UNIVERSITY OF EDUCATION, WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION

ASSESSING THE FOOD HABITS OF EXPECTANT MOTHERS AND THE IMPACT ON THE MOTHERS AND THEIR BABIES- CASE OF MAMPONG MUNUCIPAL OF ASHANTI REGION – GHANA

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DEPARTMENT OF HOSPITALITY AND TOURISM EDUCATION

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DECLARATION

Candidate's Declaration

I, Salomey Amankwah, hereby declare that this dissertation, with the exception of quotations and references contained in published works which have all to the best of my knowledge, been identified and acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole to any institution anywhere for the award of another degree**.**

Signature: …… Date:……

Salomey Amankwah

Supervisor's Declaration

I hereby declare that the preparation and presentation of this dissertation was supervised in accordance with the guidelines set for dissertation as laid down by the University of Education, Winneba.

Signature: …… Date ……

Madam Abena Sekyere

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Mindful of the fact that it has taken me a year to gather the necessary materials and information for this dissertation, I am profoundly grateful for the ability to get this far.

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DEDICATION

With great delight I dedicate this work to my three daughters, Mabel Saka Sarpong, Akosua Fobi Sarpong and Akua Offeibea Sarpong and my husband, Mr. Kofi Boateng Sarpong.

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ABSTRACT

The study assessed the various food habits of expectant mothers, the factors that influence the formation of food habits and the impact on the mothers and the babies in Mampong Municipality in the Ashanti Region of Ghana. Simple random sampling was used to select seven health centers in the municipality. A total of 100 randomly selected expectant mothers served as the subjects for the study. The major instrument used was questionnaire while observation schedule served as supplementary instrument. For the analysis of data, Statistical Package for Social Sciences (SPSS) version 16.0 and analysis toolpak for Microsoft excel were used. These included simple percentages, frequency counts, and charts. The key finding of the study were that expectant mothers have various food habits in which 15 (15%) said they have good food habits and eight five (85) (85%) said they have bad food habit that influence the food they eat. There are factors that influence the formation of the food habits of the expectant mothers which are Religious/Cultural twenty-six (26) (26%), Socio-economic thirty-two (32) (32%), Education and mass media twenty-three (23) (23%) and Peer influence nineteen (19) (19%). Most of these mothers' meals for the day do not have all the food nutrients in their right proportions. This is because the type of food habits they have do not allow them to get all the food nutrients in the meals they take during the day. These habits result in some nutritional impacts on the mothers which are; Loss of appetite twenty-two (22) (22%), Complications thirty-three (35) (35%), Diseases twenty-four (24) (24%) and Death nineteen (19) (19%); Deformity twenty (20) (20%), low birth weight twenty-two (22) (22%), heart diseases thirty (30) (30%), and mental retardation in the babies. These nutritional impacts can be avoided when the mothers are taught how to include all the food nutrients in their meals. All stakeholders of health, the government, non-governmental organisations and private firms should come to the aid of the health centers with grants and donations to provide computers, relevant books and other materials to enhance effective teaching of food nutrition and health to the expectant mothers.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

Feeding is very important in life. Human beings depend on food for survival and according to Sarkodie (2014) food is a substance which when eating, digests and absorbs by the body, produces energy, promotes growth, repairs worn-out tissues and regulates body processes. Food is fundamental to human survival, in more than one way. First, food is basic for averting hunger and maintaining health for every human being. Secondly, food satisfies our palate and makes us happy and emotionally and socially content. Third, food constitutes a form of cultural expression. The food we eat should be safe, palatable, and affordable and of the quality that can maintain mental, emotional, physiological and physical health. Habit on the other hand is an established way of doing things on a regular basis. Food habit is the attitude and reaction of individuals towards food on regular basis (Sarkodie,2014). "It is a practice which is hard to give up. There are two types of food habits: good food habit and bad food habit" (Olusanya *et al*., 2000). Other types of food habits according to Kwakye & MacArthur (2014) are; snacking, skipping meals, drinking alcohol, dieting and meal patterns. These food habits have come about as a result of one's interaction with social, cultural and emotional factors in a given community (Olusanya *et al*., 2000). Some people prefer eating certain foods and not others for a number of reasons; among them are; family traditions/ customs, economic status/money available, education, foreign influences, geographic location, religious beliefs, technological advancement, superstitions, methods used in food preparation, mass media, and peer influence.

Nutrition which is referred to as the study of food and how food intake affects the body (Kwakye & MacArthur, 2014), is important during pregnancy because the unborn baby depends entirely on its mother's food supply during the first nine months of its life. The baby starts its life as a singled fertilized cell. It needs to build billions of new cells and grow into a human being. The baby is nourished by what the mother eats and drinks. How healthy a baby is will depend on the mother's health and what she eats. When a woman is pregnant, her body changes dramatically due to the fact that she produces more blood, her uterus and its supporting muscles increase in size and strength, her joints become more flexible in preparation for childbirth and her breast grow and changes in preparation for lactating. Nutrition plays a major role in helping her to handle these changes (Whitney & Rolfes, 2000).It is believed that a healthy, well-nourished mother is much more likely to have a healthy baby than a mother who is badly nourished. A woman's nutritional needs increase during pregnancy because she has to provide for the growth and development of the foetus and maintenance of her body (Kwakye & MacArthur, 2014).Eating properly means eating enough of the right types of well-prepared foods. The body uses food as fuel for energy throughout the day. For one to be healthy, one must eat enough foods to meet one's body daily needs. Not just any food will do but foods that can supply the body with the needed nutrients. Making the right food choices is a major step towards enjoying a healthy, active life (Foster *et al*.,2002).

According to Butte *et al*., (2004), a healthy pregnancy last an average of 40 weeks, with a normal range of 38 to 42 weeks. There are 3 distinct stages of feotal development during which the baby must complete specific developmental tasks. The zygote period is the first stage, beginning at conception and lasting approximately2 weeks. The embryonic period goes from 2to 8 weeks and the feotal period last from 8 weeks until birth.

Weeks of pregnancy are counted from the first day of the woman's last period, and thus a woman is considered pregnant approximately 2 weeks before she actually conceives the baby. After conception, the fertilized egg, also known as the zygote, makes its way to the uterus, where it implants and begins its rapid growth (Ali & Egan, 2007).

The need for most nutrients are increased during pregnancy to meet the high demands of both the growing feotus and the mother, who herself goes through a period of growth to carry the child and prepare for lactation. The study assessed the food habits of expectant mothers and the impact on the mothers and the babies in Mampong municipal in Ashanti Region of Ghana.

Mampong municipal is made up of about twenty towns and villages. Most of the people in the towns are farmers and traders; they choose foods based on the commodities that are available in the locality. Some of the people are also of different ethnic groups and so with different customs or traditions; different religious beliefs and low income. The Ashanti's dominate the ethnic groups in the municipal and so their traditions or customs; taboos; superstitions influence the food habits of the people in the municipal as well as the expectant mothers. According to Bediako (2006), factors like the mass media, foreign influence, technological advancement, peer influence and education also influence the expectant mothers. Superstitions and taboos in the municipality is the most factors that influence the food habits of most of the expectant mothers. According to the Macmillan Dictionary (2002), superstition is a belief that things such as magic or luck have the power to affect your life. It also stated taboos as something that people do or talk about because it is very offensive or shocking. Foods that are forbidden during pregnancy period in most of the towns and villages in the municipal are; eggs, snails, okra, mudfish, crab, coconut juice, salt, left over soup and ripped plantain. These prohibited foods deprive the expectant mothers from eating a balanced diet. Babies that are born by most of these mothers show

some nutritional implications like small heads (microcephaly), physically deformed babies, mentally retarded babies, premature babies, still birth and low birth weight. The expectant mothers also have some nutritional implications like miscarriage, aneamia, heart diseases, oedema, loss of appetite and diabetes (Lee *et al.*, 2009).

What a woman eats when she is pregnant can have profound and lasting effects on her child's health. The expression "you are what you eat" applies, but in this case, it is this: "You are what your mother eats"(Ali & Egan, 2007). During the pre-natal period, the foetus has the enormous task of evolving in only nine short months from a single-called, fertilized egg to a human infant. In order to accomplish this, the feotus must have all the necessary resources available in the proper quantities and at the exact times they are needed. Despite the daunting nature of the task, mothers have been producing healthy infants for thousands of years, demonstrating the amazing adaptability of both the mother and her child. The capacity of the mother's body to create the necessary conditions for feotal growth is one of the great miracles of life. There are limits, however, and the health of the child may suffer in obvious and not-so-obvious ways if certain thresholds for nutrients are not met (Hofmeyr *et al.*, 2007).

Although a pregnant body has an amazing ability to compensate for nutrient deficiencies and excesses, a woman cannot provide essential nutrients for her child if she is deficient in them. Many factors influence a mother's nutritional status during her pregnancy. The mother's own health before conception, her health during pregnancy, her lifestyle-choices, and environmental exposures can all change what and how much she eats and limit precious nutrients available for the growing feotus (Hofmeyr *et al.*, 2007).

It is important that knowledgeable health care providers are available to support the mother- to-be with strategies to help her achieve the most balanced diet possible, thus ensuring the health of both mother and child. This research examines normal prenatal

nutritional requirements and common factors that may compromise the mother's ability to provide ideal nutrition for her growing feotus.

