as well as biological, whereas, environmental influences include immediate social environments such as family, friend, and peer networks and other factors such as school meals and fast food outlets. In addition, another important factor is social system or microsystem which includes mass media, marketing and advertising, social and cultural norms of the society. An adolescent's peers are the students with whom they have daily contact. This influence of peers is a major contributing factor in determining the behavior of a senior high school adolescent, much more so than in earlier years. (Rees, 1992) Adolescents spend more time with their peers during adolescence than they did as younger children, and peer influence on many behaviors seems to increase as children are beginning to develop a sense of separation from their parents. (Story et al 2002) If students receive negative feedback from their peers for eating low fat foods and vegetables, this will be a significant barrier to any health-promotion strategy.

2.4.7 Economic Influence

Increases in the cost of food often leads to changes in the quantity and type of foods that are purchased. This may result in a reduction in the amounts of foods consumed and/or the

substitution of higher priced foods for less expensive foods which are often less nutritious. Over a prolonged period, such changes may have negative consequences for nutrition, both through the quantity of foods consumed for maintaining energy balance as well as for the quality of foods consumed for maintaining sufficient intakes of proteins, fats and micronutrients such as vitamins, minerals and trace elements. In adults, this will affect the ability to do work and resist disease, and if this situation becomes widespread and prolonged, it will act as a brake on the economy. In women of child bearing age this will reduce birth weight, increase the prevalence of low birth weight babies and increase maternal and child mortality. These foods are crucial for the growth and development of young children. For children, the prevalence and severity of under nutrition, including stunting, micronutrient deficiencies, and wasting will increase as well as the number of child deaths from undernutrition. Higher expenses for food items will probably also lead to a decrease in expenditure on essential services (e.g. health expenses, school fees) which in turn can have immediate and long-term damaging effects on the growth of young children. The overall result will be a halt to the progress which has been made in several countries toward achieving the MDGs. The nutritional consequences of increased food prices will have long-lasting detrimental effects and needs to be prevented vigorously.

2.5 Impact of Adolescent Food Selection Practices on Their Health

Modern feeding habits have brought a number of lifethreatening nutritional disorders to Africa. These include: obesity, hypertension, diabetes mellitus, cancer and cardiovascular disorders. Good nutrition plays a major role in the prevention of several chronic diseases, including obesity, coronary heart disease, stroke, type 2 diabetes, and certain types of cancers. For this reason, nutrition is a priority area for humans (U.S. Department of Health and Human Services [U.S. DHHS], Public Health Service, 2000). In view of that, Demory-Luce and Jensen (2009)

explained that to help prevent diet-related chronic diseases, researchers have proposed that healthy eating behaviors should be established in childhood and maintained during adolescence. adolescents often fail to meet dietary recommendations for overall nutritional status and for specific nutrient intakes and that many adolescents receive a higher proportion of energy from fat and/or added sugar and have a lower intake of a vitamin A, folic acid, fiber, iron, calcium, and zinc than is recommended. The low intake of iron and calcium among adolescent girls is of great concern. Iron deficiency can impair cognitive function and physical performance, and inadequate calcium intake may increase fracture risk during adolescence and the risk of developing osteoporosis in later life (Demory-Luce& Jensen, 2009). These may have occurred sometimes due to the factors that influence their eating habits. Demory-Luce and Jensen (2009) noted this by stating that the dramatic increase in energy and nutrient requirements coincides with other factors that may affect adolescents' food choices and nutrient intake and thus nutritional status.

Adolescents are in between group with some nutrition problem commonalities with both children and adults. However, there is also evidence that dietary quality declines from childhood to adolescence. Reasons for this shift lies in the differentiation of lifestyle factors by embracing developmental, social and environmental changes. As the adolescent's progress in independence, they take control of what they eat, where and how. This generates new eating patterns and habits outside the home, with personal preferences taking dominance over eating habits learned previously. The combination of: concerns on physical appearance, the need for peer acceptance, and time restrictions due to busy schedules all affect eating patterns and food choices during this period. Adolescents are a heterogeneous age group with varieties in development, maturity and lifestyle. However, they cohere in their poor nutritional habits as one of the most significant risk behaviors that pose a threat to their health. Good nutrition plays a major role in the prevention of

several chronic diseases, including obesity, coronary heart disease, stroke, type 2 diabetes, and certain types of cancers. For this reason, nutrition is a priority area for humans (U.S. Department of Health and Human Services [U.S. DHHS], Public Health Service, 2000). In view of that, Demory-Luce and Jensen (2009) explained that to help prevent diet-related chronic diseases, researchers have proposed that healthy eating behaviors should be established in childhood and maintained during adolescence. , Demory-Luce and Jensen (2009) again reported that, national and population-based surveys have found that adolescents often fail to meet dietary recommendations for overall nutritional status and for specific nutrient intakes and that many adolescents receive a higher proportion of energy from fat and/or added sugar and have a lower intake of a vitamin A, folic acid, fiber, iron, calcium, and zinc than is recommended. The low intake of iron and calcium among adolescent girls is of concern. Iron deficiency can impair cognitive function and physical performance, and inadequate calcium intake may increase fracture risk during adolescence and the risk of developing osteoporosis in later life (Demory-Luce& Jensen, 2009).

These may have occurred sometimes due to the factors that influence their eating habits. Demory-Luce and Jensen (2009) noted this by stating that the dramatic increase in energy and nutrient requirements coincides with other factors that may affect adolescents' food choices and nutrient intake and thus nutritional status. Adolescents tend to eat differently than they did as children. Factors like the quest for independence and acceptance by peers, increased mobility, greater time spent at school/college and/or work activities and preoccupation with self-image that may affect adolescent's food choices. All these factors contribute to the erratic and unhealthy eating behaviors that are common among adolescents. Busy schedules may lead to meal skipping, snacking throughout the day and more eating away from home. Peer pressure is very

high during adolescence. The need to be in the step with trends and belong to the peer group leads to adolescent eating non-nutritious foods like pizzas, burgers coffees, soft drinks, chocolates and other roadside junk foods. Awareness about one's body and its appearance becomes the top priority. Deficiency is one of the most common nutritional disorders. National and population based surveys have found that adolescents often fail to meet dietary recommendations for overall nutritional status and for specific nutrient intakes. Many adolescents receive a higher proportion of energy from fat and/or added sugar and have a lower intake of vitamin A, folic acid, fiber, iron, calcium and zinc than is recommended. The low intake of iron and calcium among adolescent girls is of concern. Iron deficiency can impair negative functions and physical performance and inadequate calcium intake may increase fracture risk during adolescence and the risk of developing osteoporosis in later life“Iron requirements and iron deficiency in adolescents and calcium requirements in adolescents”. Girls skip meals in their anxieties to be thin. This attitude reduces their intake of food and thus their bodies become deficient of many important nutrients. This may lead to anemia and low bone density in adulthood.

Health disparities start early, with a generation of overweight adolescents becoming overweight adults who most likely will have an increased prevalence of obesity-related disorders such as hypertension and other cardiovascular diseases, diabetes, and dyslipidemia. The same students who are at risk for these health problems are also at risk for under nutrition related to some key nutrients. Many of the popular adolescent snack foods such as soda, chips, and fast foods are calorie dense but nutrient poor. This may be problematic because adolescence is developmentally a time of active growth and adequate nutrition is vital for bone development and physical maturation. For example, calcium, which is found in dairy products and dark leafy

greens, is important for attaining linear height and peak bone density. Adolescent girls because of their excessive concern with body weight or obsession with thinness are reported with moderate level of disordered eating behaviors. Disordered eating behaviors refer to many disturbed eating patterns which affect the nutritional status of adolescent girls shape, and physical appearance. This growing concern has led many of them to adopt dietary modifications that potentially throw serious threat on psychosocial development, nutritional status, and development of eating disorder. A number of factors like family environment, peer pressure, media habits, concern over body image, sociocultural and economic context, gender, and age make them feel dissatisfied with their body shape and weight. Many studies have found that adolescent girls are interested in losing weight and more than 40% have even tried to lose weight due to concern over their body weight. It has also been contended that skipping breakfast has deleterious effects.

2.5.1 Menstruation Disorder

Menstruation is defined as the periodic discharge of blood, mucus, and cellular debris from the uterine mucosa. The average length of menstrual cycle is 28 days with a normal range 21 to 35 day. Eating poorly or well can make a big difference on both the physical and mental aspects of the body. Eating healthfully can also boost the mood and lower the stress levels. Daily eating habits and the choice of food we eat significantly influence menstrual function in young women and several studies reported that; vitamin deficiency or hypoglycemia can induce premenstrual syndromes in which patients complain of irritability, constipation and edema several days before the onset of menstruation. 18-20, recently it was confirmed that the frequency of irregular menstruation was increased in young women who were currently on a diet and found out that; the intensity of dysmenorrhea was high in those with a history of dieting in adolescence,

suggesting that diet in adolescence has long lasting adverse effects on reproductive function in young women. From clinical experience, there is great evidence concerning the effect of diet and breakfast consumption on the woman health in general and reproductive function in a specific manner. Menstrual cycle is a major concept of female reproductive system in addition, there is increasing attention paid to the adverse effects of skipping breakfast and menstrual regularity, pain, and premenstrual syndromes.

2.5.2 Malnutrition

The EFA Global Monitoring Report (UNESCO 2011) states that more than a quarter of children below fifteen years of age in sub-Saharan Africa are underweight due to poor diet and malnutrition, making them more vulnerable to disease and less able to concentrate at school. Malnutrition is generally defined as a chronic condition which is a consequence of over- or under-consumption of any or several essential macro- or micronutrients relative to the individual's physiological and pathological requirements (Ecker and Nene 2012). Malnutrition is also a dangerous condition that develops when your body does not get enough nutrients to function properly. Poor nutrition can be caused by a lack of food or an unbalanced diet that's missing or insufficient in one or more nutrients (Chinyoka and Naidu, 2013). Children who do not consume adequate amounts of key nutrients, including calcium, potassium and vitamin C may be unable to work to their full potential at school (Nabarro et al. 2012). Shrestha & Pathak (2012) as well as Brauw et al. (2012) concur that underfeeding in childhood was thought to hinder mental development solely by producing permanent structural damage to the brain. A child's brain during the first three years of life is rapidly developing through generation of neurons, synaptogenesis, axonal and dendric growth, and synaptic pruning each of which build upon each other (Orazem et al., 2007). Any interruption in this process, such as trauma, stress,

under nutrition, or lack of nutrients can have long-term effects on the brain's structure and on the child's socio-emotional development and academic performance.

2.5.3 Obesity

Obesity is becoming more common as the African population leave their traditional feeding habits to embrace the modern ones. Due to urbanization people have changed their lifestyles and feed mostly on snacks. In addition, they use excessive amounts of fat and sugar, which predisposes them to obesity. The traditional diet is high in complex carbohydrates, as well as pulses and vegetables, lowering the risk of obesity being overweight during childhood and adolescence increases the risk of developing high cholesterol, hypertension, respiratory ailments, orthopedic problems, depression and type-two diabetes as a youth. Looking at the long-term consequences, overweight adolescents have a 70 percent chance of becoming overweight or obese adults, which increases to 80 percent if one or more parent is overweight or obese (Torgan, 2002). Obesity in adulthood increases the risk of diabetes, high blood pressure, high cholesterol, asthma, arthritis, and a general poor health status. Because of these health issues, these children are also missing more school than those students who are healthy (AASA; Marx & Northrop, 2000; Smith, 2003).

Undeniably, absenteeism places these children at risk for learning difficulties and failures. Yet, even more than being concerned over attendance, schools must consider the role they will play in combating health issues, such as obesity, that may cause impediments to the learning process. Being overweight during childhood and adolescence increases the risk of developing high cholesterol, hypertension, respiratory ailments, orthopedic problems, depression and type-two diabetes as a youth. Looking at the long-term consequences, overweight adolescents have a 70

percent chance of becoming overweight or obese adults, which increases to 80 percent if one or more parent is overweight or obese (Torgan, 2002). Obesity in adulthood increases the risk of diabetes, high blood pressure, high cholesterol, asthma, arthritis, and a general poor health status. Because of these health issues, these children are also missing more school than those students who are healthy (AASA; Marx & Northrop, 2000; Smith, 2003). Undeniably, absenteeism places these children at risk for learning difficulties and failures. Yet, even more than being concerned over attendance, schools must consider the role they will play in combating health issues, such as obesity, that may cause impediments to the learning process. Although school programs alone cannot overturn the unhealthful trends. As earlier mentioned, obesity is closely linked to the modern urban foods. The packaged snacks such as crisps, peanuts and chips contain a lot of salt, which is a risk factor for hypertension and obesity.

2.5.4 Ulcer

The acidity of the gastric contents in patients with duodenal ulcer tends to be higher than normal. This is true after a gruel test meal (Barford, 1928) and in Patients taking a light diet (Ronald, 1939; James and Pickering, 1949). One aim of most dietary regimes for peptic ulcer is to reduce the Acidity of the gastric contents. Acidity of the gastric contents has been measured in patients with duodenal ulcer while they took two 'therapeutic' diets and the results are compared with those obtained when the same patients took freely-chosen 'normal' meals. Since most adolescent like skipping meals and relying on their chop boxes the end result will lead to developing ulcers. In the absent of food in one's system or stomach hydrochloric acid in the stomach will tend to digest the stomach which is also protein. This normally leads to ulcer.

2.5.5 Infertility

Infertility is a disease of the reproductive system which affects both men and women with almost equal frequency. While there is no universal definition of infertility, a couple is generally considered clinically infertile when pregnancy has not occurred after at least twelve months of regular unprotected sexual activity. Ninety percent of the cases the cause is identifiable and in 50% of the cases appropriate therapy will result in pregnancy. Infertility is a global phenomenon that affects between 60 million and 168 million people worldwide. The majority of those who suffer live in the developing world. WHO-DHS Comparative Report in 2004 states that more than 186 million ever-married women in developing countries (excluding China) were infertile because of primary or secondary infertility. This number represents more than one in four ever-married women of reproductive age in these countries. The prevalence of infertility in Pakistan is 21.9% where, primary infertility is 3.9% and secondary infertility is 18.0%. Infertility is a source of distress for couples as societal norms and perceived religious dictums may equate infertility with failure on a personal, interpersonal, emotional or social level. Women bear the brunt of these societal perceptions in most of the cases.

Psychologically, the infertile woman exhibits significantly higher psychopathology in the form of tension, hostility, anxiety, depression, self-blame and suicidal ideation. In Latin America, strong social stigma attached to infertility and machismo cause women to blame themselves for infertility while in Mozambique, infertile women are excluded from certain social activities and traditional ceremonies. Social stigma regarding infertility is especially common across South Asia. For e.g. in Andhra Pradesh, India 70% of women experiencing infertility reported being punished with physical violence for their failure. Women are verbally or physically abused in their own homes, deprived of their inheritance, sent back to their parents, ostracized, looked

down upon by society, or even have their marriage dissolved or terminated if they are unable to conceive. One's nutritional pack from childhood to adolescents influence one's fertility rate in the future or adult life (Liu et al, 2006). The environment in the womb must be rich with enough nutrients before pregnancy can stay.

2.5.6 Osteoporosis

Osteoporosis is a disease that affects many millions of people around the world. It is characterized by low bone mass and micro architectural deterioration of bone tissue, leading to enhanced bone fragility and consequent increase in fracture risk. Fragility fractures are most common at the wrist, spinal vertebrae and hip, although they can occur throughout the skeleton. The incidence of vertebral and hip fractures increases exponentially with advancing age while that of wrist fractures levels off after the age of 60 years. Osteoporotic fractures are a major cause of morbidity and disability in the elderly and, in the case of hip fractures, can lead to premature death. In addition, they impose a considerable economic burden on health services, costing many billions of dollars each year. It is believed that, among genetic factors, estrogen is the most affective conjunction with environmental factors such as physical activity, medicine, smoking, being underweight, ovariectomy, alcohol drinking, nutrition, etc. Triglyceride, total cholesterol, LDL cholesterol, and Follicle-stimulating hormone (FSH) are negatively correlated with bone density and age especially in females, while income levels and housing types are closely related to bone mineral density status. As the number of family members is also related with bone mineral density status, postmenopausal women living alone are highly vulnerable and double burdened with relatively lower income and balanced diet for the lack of attention paid to cooking preparation. Also, not consciously selecting the right meal that contains the right nutrient such as vitamin D will result in vitamin D deficiency in adult life.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the method and techniques used for conducting the research. Specific areas covered include; Research Design, Population, Sampling procedure, Instrument, Data Collection and Data Analysis procedure.