1.2 Statement of the study

''From conception to birth, all parts of the infant: bone, muscles, organs, blood cells, skin and other tissues are made from nutrients the mother eats'' (Whitney & Rolfe, 2000). Physiological changes that occur and place demand for additional nutrition include weight gain of the pregnant women, the weight gain could be as a result of fat that has accumulated which provides stores of energy to meet additional requirement of the foetus (Sarkodie, 2014). The weight of the feotus also increases the weight of the mother and her energy supply needs to help carry the growing feotus. A pregnant woman should therefore consume meals that will provide energy to meet the increased demand. Meals should be rich in fat and carbohydrates in order to meet this. It is estimated that a pregnant woman needs 75g protein a day throughout the pregnancy period (Kwakye & MacArthur, 2014). This amount represents an increase of 10-15g a day to the amount needed by an ordinary person. The additional requirement is necessary to meet tissue demand posed by rapid growth of the feotus, enlargement of the uterus membrane gland and the placenta. Severe protein restriction during pregnancy may lead to poor utilization of food by the infant after birth. All minerals and traces of minerals play important role in maternal health. Iron deficiency may lead to poor pregnancy outcomes. A diet with adequate provision of calcium; sodium and iodine is needed for strong bones and teeth development and an appreciable birth rate. Water is also very important during pregnancy to regulate the body temperature, remove waste products in the body, cushions vital organs and the embryo and prevent constipation (Kwakye & MacArthur, 2014).

As stated by Kwakye & MacArthur, (2014),factors that influence food habits of people are as follows: family traditions or customs, geographical locations, religious beliefs, superstitions, money available, technological advancement, foreign influence, peer influence and mass media. These factors influence the foods that expectant mothers select to eat resulting in some being malnourished.

According to Parikh & Parikh, (2002), expectant mothers have nutritional impacts like miscarriage, loss of appetite, heart diseases, premature delivery, aneamia, diabetes and oedema and their babies also may have low birth weight, physical deformity, heart diseases and mental retardation. Some of the expectant mothers are aware that their food habits affect their health but they do so for reasons other than their awareness of the important role nutrition plays in their health and that of their babies. Other expectant mothers are ignorant about their nutritional needs and therefore make unwise food choices not knowing the after-effect.

These food habits and the nutritional impacts have been observed in Mampong municipality and it is against this background that the researcher wants to assess the factors that influence food habits of expectant mothers, the impacts on the health of the mothers and their babies.

1.3 Purpose of the study

The main purpose of the study was to assess the food habits of expectant mothers and the impacts of the food habits on the mothers and their babies in Mampong municipal.

1.4 Objectives of the study

Specifically, the study sought to:

- Identify the various types of food habits of expectant mothers.
- Investigate the factors that influences the formation of food habits of expectant mothers in Mampong municipal.
- Evaluate the impacts of the food habits on the health of expectant mothers and their babies.

1.5 Research Questions

The study was guided by the following research questions.

- What are the various types of food habits of the expectant mothers?
- What are the factors that influence the formation of food habits of expectant mothers?
- What impacts do the food habits have on the health of expectant mothers and their babies?

1.6 Significance of the study

Assessing the food habits of expectant mothers and the impacts on the expectant mothers and their babies is very important. The importance of the study cannot be overemphasized as the findings would assist expectant mothers to make wise food selection that will benefit them and their babies. This is because the unborn babies depend entirely on the mother's food supply during the first nine months of their lives. The baby is nourished by what the mother eats and drinks. How healthy a baby is will depend on the mother's health and what she eats.

The findings obtained would equip health personnel with information to help them organize seminars and talks on good nutrition for expectant mothers.

In conclusion; this study would serve as literature for further research.

1.7 Delimitation of the study

There are so many municipals and districts in Ashanti region. However, to cover all these places would be time consuming and cost involving, hence the researcher limited the study to the Mampong municipality of Ashanti Region.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter discusses the literature review underpinning the phenomenon of the study. In order to have a complete picture of the phenomenon, the chapter presents food habits of expectant mothers, factors that influences the formation of food habits of expectant mothers and the impacts of the food habits on the health of expectant mothers and their babies.

2.1 Food Habits of Expectant Mothers

Better nutrition and healthy living require an understanding of factors that influence what we eat. 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 (Kruger, 2005). According to Whitney & Rolfe, (2009), 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. Food habits are slow and difficult to change because food has important psychological associations with the family and the community. Familiar food is satisfying and reassuring, particularly the traditional foods of childhood, which evoke a deep-seated emotional response (Lee, *et al*, 2009). 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. Their contribution to the family diet has therefore considerably declined. 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 (DES). In relation to nutrition, the meal frequency pattern and the distribution of food within the family are important factors. The food habits and dietary patterns are often related to the ecological zone within which people live (Odebiyi, 1989).

2.1.1 Linking the African diet and health throughout the lifecycle

Good nutrition is crucial to health status throughout the lifecycle. Appropriate nutritional intake is important, starting from the preconception stage and continuing through to the ageing process. Nutritional needs change throughout the lifecycle, requiring adjustments in the types and amounts we eat to maintain optimal health. The most critical stage of human development is from conception to about three years of age, a period when most physical growth occurs. From the fetal stage onwards, nutrition plays a role in growth and development, bone and skeletal tissue formation, brain development and in adequate protection against early onset of chronic diseases such as hypertension, diabetes, heart diseases, osteoporosis, and some forms of cancer. Iron deficiency anaemia is one of the most common health problems in Africa today (Kwakye & MacArthur, 2014).For instance, in Kenya 50% of the population suffers from various levels of iron deficiency anaemia. Another common nutrient deficiency is that of folic acid. Women who have low intakes of folic acid are at increased risk of having an infant with neural tube defects, or incomplete

development of spine and brain (Whitney & Rolfe, 2000). Most governments on the continent recommend administration of folic acid tablets to expectant mothers in antenatal clinics. For children aged 0-6 months, breast-feeding rates are low. The recommended six months' exclusive breast feeding is not strictly followed and children are introduced to complementary breastfeeding as early as during the first week. This, however, is heavily dependent on the traditions and job status of the mothers. In most communities, infants are fed additional solid foods at inappropriately early ages - often during the first month of life. Breast milk is the only food recommended for infants during the first six months of life.

During the first six months of life, most infants obtain all the energy and nutrient requirements from breast milk. By the age of six months, they need additional or complementary foods to meet their needs for proper growth and development. The first weaning food a baby gets is usually semi-liquid, made from the starchy staple such as maize, millet, cassava or yam. Plain porridge made from cereals and tuber flour, though commonly used, is not sufficiently rich in energy. It also lacks proteins and essential vitamins, such as A and C. Other foods such as legumes, cowpeas, beans, or pigeon peas may be added to enrich such porridge. Legumes, such as roasted/pounded groundnuts or soybean, or other oil crops, such as roasted or pounded sesame or sunflower seeds are rich in oil and can be added to increase energy concentration. Green leafy vegetables and fruits may also be added to provide vitamins and minerals. Other examples of foods used as complementary or weaning foods include cow's milk, goat's milk, mashed bananas, potatoes and yams. As the infants grow older, foods used by other family members are gradually introduced. Starting at two years of age, children may eat foods from the family pot, but children under two years of age require special foods because their teeth are not fully developed to chew tough foods. They must adjust gradually from breast milk to semi-solid

foods, and ultimately, to the foods from the family pot. For school-age children, food habits differ from one community to the other depending on economic activities. For pastoral communities, these 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; 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. As the African population continues to age, life expectancy has been drastically reduced due to HIV/AIDS. Those lucky to live beyond 60 are plagued by poverty and under- nutrition. Dental problems are among the most common health problems among the elderly on the continent. Seemingly, the aged are now neglected as far as food is concerned.

2.2 Factors that Influences the Formation of Food Habits of Expectant Mothers

Some 200 million women become pregnant each year, most of them in developing countries. Many of these women suffer from both ongoing nutritional deficiencies and long-term cumulative consequences of under nutrition during childbirth, Jose Mora and Penelope Nestel (2000). AbouZahr *et al* (2008) estimate that, 500,000 maternal deaths occur each year, of which 494,000 occur in developing countries. The worldwide maternity mortality

ration is estimated to be 390/100,000 live births, 30/100,000 in the developed world and 450/100,000 in the developing countries. AbouZahr *et al* (2008) observes that even with these high levels, the developing world is probably underestimated. Pregnancy-related health and nutritional problems affect a woman's quality of life, that of her newborn infant well beyond delivery, and that of her family and community. According to WHO (2006) report, more than 7 million newborn deaths are associated with maternal health- and nutrition-related problems resulting from poorly managed pregnancies and deliveries or inadequate care of the neonate.

The researcher's interest in this study was prompted by social consequences, maternal mortality presents on families and especially the consequence on surviving children who lack maternal care. In their study of maternal mortality in Sweden, Homburg & Rostrums (2007) found out that 68 % of infants born alive to dying mothers did not survive. Even more striking, siblings aged less than 1 year at the time of the mother's death had only 3% chance of surviving to age 5 years. Similarly, siblings between ages 1 and 5 years had only a 13% chance of surviving to the same age. Although the effect in the contemporary developing world may not be this severe, the death of a mother is likely to be followed by the death of approximately 50% of her children under the age of 5 years observes by AbouZahr *et al* (2008). Although some of these children may die of causes shared with their mother (e.g., starvation), most will die directly or indirectly from lack of maternal care.

What the African communities eat could 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, cassava, yam, sweet potato, plantain and others. 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. Apart from animal products, most of the ingredients used to prepare a relish in West African soups or other accompaniments are provided by a variety of vegetables such as beans, lentils or groundnuts with green leafy vegetables. With a few exceptions, all sub-Saharan ethnic groups' cuisine has the basic format that consists of a starchy food eaten with a sauce, soup or dip, which may or may not be spicy. Main dishes are made from cereals (maize, millet and sorghum), roots and tubers (cassava, cocoyam and yams), green bananas or plantain. If the staple Contemporary African food habits and their nutritional and health implications are low in certain nutrients, nutritional deficiencies may result. The accompaniment which is known as relish, sauce or soup depending on the part of the continent, may consist of a vegetable dish (green leafy vegetables) or dish made from legumes, meat or fish, where and when available. Main dishes are also made from a combination of cereals and legumes or seeds. For example, maize is eaten with beans, cowpeas, Bambara nuts or groundnuts; rice can be eaten with cowpeas, beans, or melon seeds. Few population groups add green leafy vegetables to cereal-legume dishes (Olusanya *et al*., 2000).