3.1 Research Design

The study was intended to explore the food selection practices among adolescents' students and to explore its effect on their health. The descriptive survey design was employed. A survey is a study that is done by collecting information that will determine or demonstrate relationships and describe situations as they exist. It is done without any prior experiment to know things to manipulate. It is done without influence or interference on any variable to be studied as suggested by Bickman and Rog (1998).

Bickman and Rog (1998) suggest that descriptive studies can answer questions such as what is or what was. The descriptive survey design was chosen because it gives the researchers the opportunity to use both quantitative and qualitative data in order to find data and characteristics about the population or phenomenon that is being studied. That is it can provide a very multifaceted approach such as case study, observation or survey and thus gives several angles on the information to be collected. Another advantage is that information can be collected from individuals, personal accounts and from written data which can remove the barriers of strict academic approaches and researchers can witness how people experience an event. However, confidentiality is a problem with descriptive survey approach. That is participants may not

always give true answers to questions and some may refuse to answer any questions that they feel are too personal or difficult. Again, questions presented by researchers are predetermined and prescriptive and they may be tempted to choose the information that will conform to their hypothesis and ignore the rest.

3.2 Sources and Types of Data

Both primary and secondary data were collected for the study.

3.2.1 Primary Data Sources

Primary data for the study included personal data of respondents to the questionnaires and face-to-face interviews with the students and some of the pantry staff as well as some of the dispensary staff. The questions for the interview were built to reflect the main points and implications derived from the literature review. The interviews were carried out to ascertain the result of the study. Specific questions were asked during the interview, but there were room for open discussion so that interviews could share complementary information on various quality issues under discussion.

3.2.2 Secondary Data

Secondary data were collected from various sources. This includes scholarly journals, reports, educational guides, text books and interviews. Data from magazines and website of the school were also used. Ghauri and Gronhaug (2005) argue that the main advantage of using secondary data is enormous savings in resources, time and money. In General, it is more expensive to use

secondary data than Primary data. Secondary data can be used to compare with what exist in other companies in relation to the company which is being used for the study. Unlike primary data, secondary data generally provides a source of data that is both permanent and available in a form that may be check easily by others.

3.3 The Study Area

Effiduase is a small town and is the capital of Sekyere East, a district in the Ashanti Region of Ghana. The population of the district according to the 2010 Population and Housing Census stands at 62,172 with 29,511 males 32,661 females. The people there are mainly farmers. They mostly deal with plantain, cassava, orange, palm plantation. Most of the settlements (80%) are rural, with the. The people mainly engage in subsistent farming and small-scale livestock and poultry rearing. Agricultural production is mainly rain-dependent during a short period of rainy season (May – October), followed by a prolonged dry season.

3.3.1 Study Population

The target population according to Burns and Grove (1997) is the entire aggregation of respondents that meet the designated set of criteria. The target population in this study was all the students of **Effiduase Senior High School** in the Sekyere East District of the Ashanti Region who were considered as result of their proximity to the home town of the researcher and as such was considered to appropriate for the study. The totalnumbered of students was numbered about two thousand (2000). The accessible populations are students of Effiduase Senior High School for the researcher to conveniently reach them. However all the student of the school was a quite large number hence a sample size out of this population was appropriate for the study.

3.4 Sample Size and Sampling Technique

Kusi (2012) explains that “it is imperative for you to determine an aspect of population to be involved in your study”. A study may entail a large population unlike others with small population. In such situation, a portion of the entire population may be selected for study and this is what is termed as sample. The sample population of this particular study stood at ninety-four (94) students. This sample size was chosen for the researcher to be able to manage them and also to avoid superficial perspective on the side of the researcher.

Systematic sampling technique was employed in selecting the respondents for the study. It is a type of probability sampling method in which sample members from a larger population are selected according to a random starting point and a fixed, periodic interval. In a systematic sample, the elements of the population are put into a list and then every k th element in the list is chosen (systematically) for inclusion in the sample. This interval, called the sampling interval, is calculated by dividing the population size by the desired sample size. Despite the sample population being selected in advance, systematic sampling is still thought of as being random, provided the periodic interval is determined beforehand and the starting point is random. The main advantages of using systematic sampling technique for a large population is that, it allows the researcher to add a degree of system or process into the random selection of subjects. Another advantage using systematic sampling is the assurance that the population would be evenly sampled. For the purpose of this study, since the population of the school was about two thousand one hundred and fifty-eight (2158) and a sample size of about ninety-four (94) was needed, the researcher opted to use a random starting interval of 23 and so every 23th person in population was chosen as a respondent.

Hence the formulae $kth = \frac{N}{n}$

Where;

N= total population

kth= sampling interval

n=sample size needed

$\frac{2158}{94}=23$ or $2158/23=93.82609$ = therefore sample size is run to 94

3.5 Data Collection Instruments

The researcher used questionnaire in collecting data for the research. A questionnaire is a research instrument consisting of series of questions for the purpose of a survey or statistical study (en.wikipedia.org/wiki/questionnaire). The structured questionnaire type was used. Kusi (2012) explains that a structured questionnaire is a data collection instrument which contains predetermined standard questions or items meant to collect numerical data that can be subject to statistical analyses. He explains that the questions are close ended and answers outlined, which gives respondents the opportunity to respond to sample questionnaire questions.

The questionnaire was arranged in sections. The students responded to questions on biographical data, reasons for their food choices, food selection practices and the impact of food selection practices on their health. With the structured questionnaires, the respondents felt more comfortable responding to pre-determined responses than items that require them to express their views and feelings. However, the instrument did not allow the researcher to explore the feelings and experience of other participants (Kusi, 2012).

3.5.1 Interview

Interview can be defined as a qualitative research technique which involve conducting intensive individual interviews with a small number of respondents to explore their on a particular idea, program or situation (Boyce & Neal, 2006). Before the intervention: the researcher had a discussion with some of students individually to find out about the reason for their food choices and whether the food selection practices has resulted in any health related issue.

Out the 95 students sampled for the study, eight (8) of them representing two students chosen from the groups of four were interviewed to find out their views about the topic under discussion. The interview was direct face to face interaction between the researcher and the respondents with flexible and controlled approach. Questions were distributed evenly in flexible manner to enable the respondents concern to come out with their feeding in a good time. On the contrary and in some cases, the interviews were not rigidly controlled. It was a conductive but restricted atmosphere.

3.6 Data Collection Procedure

The researcher visited the school and briefed the school authorities and students on the purpose of the study and its educational implications. They were allowed some time to raise questions about the areas they could not understand. After the discussion, the questionnaires were distributed to them. The students were given ample time to answer the questionnaires which ensured objectivity. On the whole, the researcher spent one week for the collection of the data. All respondents responded to the questionnaires.

3.7 Validity and Reliability of Questionnaire

Validity and reliability in research is the degree of stability exhibited when measurement is repeated under identical conditions. Research validity refers to whether the researcher actually measured what was supposed to measure and not something else. Reliability means that responses to the questionnaire were consistent (Polit & Hunger, 1993). The researcher took the following steps in order to ensure the validity of the data. The questionnaire was based on information obtained from literature review. This was to ensure that it was a representation of child stress (Polit & Hunger, 1993). The questions were formulated in simple language for easy understanding. The researcher gave the questionnaire to colleagues for peer review. It was also given to the supervisor to scrutinize to ensure its validity. The colleagues and supervisor added some questions and certain aspects of the questionnaire were rephrased for clarity. The questionnaire was administered and collected by the researcher herself. This helped clarify where participants did not understand. This enables the researchers to find out ambiguities and unclear statement and guided the researcher in reshaping the instrument used for the actual administration. On the other hand, validity of research instrument is a measure of the extent to which the instrument must be appropriate for the study objectives to be achieved. To establish the validity, the researcher discussed the instrument with his supervisor who is knowledgeable in the field of research in this study; content validity was established and strengthened through an extensive review of literature.

3.8 Data Analysis

Data analysis is the process of evaluating data using analytical and logical reasoning to examine each component of the data provided (Madhu (1998). Data analysis procedure helps to arrive at

the data analysis. It helps convert data into information and explore the relationships between variables. After collecting the data, it was first edited. Madhu (1998) says “Information gathered during data collection may lack uniformity.” Some information given may need reconstruction. The editing relevant and appropriate errors were modified. The edited questionnaires were organised. Kusi (2012) explains that researcher may collect a massive amount of data or different kinds of data and it is important to spend enough time to organise them. The work was organized under biographical data, Influences of food selection practices, food selection practices, and how their foods selection practices affect their health. It was then coded. Coding involves assigning numbers or symbols to each response category in order to translate the raw data into a form that could be counted, tabulated or fed directly into a computer (Agyedu, Donkor & Oteng, 2011).

The researcher used tabular graphs and percentages in analysing the data. The representation of data in a table form is referred to as tabular representation. It allows data to be organised for further analysis. It also allows large amounts of raw data to be sorted and re-organised in a neat format. It also allows a dialogue between the text and the exact numbers in the result. Again, the different group classification allows comparison and better understanding of data. However, it is not the best to use in showing trend or relationship between variables.

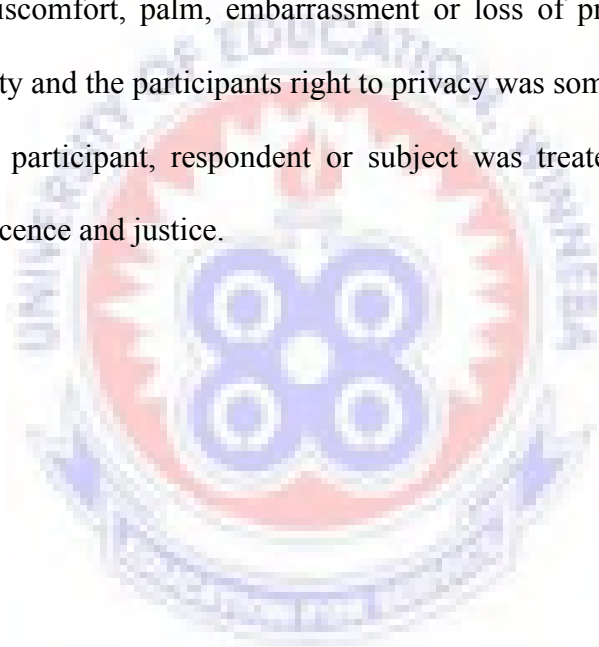
3.9 Ethical Considerations

To make this study ethical, the rights to self-determination, anonymity and confidentiality and informed consent were observed (Kusi, 2012). Written permission to conduct the study was sought from the Department of Catering and Hospitality. The respondents were informed of their rights to voluntarily participate or decline. They were informed about the purpose of the study

and were assured of not reporting any aspect of the information they provided in a way that will identify them. They were assured that there were no potential risks involved in the process.

Creswell (1999) also outlines three basic principles relevant to the ethics of research involving human subject, namely respect of person, beneficence and justice. In conducting research great care must be taken to understand and be familiar with any and all of the regulations associated with the field of the study. It was extremely important to protect the right of the participants.

Fraenkel Wallen (2006) argued that research just be designed so that a respondents does not suffer physical harm, discomfort, pain, embarrassment or loss of privacy, informed consent, confidentiality, anonymity and the participants right to privacy was some of the measure that was used to ensure that the participant, respondent or subject was treated with the principles of respect of person, beneficence and justice.



CHAPTER FOUR

ANALYSIS OF DATA AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents analysis and discussion of findings on the influences of food selection practices among boarding school students. The study was carried out at Dasease Agric **Senior High School** in the Ashanti North District of the Eastern Region. From a population of about 2150 students, a sample size of **94** respondents was selected. The content was analyzed according to the responses provided by the questionnaire respondents. The analysis and interpretation was done with the aid of secondary data in order to authenticate the results found.

4.2 Demographic Information of Respondents

This section sought to provide detail information on respondents with regards to their ages, gender, BMI(Weight) ,religious affiliation and class distribution of respondents.

Table 4.1 Gender Representation of Respondents

Gender	Frequency (f)	Percentage
Male	65	69.1%
Female	29	30.9%
Total	94	100

Source (Field Survey,2017)

Table 4.1 presents the gender representation of respondents. From the table out of the total respondents of 94, 65 respondents representing 69.1% were female whereas 2 respondents representing 30.9% were male. This statistics indicate that female boarding school students dominated the study more than their male counterpart which could stem from the fact that female

are more particular about what they eat when it comes to food choices or selection practices especially when in school.

Table 4.2 Ages of Respondents

Ages	Frequency(<i>f</i>)	Percentage
Below 15 years	6	6.4%
15- 17	52	55.3%
18-20	27	28.7%
Over 20	9	9.8%
Total	94	100

(Source: Field Survey,2017)

Table 4.2 outlines the various ages of respondents to the study. Out of the total respondents of 94, 52 respondents representing 55.3% fell between the ages of 15-17 while 27 respondents representing 28.7% fell between the ages of 18-20 and 9 respondents representing 9.8% fell between the age-group of respondents who were over 20 years. However, only 6 respondents representing 6.4% were below the age of 15 years. This statistics indicates that majority of respondents fell between the ages of 15-17 dominated the study followed by those who fell between the ages of 18-20.

Figure 4.1: Outlines the Religious Affiliation of Respondents

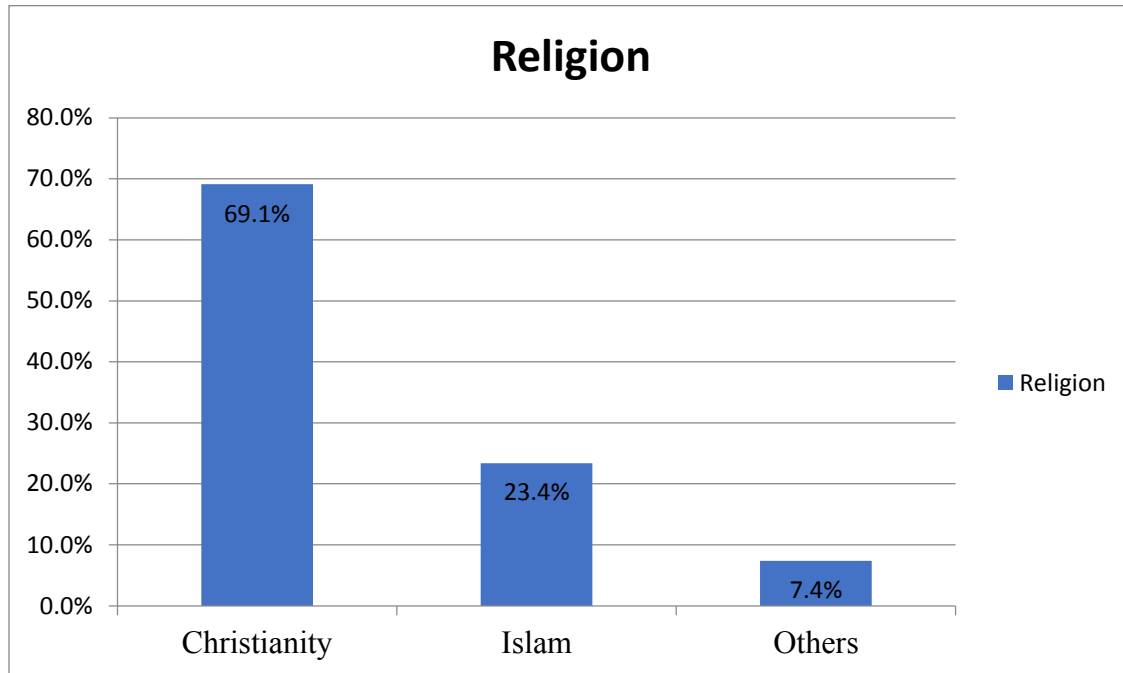


Figure 4.1 Religion plays an important role when it comes to food selection practices of an individual captures the religious affiliations of respondents to the study. The statistics on the figure shows that out of the total respondents of 94, 65 respondents representing 69.1% belong to the Christianity religion while 22 respondents representing 23.4% belong to Islamic religion and 7 respondents representing 7.4% belong to other religions. This implies that respondents who are Christians are dominant in the school.

Table 4.3 Status of Students in the School

Status	Frequency	Percentage
Boarding	73	77.7%
Day Students	15	16%
Hostel	6	6.4%
Total	94	100

(Source: Field Survey, 2017)

Table 4.3 outlines the status of students in the school. Out of the total respondents of 94, 73 respondents representing 77.7% indicated that they were boarders while 15 respondents representing 16% confirmed that they were day students and 6 respondents representing 6.4% also confirmed that they were in the hostels. This analysis implies that majority of the students are boarding students therefore selecting the type of food they like solely will depend on them throughout the term will face daunting task of choosing their choice of food.