According to Kwakye & MacArthur (2014), Food habit is defined as the way in which a group of people select, prepare and serve food as well as the number of times meals are eaten in the day. The factors which influence food habits include; family traditions/customs, geographical locations, religious beliefs, superstitions, economics/money

available, technological advancement, foreign influence, education, peer influence and mass media (Erlich & Mark, 2007).

2.2.1 Family Traditions or Customs

From the definition of food habits given earlier on, it can be observed that customs and practices have a part to play in the total approach to food. Food habits are acquired at a young age from parents and so become largely unconscious. Food habits are then transmitted from generation to generation. Usually, mothers are the stronger influence on a child in the way the food is selected. The reason is that mothers are involved with the provision of food for the family. A child learns what is acceptable as food and what not food is. These are often than through punishments rewards. The girl child learns from the mother what is to be selected as food, the method of cooking and service.

Culture will influence the acceptability of food. Values influences food choices but they are developed from societal as well as family values. The child learns what the society accepts as food from the mother. Examples are the Akwapims do not eat rat and Krobos do not eat snails.

Marriage influences food choices and behaviours. A spouse may learn to prepare and eat the partner's food and the family adopt the food habits, particularly if the partner is from a different culture.

Apart from the food habits that are learnt from the home environment, the child also learns more food-related behaviours from other people or institutions outside the home. Examples are the food sold outside the home and the boarding school systems, which provides an opportunity for individuals to learn about food behavior including table manners.

Now several formal institutions are teaching Catering and Food and Nutrition. These have brought dishes and meals from other cultures into the Ghanaian cuisine.

2.2.2 Geographical Location

Individuals select meals from items that are available in the locality. In view of this, it is evident that in Ghana, people along the coast use a lot of corn and fish in their meal preparation. The people of Northern Ghana rely basically on cereals and grains such as millet, sorghum. Groundnuts, baobab and Shea butter are used extensively in that part of the country. In the middle forest belt, starchy roots and plantain, particularly cassava and different species of cocoyam are available. Each agricultural belt has typical dishes that are often found in the locations. The agricultural products arise from the rainfall patterns (Sarkodie, 2014).

2.2.3 Religious Beliefs

Several religions have rules on what constitutes food, the way the food should be cooked and food patterns. For example, Hinduism insists on sanctity of life and the fact soul can migrate to other areas after death. Hindus eat only plant food as well as animal foods such as milk and cheese but not that which involve killing of the animal (dairy products).The cow is seen as a sacred animal so they do not eat beef. The pig is considered unclean so Hindus and Muslims do not eat pork. They eat animal only when they are slaughtered through the rituals by an approved 'halal' butchers. Catholics eat fish only on Fridays. In some religions only fish with scales are permitted as food (Erlich & Mark, 2007).

Among traditional religions, certain dishes and meals are forbidden when people go to them for healing. Members of clans are not to eat any animal that is a totem for their clan. These inhibitions become food habits, in that people will avoid selecting those prohibited items.

2.2.4 Superstition

According to Kwakye & MacArthur, (2014), in parts of Africa, foods are generally defined according to beliefs. These and other numerous beliefs about make up the taboos and superstitions. Many of these food prohibitions are associated with age, gender, season, status, health state, etc. An example is that in most cultural groups in Ghana, children are not supposed to eat a lot of meat or fish or eggs. A lot of explanations are given as to why children should not be given eggs, fish or meat which are unrelated to nutrition and in most cases, are detrimental to the nutritional status of the children. Pregnant women are not supposed to eat coconut and snails, although snails may be a cheaper source of nutrition for most poor farmers. These prohibitions often go with fearsome consequences for those who disobey. For example, ‘’your mother will die’’ etc. These superstitions instill fear in offenders and as such the prohibited food are eliminated from the people’s diets.

2.2.5 Economic/Money available

Every individual or family will select food that their money can buy. In view of this, families can be divided into low income, medium income and high income families in terms of meals.

The high income families have liberal spending plans in that they can choose any food item since they can buy them. Often, it is observed that food choices are not based on nutritional needs and so malnutrition such as obesity results. On the other hand, animal

proteins are expensive in Ghana so they become unavailable to the poor. This results in malnutrition characterized by protein deficiency diseases (Kwakye & MacArthur, 2014)

Food Taboos, also, according to Bediako, (2006), are foods which are forbidden because of religious or cultural beliefs. This deprives the expectant mothers from eating a balanced diet. Most of these food taboos have no scientific bases. In some cultures certain foods are considered as dirty or inedible and so are forbidden. For example, the Krobo's will not eat snails because they believe they would get rashes if they eat.

2.2.6 Technological Advancement

Education accompanied by development and technology. Technology keeps changing and so has a dynamic influence on food habits. Technology influences food availability and consumer preferences of tools equipment as well as food. The media; audio' visual as well as audio-visual keep bringing in advertisement on new development every day. These have made people change the food practices such as the use of labour-saving devices and these have erased the burden of domestic activities of several women. Now grounding stones and swish stoves have become obsolete in several homes. Foods that were found only in the advanced countries are now in Ghana such as cornflakes, oats, instant fufu, can be found in the stands of supermarkets (Kwakye & MacArthur, 2014).

2.2.7 Foreign influence

In a lot of towns and even villages, people have relatives who have travelled to foreign lands.

A number of public officers, business people and the rich do travel outside Ghana. When they return they adopt dishes from outside which then become part of the local cuisine. Tourists come to Ghana and so the hotel and restaurant have to include their dishes

and meals in the menu. All these influence food habits. Some people have foreign spouses and have to cook for them which then becomes a habit (Sarkodie, 2014).

2.2.8 Education

Education, both formal and informal, has quite a significant influence on food habits Education impact knowledge, skills and attitudes. Education gives knowledge on the proper methods of food choices, preparation, services and variety. It is generally believed that education gives people new personal values. These values can either influence people's values concerning food or thus change their food habits. These assist homemakers and families purchase food that are unavailable in their locality. Education makes qualified women find work outside the home. In this way, the eating patterns of families may change. The increased income of educated families can help them afford variety, which in some cases, can result in over nutrition. Education makes people read the numerous books, magazines and journals that come out with new recipes and practice cooking the dishes (Kwakye & MacArthur).

2.2.9 Peer Group

The peer group in which an individual finds him/ herself can influence one's habits, particularly if the group members belong to different cultures. A Northerner will learn some habits from the southerner and vice versa. The food habits include how the meals are prepared and served. It could be that food habits may be a blend of the two cultures. This is very evident in the urban Centre's where cultures get mixed up. Several people learn the food habits informally and then become accustomed to the new habits (Kwakye & MacArthur).

2.2.10 Mass Media

According to Sarkodie, (2014), the mass media are made up of audio, visual and audio-visual. The radio has a number of programs on food and nutrition, just as the print and the audio-visual devices. The programs include breakfast, snacks, lunch and dinner information. The audio-visual media are now filled with several advertisements, which are capable of changing people's perceptions, attitudes and choices of food as well as the way the dishes are cooked and served. Messages are used urge consumers to spend money on drinks, meals, frozen foods, fast foods, biscuits and chocolates. Flavour-improvers, such as royco, maggi and monosodium glutamate are often heard and read in advertisements. These, definitely influence food habits.

2.3 The positive impact of food habits on the expectant mothers

It is the aspiration of every mother-to-be to give birth to perfectly healthy baby. In order to fulfill this aspiration, it is essential for her to safeguard her own health too. The development of the foetus in the womb depend to a large extent on the diet of the mother (Kwakye & MacArthur,2014).

1. Good food habits of an expectant mothers will promote good health and strength during the period of the pregnancy, a woman needs additional quantities of proteins, iron, calcium and vitamins of the B groups. Thus her requirements must exceed the normal requirement of the female body. She should take care to include pulses, leafy vegetables, milk and milk products as well as seasoned fruits in her diet. For example, snacks can provide quick energy and help to satisfy hunger until the next meal. Snacks based on fruits, plain yoghurt, whole-grain cookies, breads and muffins, raw vegetables, plain unsalted popcorn, dry-roasted unsalted nuts and milk provide nutrients-dense diets. The Food and Nutrition Board recommends that a

pregnant woman should have 300 additional calories every day which will help constant needs of calories the body needs (Kwakye & MacArthur, 2014).

2. Good food habits help to prevent waste. When expectant mothers practice good food habits, they take only the foods that are good for them. They stick to regular schedule of meals and snacks thereby preventing food waste (Kwakye & MacArthur, 2014).

3. Good food habits provide quality food nutrients. According to Parikh and Parikh (2002), the diet of expectant mothers could be made quality by including the following nutrients: proteins, vitamin A, vitamin D, vitamin B12, folate, iron, calcium, sodium, potassium, fluorine, iodine, zinc, carbohydrates, and fats (Parikh & Parikh 2000).

    - Proteins: they are important for the development of the uterus and the breast of expectant mothers and the course of development of the foetus. The volume of blood in the body of the expectant mother increases by a large percentage as a result of protein intake. The supply of proteins is through foods such as milk and milk products, peanuts, dry fruits meat, cheese, fish and egg.
    - Vitamin A: It is a fat soluble vitamin and beta carotene, which can be used in the body as either an antioxidant or precursor to vitamin A, are critical during feotal development because of their involvement in growth, vision, and protein synthesis and cell differentiation. Beta carotene is found in fruits and vegetables and preformed vitamin A can be found in animal products,

including fish, meat and milk. Despite the important role vitamin A plays in the body, the RDA for expectant mothers of 770 ug/day is only slightly higher than the RDA for non pregnant women. This due to the high risk birth defects associated with excessive doses of performed vitamin A early in pregnancy (Miller *et al*., 1998).