Table 4.4 Occupation of Parents

Occupation	Frequency	Percentage
Professionals	14	14.9%
Businessmen/Women	31	33%
Farmers	42	44.7%
Retired Civil Servant	7	7.4%
Total	94	100

(Source: Field Survey, 2017)

Table 4.4 shows the occupations of parents of respondents. This was necessary because the occupation of parents will determine the level of income of parents which could have effect on the

food selection practices of respondents. Out of the total respondents of 94, 42 respondents representing 44.7% revealed that their parents are farmers while 31 respondents representing 33% confirmed that their parents are Businessman/Businesswoman and 14 respondents representing 14.9% reported that their parents are professionals like teachers, nurses and bankers. However, 7 respondents representing 7.4% reported that their parents are retired civil servants.

This indicates respondents whose parents that are farmers dominated the study followed by those whose parents are Businessman/Businesswomen.

4.3 Food Selection Practices of Adolescents

This section discusses how and why adolescent student select and choose the kind of food they eat when in school.

Table 4.5 Awareness of Adolescents' Food Selection Practices

Responses	Frequency	Percentage
Yes	79	84%
No	15	16%
Total	94	100

(Source: Field Survey, 2017)

Table 4.5 discusses the views of respondent as to whether they are aware that adolescent practices. From the table, out of the total respondents of 94, 79 respondents representing 84% of the total respondents responded Yes to the fact that they are aware that adolescent have certain food selection practices whereas 15 respondents representing 16% answered no to the fact that adolescent have certain food selection practices. This implies that respondents are aware that adolescents have certain food selection practices since majority of respondents responded to that fact.

;

Table 4.6: Adolescents Dietary Practices

Practices	N	Never	Occasionally	Sometimes	Often	Always	Mean	Std. Deviation
Snacking	94	7(7.4%)	21(22.3%)	47(50%)	11(11.7%)	8(8.5%)	2.91	.991
Dieting	94	10(10.6%)	38(40.4%)	18(19.1%)	18(19.1%)	10(10.6%)	2.79	1.190
Skipping Meal	94	3(3.1%)	21(22.3%)	54(57.4%)	11(11.7%)	5(5.3%)	3.00	.790
Late Eating	94	15(16%)	50(53.2%)	18(19.1%)	5(5.3%)	6(6.4%)	2.33	1.020
Out Eating	94	5(5.3%)	25(26.6%)	19(20.2%)	39(41.5%)	6(6.4%)	3.17	1.064
Total Mean	94							

(Source: Field Survey, 2017)

Table 4.6 outlines the dietary practices of adolescent in the Dadease Agric Senior High School. Concerning the issue of snacking, out of the total respondents of 94, 47 respondents representing 50% practice it sometimes, 21(22.3%) practice it occasionally, 11(1.7%) practice it often, 8 (8.5%) practiced it always and 7(7.4%) never practiced it obtained a mean rate of 2.91.

Secondly, with regards to dieting 38(40.4%) practice it occasionally, 18(19.1%) practiced it sometimes, 18(19.1%) practice it often, 10(10.6%) practiced it always and 10(10.6%) also never practiced it obtained a mean of 2.79.

Additionally, on adolescent practices on skipping meals, 54(57.4%) practiced it sometimes, 21(22.3%) practiced it occasionally, 11(11.7%) practiced it often, 5 (5.3%) and 3(3.1%) never practiced it obtained a mean rate of 3.00.

Furthermore, concerning late eating by respondents, 50(53.2%) practiced it occasionally, 18(19.1%) practiced it sometimes, 15(16%) never practiced it, 6(6.4%) practiced it always and 5(5.3%) practiced it often obtained a mean rate of 2.33.

Finally, with regards to out eating, 39(41.5%) practiced often, 25(26.6%) practiced it occasionally, 19(20.2%) practiced it sometimes, 6(6.4%) practiced it always and 5(5.3%) never practiced it attracted a mean rate of 3.17.

Table 4.7: Number of Times Respondents Take Snacks in a Day

Responses	Frequency	Percentage
Zero	6	6.4%
Once	46	49%
Twice	33	35.1%
Three or more times	9	9.6%
Total	94	100

(Source: Field Survey, 2017)

Table 4.7 outline number of times respondents take snack in a day. According to the statistics out of the total respondents of 94, 46 respondents representing 49% confirmed that they take snacks once in a day while 33 respondents representing 35.1% indicated that they take in snack twice a day and 9 respondents representing 9.6% indicated that they take in snack 3 or more times daily. However, 11 respondents representing 11.7% claimed that they do not take in snacks at all. This statistics implies that majority of respondents take in snack once in a day.

Table 4.8: What do you normally take at break time

Response	Frequency	Percentage
Heavy Meal	59	62.8%
Mashed Kenkey	19	20.2%
Sobolo and Breads	11	11.7%
Fruits	4	4.3%
Cornflake	1	1.1%
Total	94	100

(Source: Field Survey, 2017)

Tables 4.8 illustratethe type of food respondents normally take at break time. Out of the total respondents of 94, 59 respondents representing 62.8% confirmed that they take in heavy meal during break hours while 19 respondents representing 20.2% indicated that they take in mashed kenkey during break time and 11 respondents representing 11.7% claimed that they take in

Sobolo and bread during break time. Additionally, 4 respondents representing 4.3% responded that they take in fruits during break time and only 1 respondent representing 1.1% claimed that she takes in cornflakes during break time. These suggest that respondents take in heavy meals since more than 60% of them attested to that fact.

Table 4.9: Do you avoid or select certain food because of dieting

Response	Frequency	Percentage
Yes	67	71.3%
No	27	28.7%
Total	94	100

(Source: Field Survey, 2017)

Table 4.9 illustrates the views of respondents as to whether they avoid or select certain food because of dieting. Out of the total respondents of 94, 67 respondents representing 71.3% answered yes to the fact that they avoid or select certain food because of dieting whereas 27 respondents representing 28.7% answered no to the fact that they do not avoid or select certain food because of dieting. The statistics implies that respondents avoid or select certain food because of dieting as indicated by a little over 70% of respondents.

Table 4.10: Number of Times You Skip Meal in a day

Response	Frequency	Percentage
None	9	9.6%
Once	72	76.6%
Twice	13	13.8%
Total	94	100

(Source: Field Survey, 2017)

Table 4.10: Presents the number of time respondents skip meal in a day. From the table, it is evident that out of the total respondents of 94, 72 respondents representing 76.6% indicated that

they skip meal once a day while 13 respondents representing 13.8% answered that they skip meal twice a day and 9 respondents representing 9.6% claimed that they never skip meal while in school. This goes to suggest that respondents do actually skip meal once in a day since a little over 75% responded to that fact.

Table 4.11 Respondents Reason for Skipping Meal

Response	Frequency	Percentage
The foods are not tasty	58	61.7%
Skip meal to lose weight	23	24.5%
Feel shy of the opposite sex	2	2.1%
Feel lazy to go to dining	7	7.4%
Don't have appetite for food	4	4.3%
Total	94	100

(Source: Field Survey, 2017)

Table 4.11 outlines the various reasons respondents skip meal when in school. From the total respondents of 94, 58 respondents representing 61.7% responded that they skip meal because food being at the school canteen is not tasty while 23 respondents representing 24.5% indicated that they skip meal for the purpose of losing weight and 7 respondents representing 7.4% claimed that they skip meal because they feel lazy to go to dining. However, 4 respondents representing 4.3% conceded that they skip meal because they don't have appetite for food and 2 respondents representing 2.1% also claimed that they skip meal because they feel shy of the opposite sex. This statistics goes to suggest that respondent mainly skip due to the fact foods being cooked in the school are not tasty as claimed by a little over 60% of respondents.

Table 4:12 Do You Normally Eat After Prep

Response	Frequency	Percentage
Yes	81	86.2%
No	13	13.8%
Total	94	100

(Source: Field Survey, 2017)

Table 4.12 presents respondents view as to whether they eat after prep. From the total respondents of 94, 81 respondents representing 86.2% answered yes to the fact that they eat after prep whereas 13 respondents representing 13.8% answered no to the fact that they eat after prep. This indicates that respondents eat after prep as indicated by majority of respondents.