- Vitamin D: This may be obtained through diet and supplements or can also be made by the body when sin is exposed to ultraviolet rays. Vitamin D is necessary to help build and maintain strong bones and teeth and is very important during feotal development for this reason. Recent research shows that babies born during the late summer early fall are taller and have wider bones (Sayers & Tobias,2008). There is also mounting evidence that vitamin D plays a key role in preventing common cancers, autoimmune disease, type 1 daibetes, heart disease and osteoporosis (Holick, 2008).
- B Vitamins: The RDA/DRI for most B vitamins is higher during pregnancy compared with that of nonpregnant women in the same age category. B vitamins are primarily used as cofactors in energy metabolism, and the need for these vitamins is increased proportional to the increase in energy needs during pregnancy. Deficiency of most Bvitamins is rare because of their availability in wide variety of food sources and their presence in prenatal supplements. Two B vitamins, folate and vitamin B12, should be given special attention, however, because of their unique role during feotal development and potential for deficiency in an expectant mother (Molloy *et al*., 2008).
- Vitamin B12: Is essential for the production of red blood cells, the manufacturing of genetic material and healthy functioning of the nervous

system. The RDA is 2.4 ug/day in nonpregnant mothers, compared with 2.6 ug/day in pregnant mothers. Deficiencies in pregnancy and breast-feeding mothers, may cause neurologic damage in their children. Deficiency of B12 at the start of pregnancy may increase risk of birth defects such as neural tube defects and may contribute to preterm delivery (Molloy *et al.*, 2008).The only dietary source are animal products, including meat, dairy products, eggs and fish (oily fish and clams are very high in B12), but like other B vitamins, B12 is added to commercial dried cereals and included in adequate amounts in prenatal supplements.

- Folate: According to Molloy *et al*., (2008), Folate, available also in its synthetic form folic acid, is a B vitamin that is used in the manufacturing of neurotransmitters and is particularly important during early pregnancy because of its essential role in synthesizing DNA in the cells. The RDA for folic acid in nonpregnant women of childbearing age is 400ug/day and increases to 600 ug/day during pregnancy. A deficiency of this nutritional ingredient in the food may result in a steep rise in blood pressure and inflammation of the internal lining of the uterus. Vomiting can be controlled, and the 'megalobtastic' type of anaemia can be prevented, by the administration of folic acid. This would be a special benefit if more than one foetus is developing in the womb. Leading food sources includes ready to eat cereals, yeast bread, grapefruit juice, bananas, avocado, green leafy vegetables, dried beans and orange juice (Foster *et al*, 2009).
- Iron: It is a trace mineral that is vital for feotal growth and development because it plays a key role as a co-factor for enzymes involved in oxidation-reduction reactions, which occur in all cells during metabolism. Iron is also

necessary as the component of heamoglobin that allows red blood cells to carry oxygen needed throughout the body. Iron is important for normal neurodevelopment during feotal and early childhood development. During pregnancy there is a very great increase in the requirement of iron. Ordinarily, the expectant mother needs more iron over and above the normal supply but cannot take iron tablet during the first four months of pregnancy and therefore should consume foods rich in iron in order to get the adequate supply for the foetus. Food containing iron includes mint, other green leafy vegetables, sesame seeds, millet, dried peas and other pulses, soya beans, mangoes, livers of animals and eggs (Georgieff, 2008).Worldwide, inadequate dietary iron intake is the most common nutrient deficiency, and women are at particularly high risk because of a regular loss of iron during monthly menses. According to Beard, (2008), pregnancy laces an even higher demand for iron on the woman's body, both as her own blood volume expands to carry the pregnancy and as her child demands iron for normal development. The DRI for iron during pregnancy is 27 mg/day, and is particularly vital to meet this recommendation during the second and third trimesters. During the last three months, the baby is accumulating iron for use during early life. Feotal iron store are meant to last the child until approximately six months of life. Eating sources of iron that highly bioavailable, such as red meat, or snacking on iron -fortified cereals will also help to increase iron intake.

- Calcium: Although calcium is necessary for proper bone formation in conjunction with vitamin D, the RDA/DRI for pregnant mothers is the same as it is for nonpregnant mothers: 1,000 mg/ day for women over 18 years old.

This element helps in the development of the foetus in the womb. As calcium is an essential constituent of bones. Its deficiency results in the bones of the bones the baby remaining weak (osteoporosis). Because calcium would have to be supplied from the mother's stocks, her bones too will get weakened. The overall development of the baby also suffers. Adequate quantities of calcium are available in foods like milk and milk products, pulses, butter, cheese, meat, snails, crabs, grapes, water melon, sesame seeds and millets (Sayers & Tobias, 2008).

- Sodium: This element in the diet of the expectant mother, also helps in the development of the infant's teeth, has a beneficial effect on eczema and is essential and excellent nutritional ingredients for maintaining health of the eyes. Requisite amount of sodium for the normal needs of pregnant women can be supplied by common salt, milk, beetroots, carrots, radishes, French beans, eggs, meat and fish (Gala *et al*, 2007).
- Potassium: Excessive and prolonged vomiting or excessive dosage of diuretic medicines may cause potassium deficiency in pregnant women indicated chiefly by giddiness. A balanced diet generally supplies all the potassium that is needed. Fresh fruits, milk, garlic, radishes, potatoes and meat contains abundant potassium.
- Fluorine: Sodium fluoride strengthens the teeth of the baby. Expectant mothers should take about two milligrams of sodium fluoride every day. Fluorine is present in sufficient quantities in common salt, milk, carrots, apricots, beefs, French bean pods. Potatoes, spinach, cabbages, tomatoes, banana, eggs, meat and salt water dishes

- Iodine: Although overt deficiency of iodine is uncommon in the United States because of fortification of table salt, iodine deficiency affects more than 2 billion people worldwide and is the leading cause of mental retardation. Consuming inadequate amount of iodine caused by variable levels in commonly eaten foods. Given the nutrient's important role in feotal development, supplementation is recommended for pregnant and lactating mothers. The RDA for expectant mothers is 220ug of iodine per day. (Pearce, 2007). Mothers who do not get enough can put their babies at risk for mental retardation, as well as growth, hearing, and speech problem. Women consuming a low-salt diet during pregnancy, especially those trying to manage oedema and/or pregnancy-induced hypertension, are at particular risk for iodine insufficiency. Foods containing iodine are necessary to prevent the essential element present in the body of expectant mother from being loss in urine through the kidneys.
- . Zinc: The RDA for zinc during pregnancy is 11 mg/day, increased from 8 for nonpregnant women. Adequate zinc is extremely important during the first trimester, when organs are formed and may play a role in assisting in immune system development (Shah & Sachdev, 2006). Deficiency of this element result in loss of appetite. This leads to reduced intake of food, with consequent retardation in development of the baby, delay in the healing of cuts and wounds, skin diseases and under development of the baby. It is therefore recommended that pregnant mothers maintain enough and adequate amount of zinc in their diet to boast their appetite and also help in the development of the baby and prevent other implications. Zinc is present in

sufficient amount quantities in beef ready to eat cereals, milk and poultry (Ronzio, 1997).

- Magnesium; It is a cofactor in over 300 enzymes in the body. Dietary magnesium inadequacy has been demonstrated to be common among women and it is associated with an increased risk of miscarriage, feotal growth retardation, maternal hospitalization and preterm delivery (Durlach, 2004). Inadequacy of magnesium has also been identified as a risk factor for the development of both gestational diabetes and type 2 diabetes (Barbagallo, *et al.*,2007). After birth it has been associated with an increased risk of Sudden Death Syndrome (SIDS) and increased referrals to the neonatal intensive care unit (NICU). Most prenatal vitamins contain only 10% to 25% of the RDA for magnesium, and thus emphasis should be put on consuming good dietary sources. The best dietary source include peanuts, bran, wheat germ, nuts and legumes (Young & Jewell, 2002).
- Carbohydrates: Dietary carbohydrate is broken down to form glucose, also known as blood sugar. The rapid growth of the feotus requires that ample amounts of energy in the form of glucose be available to the feotus at all times. The recommended daily allowance (RDA) for carbohydrates during pregnancy is 175 g/day, increased from 130 g/day for nonpregnant women. Most Americans eat enough carbohydrate to meet normal and pregnancy requirements with a mean intake of approximately260 g/day for women of child bearing age (Centers for Disease Control and Prevention, 2004).

  Expectant mothers should be advised that a low carbohydrate diet is dangerous during pregnancy and could be place the baby at risk for poor growth. A mild restriction of dietary carbohydrate may be recommended if

the mother is diabetic. If a mother enters pregnancy with preexisting diabetes or develops it while she is pregnant, she will need to work closely with her care team to make sure that she provides enough, but not too much glucose to ensure optimal growth of her baby. Food sources are, cassava, yam, plantain, potato, cocoyam and taro.

- Fats: The mother –to –be must include enough fat in her diet to meet the needs of her growing baby. Lipids, including sterols, phospholipids, and triglycerides, which are primarily made up of fatty acids, are another basic building material of cell membranes and hormones and are necessary for proper eye and brain development, especially during the prenatal period and into the first few years of the child's life (Innis & Friesen, 2008).

  Fat is also a source of concentrated calories and may be beneficial to women at risk of energy malnutrition while pregnant. Women who are not at risk should avoid excess fat because it can easily lead to undesired weight gain; moderation is essential. There is no separate RDA/DRI for fat intake during pregnancy and the recommendation remains 20% to 35% of total calories, the same as for the general population. Fat intake during pregnancy should emphasize sources that provide the essential fatty acids and choline, a component of phospholipids necessary for healthy brain function (Bourre, 2007).

Evaluation of the above nutritional requirements of expectant mothers give a deducible strong substantial fact that almost every single food item constitute a meal is very important in the diet of the expectant mothers. However, excluding any of these food items

in a diet or meal because of food habits have great nutritional implication on the expectant mothers (Parikh & Parikh, 2002).

2.4.1 Negative impacts of food habits on the expectant mothers

Studies show that, bad food habits adversely affect the daily consumption of proteins, and some nutrients during the period of pregnancy. According to Kowtaluk (1986), if the expectant mother has poor nutrition her health may be affected in the following ways:

- She may have miscarriage or loss the baby during the first few months of the pregnancy.
- She may have complications during the pregnancy.

The mother develops severe health problems. Example, if the expectant mother is not getting enough calcium in her diet, it will be drawn from her bones to supply the baby and may develop serious problems with her bones and teeth and this in many cases cripple the mother shortly after delivery. Also inadequate folic acid and iron may cause aneamia in both the mother and the baby.

Parikh & Parikh (2002) also identified some other nutritional implications in connection with bad food habits as follows:

- Heart diseases as a result of inadequate iron in the diet.
- Toxemia which is as a result of inadequate sodium and calcium in the diet.

2.4.2 Negative impact of food habits on the unborn baby

Important components of the mother's diet need to be discussed fully. A healthy diet is necessary to provide adequate amounts of nutrients for the mother- to- be and unborn child. Food cravings may lead to the consumption of foods that increases the mother's health risk. The caries potential of the mother's diet, as well as its effect on her child should

be addressed. The frequency of consumption of cariogenic substances and resulting demineralization/ demineralization process also are important discussion topics (Dimitrova, 2009).

According to Department of Public Health, Food Studies, and Nutrition, David B. Falk College, Syracuse University, micronutrient deficiencies and imbalanced dietary intake tend to occur during the reproductive period among women in China. In accordance with traditional Chinese culture, pregnant women are commonly advised to follow a specific set of dietary precautions.

Lee *et al*. (2009) point to the danger of nutritional deficiencies being caused or aggravated by overzealous adherence to dietary prescriptions (food taboos). Pregnant women have been reported to be deficient in iron (Fe), zinc (Zn) and calcium (Ca). Data provided by studies show substantial deficiencies in all minerals, with most average intake falling short of the national Recommended Nutrient Intake (RNI).

If the expectant mother has poor nutrition her baby will have the following nutritional implications:

The baby will be lighter in weight and smaller than average, low birth weight, under 2.5kg which is dangerous for the baby. This may occur as a result of pregnancy induced hypertension which is also known as preeclampsia or toxemia. Bad food habits like drinking alcohol or smoking can bring this condition, insufficient calcium and sodium in the mother's body, mothers who are suffering from asthma, diabetes and kidney diseases and improper ante-natal care can also cause low birth weight in babies (Christian & Stewart, 2010).

Parikh & Parikh, 2002 also stated that the baby may not live through the first few months of pregnancy. This is also called miscarriage which is the loss of a pregnancy in the first twenty weeks of pregnancy. This condition occurs as a result of mother's insufficient intake of foods that contain vitamin D which is required for calcium absorption in the bad, Omega

3 Fatty Acids which help to prevent abnormal clotting of blood and control inflammation which may cause a miscarriage. Also insufficient intake of Zinc, Folic acid and vitamin B12 can increase the risk of miscarriage.

According to Parikh & Parikh,(2002); -the baby may be born mentally retarded. This may occur as a results of mother's insufficient intake of iodine, protein, and iron in their diet and alcohol intake during pregnancy.

-The baby may be born physically deformed. This also result when the mother lacks calcium and vitamin D in the body.

-The baby may be premature. Premature baby is a baby that is born before the 37th week of pregnancy. This baby may not have completed their development and usually has low birth weight.

-The baby may develop abnormal small head, also called microcephaly. This can be a result of severe malnutrition in the expectant mother

The avoidance of the eating of some foods and food items in a meal will affect the nutrition and health of these pregnant mothers and the infants since each individual's food item plays a necessary and an important nutritional role in the recommended nutrients needed in their meals (Parikh & Parikh, 2002).

Alcohol consumption is also considered unsafe during pregnancy. Alcohol can pass freely through the placenta, and thus if the mother drinks, so does her unborn child. Consumption of alcohol during pregnancy is associated with higher risk of birth defects and miscarriage. At high levels, alcohol may cause feotal alcohol syndrome (FAS), which is the leading cause of preventable mental retardation (Chiriboga, 2003). FAS is characterized by mental retardation, malformations of the skeletal system, malformation of the heart and brain, growth problems, central nervous system problems, poor motor skills, increased mortality and problems with learning, memory, social interaction, attention span, problem

solving , speech and/or hearing. Children with FAS can often be identified by characteristic facial features, including small eyes, a short or upturned nose, flat cheeks and thin lips. These features fade as the child gets older, but other effects do not (National Organization on Fetal Alcohol Syndrome, n.d.).

It is important for mothers to understand that although FAS is usually caused by binge drinking or regular alcohol consumption during pregnancy, any alcohol intake during pregnancy may contribute to feotal damage and place the child at risk of feotal alcohol spectrum disorder (FASD). The term "FASD" is used to encompass the full spectrum of the birth defects that are caused by prenatal alcohol syndrome, which represent the most severe damage, and feotal alcohol syndrome, which represents the most severe damage and feotal alcohol effects, used to describe lesser damage caused by more moderate drinking (Chiriboga, 2003).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter consists of the research methods and procedures employed in gathering the data for the study. This includes the description of the study area, research design, population and sample. The chapter further shows the sampling procedure and then gives a description of the research instruments the scoring of the instrument used for the study. The validity and reliability of the instrument, data collection procedure and how the data was analysed in the study were determined.

3.1 Study Area

Ashanti Region of Ghana contains thirty-two (32) districts. These are made up of 1metropolis, 7 municipalities and 24 ordinary districts. The administrative capital of the Region is Kumasi. The research was conducted in Mampong Municipal which was formally the Sekyere West District. Its capital is Mampong.

Mampong Municipal is bordered by to the north by Ejura/ Sekyeredumase District, the east by Sekyere Central District, to the west by Afigya Sekyere District. The municipal covers an area of 2,345 square kilometers. According to Population and Housing Census of 2010, the municipal had a population of 42,037.

The municipal has about fifteen (15) health centers (public and private) of various types. Five of the health centers are found in Mampong which is the capital of the municipal. The municipality can boast of one big maternity hospital in Mampong, one branch of the major University in the country- University of Education, Winneba, Mampong campus, one Nursing and midwifery training college, two Colleges of Education, one of which is the only Men's' College of Education in Ghana.

3.2 Research design

The researcher used descriptive design–survey for the study. The purpose was to observe, describe and document aspects of a situation as it naturally occurs. Descriptive research is concerned with the conditions or relationships that exits, such as determining the nature of prevailing conditions, practices and attitudes, opinions that are held; processes that are going on or trends that are develop (Best & Kahn, 1998). A survey research design is to obtain an accurate picture of the individuals being studied (Gravetter & Forzano, 2006).

3.3 Population

The population for this study was expectant mothers in Mampong municipality of the Ashanti Region. The target population for the study comprised thirty (30) expectant mothers in the District Hospital, fifteen (15) in Calvary Health Center, ten (10) in Philippa Health Center, ten (10) in Quality Health Center, ten (10) in Nadaworoma Health Center, fifteen (15) in Kofiase Health Center and ten (10) in Asaam Health Center.

Table 3.1 Expectant mothers' Population and Sample Size

Hospital category	No. of expectant mothers
District Hospital	30
Calvary Health Center	15
Philipa Health Center	10
Quality Health Center	10
Nadaworoma Health Center	10
Kofiase Health Center	15
Asaam Health Center	10
Total	100

The above category of expectant mothers was selected for the study because they were supposed to have attained some level of maturity and confidence to answer the questionnaire. The expectant mothers, as the center of attraction, were to provide data on the food habits of expectant mothers and the impact on the mothers and the unborn babies.

3.4 Sample

In all hundred (100) participants were selected from the seven hospitals to serve as subjects of the research. The sample size could have been greater than the hundred (100), but because of homogeneity of the population, hundred (100) participants were sufficient enough to give credible data for the study.

According to Creswell (2008), sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population. There are two sampling strategies that are used in educational research which are probability samples and non- probability samples (Cohen *et al*., 2008). According to them, probability sample is

useful if the researcher wishes to be able to make generalizations, because it seeks representativeness of the wider population. Cohen *et al*. (2008) further noted that probability sample is used when two- tailed tests are to be administered in statistical analysis of quantitative data. On the other hand, Cohen *et al*. (2008) also explained that non- probability sample deliberately avoids representing the wider population; it seeks only to represent a particular named section of a wider population.

3.5 Sampling Procedure

The researcher made use of sampling procedures to achieve the set objectives. This was simple random sampling. Simple random sampling was used to select the expectant mothers for the study. A total sample of 100 from seven hospitals was used for the study. Simple random sampling was used to select the individual mothers used in the research. The sample for the study was hundred (100). All the expectant mothers in the seven hospitals had the same probability to be selected, but they were more than the sample needed. The midwives in the various hospitals were asked to help select the sample of expectant mothers to participate in the study. The simple random technique was used to select the expectant mothers from each hospital. The selection was achieved through the use of computer generated random numbers. In this method, lists of all the expectant mothers' names were obtained from each hospital. They were numbered and ordered accordingly. This gave each expectant mother from the seven hospitals an equal chance of being selected for participation in the study. The computer was then instructed to select the required sample size for each hospital by arranging the numbers randomly from least to highest. The name that corresponded to the numbers chosen by the computer constituted the sample for the study. This sampling technique was chosen because less time was used in selecting a sample. They were brought together and the research intention was explained to them and

the questionnaire administered. It lasted for thirty-five (35) minutes for the questionnaire. The hospitals were homogeneous in character; therefore, the selected ones were able to give a well representative data for the research. It helped to reduce the cost of field work, and yet the data of the study was not compromised in any way.