Table 4.13: What do You Normally take After Prep

Response	Frequency	Percentage
Milo and Biscuit	34	36.2%
Gari and Shito	41	43.6%
Gari Soakings	17	18.1%
Rice and Stew	2	2.1%
Total	94	100

(Source: Field Survey,2017)

Table 4.13 shows responds view as to what they normally take after prep. From the total respondents of 94, 41 respondents representing 43.6% indicated that they take in gari and shito while 34 respondents representing 36.2% revealed that they take in milo and biscuit and 17 respondents representing 18.1% confirmed that they take in rice and stew after prep hours. This statistics indicates that majority of respondents take in gari and shito followed by those who take in milo and biscuit.

Table 4.14 Meal Normally Skip

Response	Frequency	Percentage
Breakfast	49	52.1%
Lunch	31	33%
Supper	9	9.6%
None	5	5.3%
Total	94	100

(Source: Field Survey, 2017)

Table 4.15 shows the meals normally skip by respondents. Out of the total respondents of 94, 49 respondents representing 52.1% indicated that they normally skip breakfast while 31 respondents representing 33% confirmed that they normally skip lunch and 9 respondents representing 9.6% confirmed that they normally skip supper. However, 5 respondents representing 5.3% answered that they never skip any of the above mentioned meals. This implies that majority of respondents skip breakfast followed by those who skip lunch when in school.

Table 4.15: Influences of Adolescents' Food Selection Practices

Influences	N	Not At All	Very Little	Somewhat	To a great Extent	Mean	Std. Deviation
Parental	94	7(7.4%)	21(22.3%)	25(26.6%)	41(43.6%)	3.02	1.005
Peers	94	2(2.1%)	10(10.6%)	63(67%)	19(20.2%)	3.05	.628
Economic	94	7(7.4%)	10(10.6%)	22(23.4%)	55(58.5%)	3.33	.943
Body Image	94	15(16%)	59(62.8%)	15(16%)	5(5.3%)	2.11	.725
Media	94	7(7.4%)	50(53.2%)	25(26.6%)	12.8%	2.45	.811
Taste	94	4(4.3%)	8(8.5%)	22(23.4%)	60(63.8%)	3.47	.826
Availability	94	5(5.3%)	11(11.7%)	29(30.9%)	49(52.1%)	3.31	1.322
Religion	94	14(14.9%)	52(55.3%)	25(26.6%)	3(3.2%)	2.18	.718
Sports	94	8(8.5%)	67(71.3%)	15(16%)	4(4.3%)	2.16	.627
Medical	94	4(4.3%)	9(9.6%)	66(70.2%)	15(16%)	2.98	.655
Total Mean	94						

(Source: Field Survey, 2017) $\bar{x} \geq 3.0 = \text{extent of degree}$

Table 4.15 Sought to gather views of respondents on the major influences of respondents food selection practices. The table presents a likert scale ranking format for the respondents to rank in order of degree of extent, (4) To a great extent, (3)Somewhat, (2)Very Little , (1)No At All.

From table 4.15, the first influence as voted by respondents was “Taste” influence on their food selection practices which attracted a mean rate of **3.47** while “economic” influence on food selection practices also obtained a mean rate of **3.33** and “availability” influence of respondents food selection practices clocked a mean rate of **3.31**.

Also, the next influence to consider was ‘Peer’ influence on food selection practices which attracted a mean rate of **3.05** and parental influence which had 41 respondents representing (43.6%) voting for it attracted a mean rate of **3.02**. However, these influences could not meet the $\bar{x} \geq 3.0$ = extent of degree mark were “medical” influence which attracted a mean rate of 2.98 while “media” influence on food selection practices gained a mean rate of **2.45** and “religious” influence scored a mean rate of **2.18**. Finally, “sports” influence on food selection practices attracted a mean rate **2.16** and “Body image” influence of food selection practices also attracted a mean rate of **2.11**. This statistics implies that five (5) items namely (Taste, Availability, Economics, Peers and Parental) were the most influential elements that influence adolescents to select the kind of foods the buy.

Table 4.16 Impact Adolescent Food Selection Practices on their Health Status

Impacts	N	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Std. Deviation
Obesity	94	17(18.1%)	26(27.7%)	35(37.2%)	16(7%)	2.53	.680
Menstrual Disorder	94	20(21.3%)	17(18.1%)	34(36.2%)	23(24.5%)	2.64	.599
Infertility	94	22(23.4%)	17(18.1%)	35(37.2%)	20(21.3%)	2.56	.667
Malnutrition	94	10(10.6%)	6(6.4%)	61(64.9%)	17(18.1%)	2.90	.817
Height	94	25(26.6%)	49(52.1%)	12(12.8%)	8(8.5%)	2.03	.861
Complexion	94	14(14.9%)	34(36.2%)	34(36.2%)	2(12.4%)	2.47	.900
Average (Mean)	94						

(Source: Field Survey,2017) $\bar{x} \geq 2.5$ = extent of degree

Table 4.16 Sought to gather views of respondents on the impact of their food selection practices on their health status. The table presents a likert scale ranking format for the respondents to rank in order of Agreement, (4) Strongly Agree, (3) Agree, (2) Disagree, (1) Strongly Disagree.

From table 4.16, the first impact as a result of food selection practices as agreed by respondents was “Malnutrition” impact which attracted a mean rate of **2.90** followed by “Menstrual Disorder” impact on food selection practices which scored a mean rate of **2.64** and “Infertility” impact of food selection practices attracted a mean rate of **2.56**.

Additionally, food selection impact on obesity also attracted a mean rate of **2.53**. However, those impacts could not meet the $\bar{x} \geq 2.5$ = agreed mark were food selection practices impact on “complexion” which secured a mean rate of **2.47** while food selection impact on “height” recorded a mean rate of **2.03**.

These statistics suggest that the elements that have major impact adolescent health status are (Malnutrition, Menstrual disorder, Infertility and Obesity)

CHAPTER FIVE

SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter of the study discusses the summary of finding, conclusion drawn from the outcomes and recommendation made for the study. The study sought to assess the influences of food selection practices on adolescents and its impact on their health status.

5.2 Summary of Findings

Students of Dadease Agric senior high are faced with various health problems as a result of their food selection practices which the authorities of the school have not taken the pain to address. Based on the analysis and discussion of data that was curled from the analysis of results the following findings were arrived at;

- ❖ The study found out that majority of the students were boarders therefore selecting the type of food they like solely depend on them. The students were therefore faced with daunting task of choosing their choice of food based on lot of factors out of their conviction.
- ❖ The study alsofound out most of the responds parents are mostly farmers therefore are not economically sound so would always consider economic implication when selecting their food.
- ❖ The study also revealed that majority of respondents have problems with certain food selection practices since majority of respondents have numerous challenges in selecting a particular type of food.

- ❖ It was also established that adolescents dietary practices that students of Dadease Agric Senior High School normally practices are Meal Skipping and out eating which was responded to by majority of students.
- ❖ It was established that majority of students take in heavy meals during break time due to economic reason and its availability, however, few others also take in snacks.As results of that most students avoid or select certain food because of dieting.
- ❖ Additionally, the study found out that respondents do actually skip meal once in a day as result of various challenges encountered by adolescent when in school. Respondents mainly skip meal due to the fact foods being cooked in the school are not tasty as claimed by student who skip meals.
- ❖ It was also revealed that majority of respondents take in gari and shito followed by those who take in milo and biscuit after prep.
- ❖ The study found out that five (5) items namely (Taste, Availability, Economics, Peers and Parental) were the most influential elements that influence adolescents to select the kind of foods the buy.
- ❖ Finally, the study found out that the elements that have major impact on adolescents' health status are (Malnutrition, Menstrual disorder, Infertility and Obesity).

5.3 Conclusion

In conclusion, food selection practices and its impact on their health status among adolescent students in Ghana is on the rise which has not been taken seriously by both schools authorities and parents. Similar cases of food selection practices among students also existed in Dasease Senior high school hence the following conclusions were drawn based on the findings of this study.

In conclusion, the study revealed that Student in Dadease Agric High Schools are practicing various unhealthy eating habits which include meal skipping, particularly breakfast, snacking daily on high-content fatty and energy-dense foods, such as soft drinks and pastries during school hours. It is important that frantic efforts are made to help adolescents cultivate an interest in eating healthy foods and developing healthy dietary practices. This will go a long way to help reduce the incidence of diet-related health conditions such as hypertension, menstrual disorders, candidiasis, obesity and diabetes, the prevalence of which is increasing in among Ghanaian Adolescents students, especially those in boarding schools who have to choose what eat by themselves.