3.6 Research Instruments

Questionnaires, personal interview schedule and observation were used to collect the data from the expectant mothers (Appendix A). Questionnaires are effective means for data collection because they are reasonably economical and suitable for covering a wider area (Sarantakos, 1998). Different sets of questionnaires were structured to obtain the relevant information and data from the expectant mothers. These were made up of open and closed ended questions aimed at seeking information on the food habits of expectant mothers and the impact on the mothers and the unborn babies. The questionnaire contained the bulk of the items for the expectant mothers because questionnaire gave the respondents the chance to answer so many questions.

For triangulation, interview items schedule and observation were used on the expectant mothers. The questionnaire was converted into interview guide and administered through face- to- face contact with the respondents. The interview is an oral questionnaire (Best and Kahn, 1995). It was used because it has a high response rate by building good rapport, create relaxed and healthy atmosphere in which respondents easily co-operate. Interview schedule gave an in-depth data for the study. Since diverse respondents in terms of factors that influence the food habits of expectant mothers, the interview gave the researcher the opportunity to control the environment and to explain things where necessary. The interview schedule consisted of mainly structured of open ended items. The first part collected information on respondents' age, education level and marital status. The other part

has three sections soliciting views on expectant mothers' food habits. It also required expectant mothers to give the impact of the food habits on the mothers and the unborn babies.

Observation is the systematic process of recording patterns of people, objects and occurrences as they happen (Cornaway & Powel, 2010). A personal observation was carried out to confirm and enrich the data collected from the expectant mothers. This was done by visiting some of the homes of the expectant mothers and observe their food habits critically by the researcher.

3.7 Validity of the Research Instruments

According to Creswell, (2008), 'validity means the individual's scores from an instrument make sense, are meaningful and enable a researcher to draw good conclusions from the sample studying to the population". Validity seeks to determine whether the instrument measure what is intended to measure.

The quality of the research instrument is determined by its validity (Aikenhead, 2005). To ensure content validity, the questionnaire as well as the interview schedule were presented to my supervisor and peers who provided expect advice and contributed to enhance validity of the instrument. The result was analysed to determine the content validity of the instrument and those items that needed modification were revised. Based on the feedback, it was determined that the instrument had adequate content validity for this study.

3.8 Reliability of the Research Instruments

Reliability refers to the consistency of data when multiple measurements are gathered (Gott, Duggan & Roberts, 2003). It means the scores from an instrument should be stable and consistent. To determine the reliability of the instruments of the study, the

expectant mothers' questionnaire as well as the interview schedule were pilot-tested at Benim Health Center. The health center had similar characteristics and attributes as the health centers selected for the study. The questionnaire was piloted on a small sample of five (5) expectant mothers. The internal consistency of the instrument was determined using SPSS (Statistical Package for Social Sciences).

3.9 Data Collection Procedure

The researcher first briefed the hospital administration of the purpose of the survey, taking them through the questions and giving a comprehensive tutorial to them as to what each of the questions meant. Questionnaires were distributed to the expectant mothers who could read and write with an approval from the authorities of the various hospitals. Expectant mothers who could not read and write were interviewed by reading out the questionnaires and explaining to them.

The researcher was assisted by three midwives who had been briefed about the research to interview the expectant mothers based on the questionnaire. Respondents were given some time to answer the questionnaire with the help of the midwives with intermittent follow-up by the researcher to give explanations when the need be. After that, the questionnaires were retrieved from the respondents for onward analysis of the data.

3.10 Data analysis

The completed questionnaires were edited to ensure completeness, consistency and readability. Quantifiable data from the questionnaires was coded into the software for analysis. Statistical Package for Social Sciences (SPSS 16.0) was selected because it is considered to be user-friendly. The following statistical techniques which are grouped under various headings were then employed to analyse the data. Moreover, other quantitative tools such as frequency counts, graphs and percentages were used in the analysis to ascertain information on the expectant mothers' background and food habits.

CHAPTER FOUR

PRESENTATION OF DATA, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter aims at the presentation of data collected, analysis and discussion of the preliminary and the main results. The data collected during the research was analysed using descriptive and inferential statistics. The preliminary data includes data on the background information of the expectant mothers who answered the questionnaires. The presentation, analysis and discussion of the main topic of the research: Assessing the food habits of expectant mothers and the impacts on the mothers and their babies. The food habits of the expectant mothers have been based on research questions. A number of tables and graphs have been constructed for presentation of findings of analysed data.

4.1. Presentation of Preliminary Data

Preliminary data or bio- data on the respondents has been presented in Table 2 to 4. Table 2 is on expectant mothers' age, Table 3 gives information on the marital status of the respondents, and Table 4 is on the educational background of the respondents.

Table 4.1: Ages of the respondents

Ages	Frequency	Percent (%
16-25	36	36.0
26-35	59	59.0
46-55	05	5.0
Total	100	100.0

From Table 4.1, in sum hundred (100) respondents were used. The ages of the respondents were as follows: 16-25, 36 (36%), 26-35, 59 (59%) and 46-55, 05 (05%). It is revealed that majority of the respondents were between the ages of 26-35 representing 50%.

Table 4.2: Marital Status of Respondents

Status	Frequency	Percent
Married	72	72.0
Unmarried	23	23.0
Separated	04	4.0
Widowed	01	1.0
Total	100	100.0

Table 4.2, depicts that 72 (72%) of respondents were married, 23 (23%) were unmarried,4 (4%) separated and 1 (1%) widowed.

Table 4.3: Educational Background of Respondents

Levels	Frequency	Percent
Basic	37	37.0
Secondary	38	38.0
Tertiary	25	25.0
Total	100	100.0

Looking into the educational background of respondents, table 4.3 revealed that 37 (37%) of respondents ended or were at the basic level, 38 (38%) were at the secondary level and 25 (25%) at the tertiary level.

4.2 Presentation of Food habits of expectant mothers

Respondents were assessed on the food habits with regards to the food stuffs that were available to them to select.

Table 4.4: The Food Stuffs Respondents choose for their meals

Food stuff Habits	Frequency	Percentage (%)
Fruits and Vegetables	35	35.0
Starchy roots & plantain	32	32.0
Grains and Cereals	19	19.0
Animal& Animal Products	14	14.0
Total	100	100.0

Amongst the food stuffs and how respondents combine them, Table 4.4 revealed that 35 (35%) opted for fruits and vegetables (examples of fruits are pawpaw, pineapple, banana, orange, water melon, mangoes, guava, tangerine, and so on. Examples of vegetables; tomatoes, garden eggs, pepper, okra, palm nuts, onion, carrots cabbage and green leafy vegetables), 32 (32%) for starchy roots and plantain, (cassava, cocoyam, yam, potatoes, taro and plantain),19 (19%) for grains and cereals (maize, sorghum, millet, wheat and oats) and 14 (14%) for animal and animal products (beef, chicken, mutton chevon, pork, game, eggs, snails, crabs, milk and cheese). From the discussions the researcher had with the respondents, compared with Table 4.4, it can be deduced that most of the expectant mothers choose fruits and vegetables in their diets and even those who did that, chose the vegetables but over cooked them resulting in them not getting the required nutrients they needed. As for the fruits they hardly chose them to eat. Sometimes too the fruits became expensive

especially during the lean seasons and they could not afford to buy them and eat. The pie chart below shows the representations.