It is can also be concluded that since most of the respondents eat late at night which might affect the health which could bring about an increase in obesity among students girl if it continues.

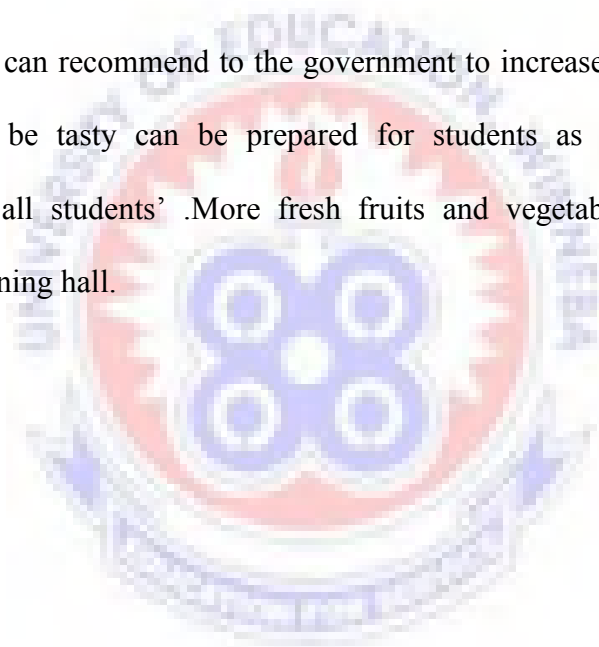
Finally, there are many influences on food selection practices which provide a whole set of means to intervene into and improve student food choices. There are also a number of barriers to dietary and lifestyle change, which vary depending on life stages and the individual or group of people in question.

5.4 Recommendation

From the foregoing findings for the study, the following recommendations are made:

- ❖ It recommended that lessons on healthy nutrition practices in school should be added to the curriculum of Senior High Schools, as has been done in some developing countries in order to educate them on what to eat and what not to eat.

- ❖ Food vendors on school premises should be encouraged to provide at affordable prices a wide variety of healthy foods such as appealing fresh fruits and vegetables for students to buy.
- ❖ School authorities' must intervene to reduce the sales of toffees and soft drinks school environments, by limiting the sale of soft drinks and replacing them with more nutritive beverages such as natural fruit juices.
- ❖ Regulations could be made to control students on when and how often they can visit their chop boxes.
- ❖ School authority can recommend to the government to increase the feeding grant so that meals that will be tasty can be prepared for students as well as making dinning compulsory for all students' .More fresh fruits and vegetables should be served to students at the dining hall.



REFERENCE

- Agyedu, G. O., Donkor, F & Obeng, S. (2010). *Teach yourself research methods*. Kumasi; Ebens Press.
- American College Health Association. (2006). American College Health College Health Assessment (ACHA-NCHA) spring 2004 reference group data report (abridged). *Journal of American College Health*, 54, 201–211.
- Anand, W., Kanth, T., and Kapoar, S., (1998): From adolescent to young adult: A prospective study of parent-child relations during the transition to adulthood. *Journal of Marriage and the Family*, 59, 670-686.
- Anderson, D. A., Shapiro, J. R., & Lundgren, J. D. (2003). The freshman year of college as a critical period for weight gain: An initial evaluation. *Eating Behaviors*, 4, 363–367.
- Ayisi-Addo (2006). Nutrition of Secondary School Children Unpublished Dissertation, submitted to the Department of Nutrition and Food Science, Legon.
- Bediako, T. (2006). *Food and Nutrition for Senior Secondary Schools*. Accra: Ministry of Education.
- Bickman & D.J. Rog (Eds.), *Handbook of Applied Social Research methods*. Thousand Oaks, CA: Sage.
- Bin Zaal AA, Musaiger AO, D'Souza R (2009) Dietary habits associated with obesity among adolescents in Dubai, United Arab Emirates. *NutrHosp* 24: 437-444.
- Brevard, P. B., & Ricketts, C. D. (1996). Residence of college students affects dietary intake, physical activity, and serum lipid levels. *Journal of the American Dietetic Association*, 96(1), 35–38.
- Brown EB: Nutrition through the Life Cycle. 2008. Thomson-Wardworth, Australia, 353-383.
- World Health Organization (2005). Nutrition in adolescence – Issues and
- Burns, N. & Grove, S. K. (1997). *The practice of Nursing Research*. Blackwell Publishing Limited. New York
- Buxton, C.N.A, (2014) Ghanaian Junior High School Adolescents Dietary Practices and Food Preferences: Implications for Public Health Concern. *J Nutr Food Sci* 4: 297.

- Challenges for the Health Sector. WHO discussion papers on adolescence. WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland
- Choi ES, Shin NR, Jung EI, Park HR, Lee HM, et al. (2008) A study on nutrition knowledge and dietary behavior of elementary school children in Seoul. *NutrResPract* 2: 308-316.
- Chung SJ, Lee YN, Kwon SJ (2004) Factors associated with breakfast skipping in elementary school children in Korea. *Korean Journal of Community Nutrition*
- Cruz Amorim, J. (2000). Dietary habits and Nutritional Status of Adolescents over Europe Southern Europe. *Eur. J. Clin. Nutr.*, **54**: (Suppl 1)S29-S35. MEDLINE
- Driskell, J. A., Kim, Y.-N., & Goebel, K. J. (2005). Few differences found in the typical eating and physical activity habits of lower-level and upper-level university students. *Journal of the American Dietetic Association*, 105, 798–801.
- Ghauri, P. & Gronhaug, K. (2002). *Research Methods in Business Studies*. Harlow: Pearson Education.
- Grace, T. W. (1997). Health problems of college students. *Journal of American College Health*, 45, 243–250.
- Guthrie, H. A. (1971). *Introductory Nutrition*, London: C.V. Mosby Co.
- Hamilton, E. M. , Whitney, E. and Sizer, F.S. (1988) . *Nutrition Concepts and Controversies*. New York: West Co., pp. 421-441.
- Hurlock, E. (1978) *Child Development in Singapore* : McGraw-Hill Book Co.
- Isa, K. A. M. & Masuri, M. G. (2011). The Association of Breakfast Consumption Habit, Snacking Behaviour and body mass Index among University Students. *American Journal of Food and Nutrition*. 1 (2) pp55-60
- Kaplan, P. S. (2004). *Adolescence*. Boston: Houghton Mifflin Company.
- Kusi, H. (2012). *Doing qualitative research, a guide for researchers*. Accra. Emmpong Press
- Lavik, J. N. (1981) The Interrelationship between Nutrition and Social Development in Adolescence. *Nutrition Review*, 39: 112-113.
- Lien N, Lytle LA, Klepp KI (2001) Stability in consumption of fruit, vegetables, and sugary foods in a cohort from age 14 to age 21. *Prev Med* 33: 217-226. Mikkilä V, Räsänen L, Raitakari OT, Pietinen.

- Mahdu (1998) *Data exploration and statistics*. Helsinki Helsinki Uni. Press.
- Manwa, L (2013). University Students' Dietary Patterns: A Case of a university in Zimbabwe: *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)* 4(1):191-197 (ISSN:2141-6990)
- Mead, M (1943) The problem of Changing food Habit. *Bulletin of National Research Council*, 108 : 20
- Oguntona, C. R. B. and Oguntona, T. E. (1987). The food and Nutrient intake of Adolescent's in Borno, Nigeria. *Nutrition Report International*. 36: 981-983.
- Ojofeitimi, E.O., Iyanuoluwa, A, Olugbenga-Bello, Adebode, D.A., Adeomi, A.A (2011) Pattern and determinants of obesity among adolescent females in private and public schools in the Olorunda Local Government Area of Osun State, Nigeria: a comparative study. *Journal of Public Health in Africa* 2: 45-50
- Papadaki, A., Hondros, G., Scott, J. A. and Kapsokefalou, M. (2007). Eating habits of University students living at, or away from home in Greece *Appetite* Volume 49, Issue 1 pp 169-176
- Polit, K. M. & Hungler, G. S. (1993). *Research design and methods*. Australia Yale University Press.
- Quatromoni PA, Copenhafer DL, D'Agostino RB, Millen BE (2002) Dietary patterns predict the development of overweight in women: The Framingham Nutrition Studies. *J Am Diet Assoc* 102: 1239-1246.
- Racette, S. B., Deusinger, S. S., Strube, M. J., Highstein, G. R., & Deusinger, R. H. (2005). Weight changes, exercise, and dietary patterns during freshman and sophomore years of college. *Journal of American College Health*, 53, 245–251.
- Reilly, J.J., Kelly J (2011) Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: systematic review. *Int J Obes (Lond)* 35: 891-898.
- Rolland-Cachera, M.-F., Bellisle, F. & Deheeger, M. (2000) Nutritional status and food intake in adolescents living in Western Europe. *Eur. J. Clin. Nutr.*, 54, Suppl. 1, S41-S46.
- Rozin, P. (1990). Acquisition of Stable Food Preferences. *Nutrition Review*, 48: 8-10.
- Sallis, J.F, Glanz, K (2006) The role of built environments in physical activity, eating, and obesity in childhood. *Future Child* 16: 89-108.

- Samuelson, G. (2000) Dietary habits and nutritional status and intake in adolescent over Europe. An overview of current studies in the Nordic Countries. *Eur J. Clin Nutr.* 54. Suppl. 1, \$21-\$23
- Siega-Riz, M (1998) Effect of a habit of skipping meals on dietary life of college students. *Jpn. J. Nutr* 44, 257-265. (in Japanese)
- Spindler, E. B. (1963). Motivating Teenagers to Improve Nutrition. *Journal of Home Economics*, 55 : 28-32.
- Story, M., Tompkins, R. A., Bass, M. A. and Wakefield, L.M. (1986). Anthropometric Measurements and Dietary intakes of Cherokee Indian Teenagers in North Carolina. *Journal of American Dietetic Association*, 86: 1555-1560.
- Uddoh, C. K. O. (1980). *Nutrition*. Hong Kong: McMillan.
- Viikari J (2004) Longitudinal changes in diet from childhood into adulthood with respect to risk of cardiovascular diseases: The Cardiovascular Risk in Young Finns Study. *Eur J Clin Nutr* 58: 1038-1045.
- Wang Y, Lobstein T (2006) Worldwide trends in childhood overweight and obesity. *Int J Pediatr Obes* 1: 11-25.
- Whitney E.N., and Cataldo, L.K., (1983) *Nutrition for health and healthcare* L. Graham. 2nd Wadsworth Thomson learning, Inc. USA.
- World Health Organization (2005). *Nutrition in adolescence – Issues and Challenges for the Health Sector*. WHO discussion papers on adolescence. WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland
- Worthington-Roberts, B. S. & Williams, S. R. (2000). *Nutrition throughout the life cycle*. 4th Edition.

APPENDIX
QUESTIONNAIRES

RESPONDENT CONSENT NOTE

I understand the basic nature of the study and agree that any information given is beneficial.

I am aware that the information being sought in a specific manner so that no identifiers are needed and so that confidentiality is guaranteed.

Please tick[] accordingly where applicable

SECTION:1 DEMOGRAPHIC DATA

Demographic information about respondents

1. Age.....(Years).
 - a. 6 – 10 []
 - b. 11 – 16 []
 - c. 17 – 21 []
 - d. 21 and above []
2. Marital status
 - a. Single []
 - b. Married []
 - c. Separated []
 - d. Divorced []
 - e. Widowed []
3. Educational level
 - a. Basic []
 - b. Secondary/Technical []
 - c. Post-Secondary/Tertiary []
 - d. Other []
4. School status
 - a. Boarding []
 - b. Day []
 - c. Hostel []
5. Sex
 - a. Male []
 - b. Female []
6. Occupation of Parents
 - a. Professionals []
 - b. Businessmen/women []
 - c. Housewives []
 - d. Farmers []
7. What is your weight?.....kg

SECTION:2 FOOD SELECTION PRACTICES OF ADOLESENTS

8. Are you aware that adolescents have certain practices when it comes to food selection?

- a. Yes [] b. No []

9. Some food selection practice of adolescents

Instruction: For each of the following, kindly respond to the statement by ticking the four (4) points scale using the following key (1 – Strongly Disagree, 2 – Disagree, 3 – Agree, 4 – Strongly Agree) as sincerely as possible.

No.	PRACTICES	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
a.	Snacking				
b.	Dieting				
c.	Skipping meal				
d.	Late eating				
e.	Out eating				

10. How many times in the day do you take snacks?

- a. 0 [] b. 1 [] c. 2 [] d. 3 [] e. 4 or more []

11. What do you take at break time?

- a. Heavy meal [] b. Mashed kenkey [] c. Sobolo and Breads []
 d. Fruits [] e. Cornflakes []

12. Do you avoid or select certain food because you are dieting?

- a. Yes [] b. No []

13. How many times of the day do you skip a meal?

- a. None [] b. 1 [] c. 2 []

14. Why do adolescents skip meals?

- a. The foods are not tasty [] b. Feel lazy to go to dining []
c. Wants to lose weight [] d. Dont have appetite for food []
e. Feels shy of the opposite sex []

15. Do you eat at prep or after prep?

- a. Yes [] b. No []

16. If Yes, what do you often take?

- a. Milo and biscuit [] b. Soakings []
c. Gari and Shito [] d. rice and stew []

17. How many times do you eat outside the home or dining in a day?

- a. None [] b. 1 [] c. 2 [] d. 3 and more []

18. Which of the following meal time do you normally skip?

- a. Breakfast [] b. Lunch [] c. Supper [] d. None []

SECTION: 3 INFLUENCES OF ADOLESCENT FOOD SELECTION PRACTICE

19. Adolescent food selection practices have certain influence

- a. True [] b. False []

20. If true answer the following

Use the following response by circling the number of the four (4) point scale using the following key (1 – Strongly Disagree, 2 – Disagree, 3- Agree, 4 – Strongly Agree)

No.	INFLUENCES	STRONGLY	DISAGREE	AGREE	STRONGLY
-----	------------	----------	----------	-------	----------

		DISAGREE			AGREE
a.	Parental				
b.	Peers				
c.	Economic				
d.	Body image				
e.	Media				
f.	Taste				
g.	Availability				
h.	Religion				
i.	Sports				
j.	Medical Grounds				

21. The way you select your food is influence by how you are brought up

- a. Yes [] b. No []

22. Use the four (4) scale point to answer the following

No.	PARENTAL INFLUENCE	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
a.	On what we select to eat at break time.				
b.	On what we choose to eat at dining or not.				
c.	On eating late.				
d.	Not eating fruits and raw vegetables frequently				
<u>PEER INFLUENCE</u>					
e.	How we select food at canteen				
f.	The kinds of provisions brought to school.				
g.	How frequency snack are taken				

h.	On late eating				
<u>ECONOMIC INFLUENCE</u>					
i.	Good economic status affect how often one snack				
j.	Out eating is affected by ones economic status				
k.	Economic status influence the kind of food bought at break time school.				
<u>BODY IMAGE</u>					
l.	Most adolescents eat snack because they want to slim down.				
m.	Adolescents skip meals due to how they perceive their body image				
<u>MEDIA INFLUENCE</u>					
n.	Food adolescent select during break time is influence by what they see in the media.				
o.	Adolescent provisions they brought to school are influence by what they see in the media.				
<u>TASTE</u>					
p.	Adolescents eatsnack a lot due to its taste.				
q.	Some meals are skipped due to un pleasant taste.				
r.	Out eating are mostly influence by the taste of the food				

<u>STUDENTS STATUS</u>					
s.	Boarders snack a lot.				
t.	Day students eat healthy because of their parents guidance.				
u.	Out eating are mostly done by day students				
v.	Late eating are mostly done by boarders.				
w.	SPORTING ACTIVITIES				
x.	Food eaten by students is mostly influenced by the sports involved				
y.	Sports students are on special diet so do eat heavy foods				
z.	RELIGION/Practicals				
aa.	Some students do not eat some foods because of religious practices				
bb.	MEDICAL ADVICE				
cc.	Out eating is prohibited by students because of medical grounds				

SECTION:D IMPACT OF ADOLESCENTS FOOD SELECTION PRACTICES ON

THEIR HEALTH

23. Tick from the following as Agree, Strongly Agree, Disagree being an implication of food selection practices on their health status of adolescents in Senior High School.

NO.	STRONGLY AGREE	AGREE	DISAGREE
a.	Obesity		
b.	Menstrual disorder		
c.	Infertility		
d.	Malnutrition		
k.	Height of adolescents		
l.	Complexion		
m.	Itching		