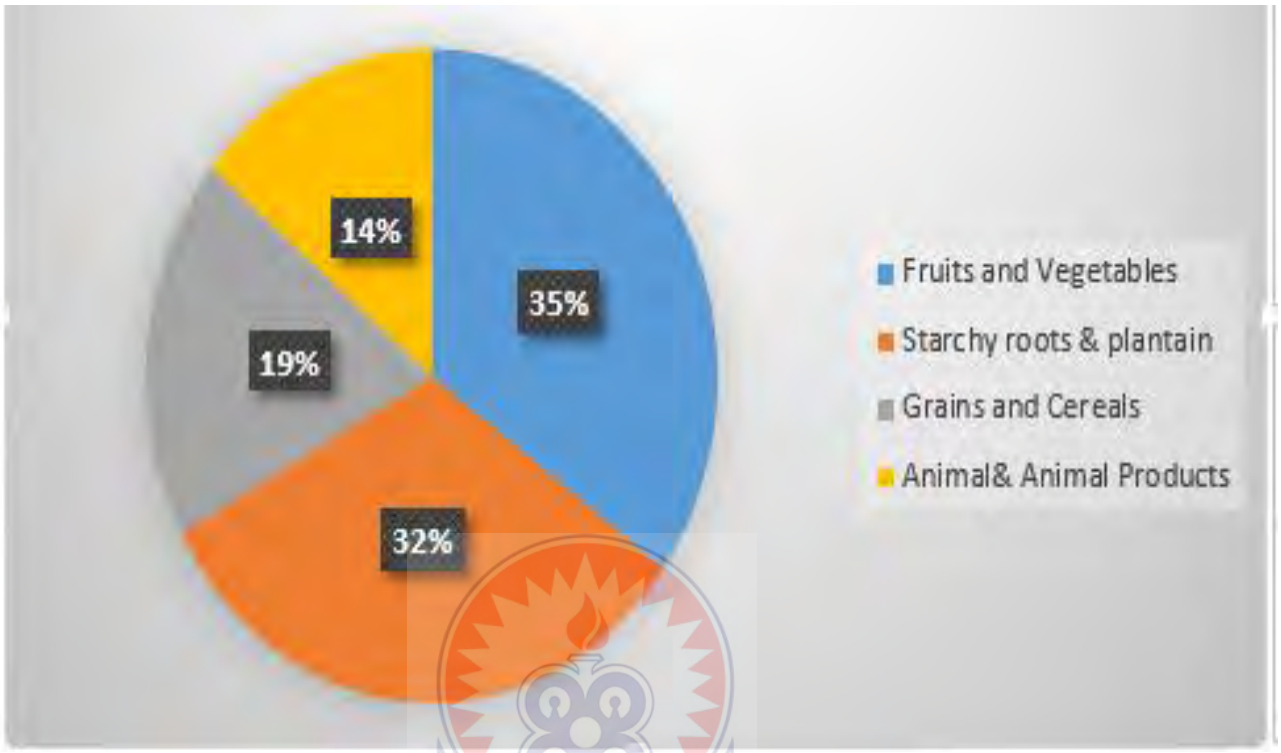

Figure 1: The Food Stuffs Respondents chose for their meals

Table 4.5: The food nutrients found in food

Food nutrients	Frequency	Percentages (%)
Proteins	**30**	**30.0**
Carbohydrates	**40**	**40.0**
Fats and oils	**13**	**13.0**
Vitamins	**10**	**10.0**
Minerals	**07**	**07.0**
Total	**100**	**100.0**

From Table 4.5, 30% of the respondents chose proteins as the food nutrients they get in their meals, 40 (40%) chose carbohydrates, 13 (13%) chose fats and oils, 10 (10%) chose vitamins and 07(07%) chose minerals. This can be explained that, carbohydrates are being consumed more than any of the nutrients, followed by proteins, then fats and oils.

Table 4.6: The types of food habits of respondents

Types of food habits	Frequency	Percentage %
Snacking	50	50.0
Dieting	40	40.0
Skipping meals	08	08.0
Drinking alcohol	02	02.0
Total	100	100.0

From the Table 4.6, 50 (50%) have been snacking, 40 (40%) have been dieting, 08 (08%) have been skipping meals and 02 (02%) have been drinking alcohol. From the observation by the researcher during the survey, most of the expectant mothers did not have enough time to cook everyday due to some reasons like, more time spent at work place, laziness and numerous household chores. These factors made them to resort to eating snacks and drinks which did not contain all the food nutrients that are needed by the expectant mothers. Some also were dieting, as they said they do not want to put on weight during pregnancy and after birth. The expectant mothers tried to avoid taking in some food stuffs like proteins which help the feotus to develop well and carbohydrates which also give energy and heat in the body. Few were skipping meals and they said they skipped the meals when they felt like vomiting when the aroma of the food got to them. Very few said they take alcohol as an appetizer to help them to eat when they are pregnant.

Table 4.7: The respondent' response on the categories of their food habits whether it is good.

Response	Frequency	Percentage (%)
Yes	**15**	**15.0**
No	**85**	**85.0**
Total	**100**	**100**

From Table 4.7, a few number of the respondents as indicated by 15 (15%) had good food habits which should help to prevent most of the bad implications during pregnancy. Having good food habits alone is not just enough, but its effectiveness, thus, how balanced the food is when it contains all the food nutrients in their right proportion and the factors

that influence the food habits. As a result of this, a question on the factors that influence the food habits of the expectant mothers was posed.

Table 4.8: Factors that Influence the formation of Food Habits

Factors	Frequency	Percentage (%)
Religious/Cultural Beliefs	26	26.0
Socio-Economic	32	32.0
Education and Media	23	23.0
Peer Influence	19	19.0
Total	100	100.0

Factors that influence food habits of respondents are represented on the Table 4.8 and it depicts 26 (26%) were influenced by religious/cultural beliefs. Thirty-two (32) (32%) respondents said they were influenced by socio-economic issues (money available, geographical location, technological advancement and foreign influence), 23 (23%) indicated that they were influenced by education and media (television, radio, newspapers, magazines, internets and journals), and 19 (19%) from peer influence (when they choose what their friends also choose to eat which may not be balanced or balanced).

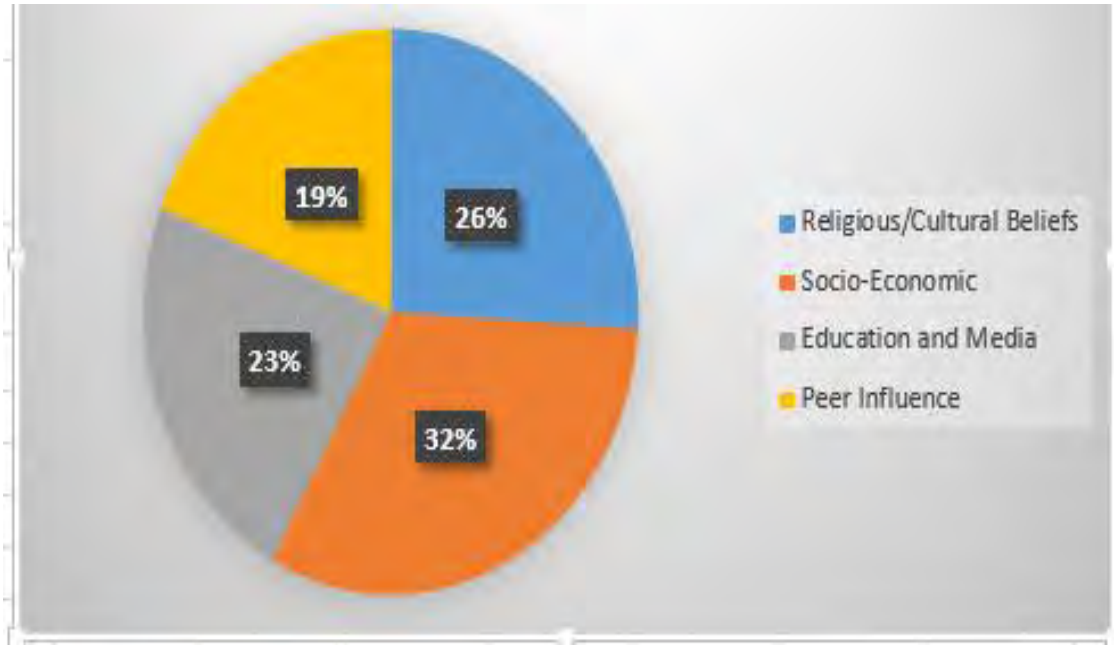

Figure 2: The factors that influence the formation of food habits.

Table 4.9: Positive nutritional Impacts of Food Habits

Good Impacts	Frequency	Percent
Good Health and Nutrients	53	43.0
Waste Prevention	34	34.0
Safe Delivery	23	23.0
Total	100	100.0

Table 4.9 shows the positive impacts of good food habits on respondents. It was found that 53 (53%) of the expectant mothers have good health and more nutrients in their diets from having good food habits, 34 (34%) wanted to prevent waste of money that was why they practiced good food habits and 23 (23%) practiced good food habits because they are expecting safe delivery.

Table 4.10: Pre-Natal Negative Nutritional Impacts of Food Habits

Pre-Natal	Frequency	Percent
Loss of appetite	22	22.0
Complications	35	35.0
Diseases	24	24.0
Death	19	19.0
Total	100	100.0

Negative impacts of food habits at the pre-natal stage showed 22 (22%) of the respondents choose loss of appetite (reduced intake of food which is caused by deficiency of zinc which can be found in beef, ready to eat cereals, milk and poultry), 35 (35%) chose complications (miscarriage; this can occur when the mother lacks vitamin D, for calcium absorption in the body, Omega 3 fatty acids, which help to prevent the abnormal clotting of blood, zinc, which prevent chromosome changes, folic acid and vitamin B12, when the baby did not live through the first few months of pregnancy, pre-mature delivery; also as a result of insufficient amount of zinc and oedema; which is a medical term for fluid retention in the body. It often causes swelling in the feet and ankles. Eating food with too much sodium can result in the swelling of the feet during pregnancy, 24 (24%) choose diseases (anaemia; as a result of lack of iron in the mother, heart diseases; as a result of inadequate iron in the diet and diabetes; as a result of too much sugar in the blood of the mother and 19% feared death both for themselves or foetus. The negative impact is not only observed in the pre-natal stage, it can also affect the unborn babies and the infants.

Table 4.11: Post-Natal Negative Nutritional Impacts of Food Habits

Post-Natal	Frequency	Percent
Deformity	20	22.0
Low birth weight	22	22.0
Heart diseases	30	11.0
Mental Retardation	28	28.0
Total	100	100.0

Table 4.11, reveals that 20 (20%) respondents feared physical deformity of their babies after birth, this can result when the mother lacks calcium and vitamin D (helps with the absorption of calcium in the body). Twenty-two (22%) feared low birth weight of their babies at birth (these are babies born after the full term, thus, thirty-seven (37%) weeks but they weigh less than 2500gms and this can occur as a results of alcoholism,) and eighteen (18%) feared the mental retardation (low intelligence quotient(IQ) of their babies in life. This low intelligence is as a result of the deficiencies in iodine, protein and iron. The above therefore indicates that bad food habits like dieting, snacking, skipping meals and alcoholism will deprive the expectant mothers from getting the needed nutrients which will cause severe malnutrition which results in the negative impacts.

Respondents were asked where they got the information on food stuffs, food nutrients, food habits and the nutritional implications.

Table 4.12: Respondents' source of information

Source	Frequency	Percentage (%)
In school	10	10.0
At the ante-natal clinic	60	60.0
On the television	12	12.0
On the radio	18	18.0
Total	100	100.0

Table 4.12 indicates that 60 (60%) of the respondents got some information at the ante-natal clinic when they went for ante-natal care. Usually, the midwives at the clinic teach the expectant mothers how to take good care of themselves; personal hygiene, good sanitation practices and good food to eat to help them get healthy and beautiful babies, 18 (18%) of the respondents heard the message on the radio. Radios in the country usually have times that they invite resource people to come and talk about some issues. Most of the people in the country listen to the radio nowadays and so they take the opportunity to have many educative programs on the radio. One of these educative programs is on foods, nutrition, and health, 12 (12%) of the respondents said they heard the information on the television, just as the radio, people watch television very much and so such information are given on the television, 10(10%) said they learnt them in school, some at the Junior secondary school and some at the Senior secondary school in Life Skills and Home Economics respectively.

4.3 Discussion of Results

The sequence of the presentation and discussion of the results obtained in the study were in accordance with the questions formulated for the study. The study sought to establish information from expectant mothers on their food habits and the impact on them and their unborn babies, Mampong Municipal**.**

The finding of this study has shown that nutritional implications during pregnancies and after pregnancies are mostly caused by the food habits of the expectant mothers and the factors that influence the formation of their food habits to be bad or good food habits. Looking at the ages of the respondents, most of the expectant mothers who answered the questionnaires, 59 (59%) were between the ages of 26-35 followed by 36 (36%) who were between the ages of 16-25. This means that most of them are mature and have experience in the selection of food and the factors that influence the formation of certain food habits during pregnancy period.38% of the respondents have Secondary school education, 25(25%) have Tertiary education and 27 (27%) have Basic education. This made it somehow easier for the researcher to get the information needed.

Majority of the respondents 32 (32%) said they normally chose from starchy roots and plantain, 19 (19%) choose from grains and cereals, 14 (14%) from animal and animal products and 35 (35%) from fruits and vegetables. From the discussion the researcher had with the respondents, they accepted that they do not usually chose fruits but only vegetables. This shows that most of the foods we eat as Africans are mostly carbohydrates with little animal flesh and products and vegetables but sometimes no fruits throughout the day. According to Sarkodie (2014), the day meal should contain all the food nutrients in their correct proportion which is termed as balanced meal. This balanced meal is needed by the expectant mothers in order to supply all the nutrients the feotus will need for their development.

It was observed that expectant mothers are aware of the food nutrients that are found in the food they eat, they said their food contain forty (40%) carbohydrates,30 (30%) proteins, thirteen (13%) fats and oils, ten (10%) vitamins and seven (07%) minerals. It is identified that most of the food we eat contain large amount of carbohydrates (examples are; plantain, cassava, cocoyam, taro, potato, yam, maize, oat, wheat, millet and sorghum) followed by proteins (examples are; beef, mutton, chevon, pork, chicken and game), fats and oils (examples are; palm oil, cooking oils, margarine, cheese and butter), vitamins found in fruits, vegetables and animals, then lastly, minerals also found in fruits and vegetables, grains, nuts and animals. All these food nutrients are very important to be provided in the diet of individuals to help the body to use them to provide heat and energy, protect the body against diseases, repair worn out tissues, promote growth and protect the vital organs in the body. Water is also a food nutrient which most people do not know. In the body, 50-60% of the body weight is made up of water and the blood is 90% pure water. Water performs numerous functions in the body, which are, regulation of body temperature, removal of waste products, cushioning delicate body tissues and embryo and lubrication of membrane (Kwakye & MacArthur, 2014).

It was observed that most of the expectant mothers 50 (50%) were snacking because they used to take biscuits, pastries and drinks especially in the afternoon instead of eating meal at lunch. In the discussion, they said, they sometimes feel lazy to cook at home and sometimes do not want to buy food outside the house so they sought to snacks. Snacking can provide quick energy and help to satisfy hunger until the next meal. Snacking on pastries and soft drinks is not the best. Junk foods such as pastries, sugary foods supply only energy and are less-dense foods. Snacks must be based on fresh fruits, plain yoghurt, whole grain cookies, breads and muffins, raw vegetables, plain unsalted popcorn, dry-roasted nuts and milk if these can be afforded (Kwakye & MacArthur, 2014). Forty (40%) of the mothers also were dieting, their reason was that they do not want to put on weight. The best way to

lose weight is to plan meals very well, eat sufficient nutrient- dense foods, increase exercise and decrease calorie consumption. Some were also skipping meals 8 (8%) because they said they do not want to eat all the meals in the day especially when they smell the aroma of some foods and they feel like vomiting. According to Sarkodie (2014), when meals are skipped, the daily nutrient requirements may not be met. No matter the reason for skipping meals, it is advisable to stick to a regular schedule of meal and snacks. The body prepares itself to digest meals at specific times. The regular eating habit is where an individual eats three times a day, that is, breakfast, lunch and supper. If a meal is skipped, it disturbs the body system. Then lastly, few 2 (2%) said they always feel like taking alcohol when they are feeling bored and sad. Excessive alcohol can end in damage to the liver and heart, small heads and low birth weight in babies. Mostly when people snack, diet, skip meals and drink alcohol, they lack most of the food nutrients in their bodies and if a certain nutrient is lacking in the mother's body, the feotus will also not be able to get it in their bodies and this may result in the negative nutritional impacts.

The responses of the expectant mothers as to whether they have good food habits or bad food habits, 15 (15%) of the mothers said their food habits were good because they think they do not practice snacking always on empty calorie foods, they do not practice dieting, skipping meal and alcoholism but according to Kwakye & MacArthur, (2014), meals that are not planned well to include all the food nutrients will result in nutritional complications in the mother and the baby. 85 (85%) accepted they have bad food habits as they snack, diet, skip meals and drink alcohol and because of these they do not eat balanced meals in the day.

The factors that influence the formation of the food habits are that twenty-six (26%) of the expectant mothers are influenced by culture/ religious beliefs to form their food habits. Some are Muslims who do not take pork, some are Christians who do not take animal flesh and sometimes animal products. These religious beliefs may deprive the

expectant mothers from getting iron, calcium and other nutrients found in animal foods, thirty-two (32%) of them said they are influenced by socio-economic issues; families are divided into low income, medium and high income families in terms of meals. Those who have insufficient money cannot afford to buy especially, the animal flesh and products and sometimes fruits as they become expensive when they are not in season, according to Kwakye & MacArthur (2014), the result of malnutrition is characterized by protein deficiency diseases. Twenty-three (23%) are influenced by education and mass media. Education gives knowledge to the expectant mothers on the proper methods of food choices, preparation, services and varieties of meals which will help them to get maximum the amount of nutrients in their bodies to be supplied to the feotus. The mass media are made up of audio, visual and audio-visual (Sarkodie, 2014). The availability of these help to educate the expectant mothers on food and nutrition and health. Nineteen (19%) of the expectant mothers selected peer influence. This can also influence one's food habits especially if the group members belong to different cultures. For example, a northerner will learn some habits from the southerners and vice versa. Food habits may be a blend of two cultures. Several people learn the food habits informally and then become accustomed to the new habits (Kwakye & MacArthur, 2014). This peer influence can affect the nutritional contents of the food when the selected food stuff, method of preparation and storage of the food is properly or not done properly.

The positive impacts of food habits on the nutritional status of expectant mothers, fifty-three (53%) of the respondents said their good food habits have positive effects on their health because it helps them to get all the nutrients needed in their bodies and the unborn babies and this will help to prevent waste of money on drugs or medical bill, thirty-four (34%) of them said good food habits help them to prevent wasting food because they will take foods that are good for them. They stick to a regular schedule of meals and snacks

(taking in-between meals), twenty-three (23%) said good food habits will help them to have safe delivery of their babies because the food they eat contain all the food nutrients in their right proportions. People are advised to eat variety of foods, avoid too much fats, saturated foods and cholesterol, eat foods with adequate starch and fiber, avoid too much sugar, avoid too much sodium (salt and salty foods) and avoid alcoholic beverages (Kwakye & MacArthur, 2014).

The negative impacts of bad food habits on the mother and the babies during the pregnancy, the mother with bad food habits will have the following nutritional implications (Everette, 2008);

1. Complications can occur and these complications can be miscarriage of the unborn babies, this can occur when the mother lacks vitamin D, for calcium absorption in the body, Omega 3 fatty acids, which help to prevent the abnormal clotting of blood, zinc, which prevent chromosome changes, folic acid and vitamin B12.
2. Low birth weight of the babies at birth (these are babies born after the full term, thus, 37weeks but they weigh less than 2500gms and this can occur as a results of alcoholism,)
3. Mental retardation (low intelligence quotient (IQ) of the babies in life. This low intelligence is as a result of the deficiencies in iodine, protein and iron; pre-mature delivery; also as a result of insufficient amount of zinc and oedema; which is a medical term for fluid retention in the body. It often causes swelling in the feet and ankles. Eating food with too much sodium can result in the swelling of the feet during pregnancy (Parikh & Parikh, 2002).
4. Diseases can also occur:
    a. Anaemia; as a result of lack of iron in the mother, heart diseases; as a result of inadequate iron in the diet.
    b. Diabetes; as a result of too much sugar in the blood of the mother.

c. The mothers themselves and foetus or mothers alone and feotus alone can lose their lives. Alcohol consumption is also considered unsafe during pregnancy. Alcohol can pass freely through the placenta, and thus if the mother drinks, so does her unborn child.

Consumption of alcohol during pregnancy is associated with higher risk of birth defects and miscarriage. At high levels, alcohol may cause feotal alcohol syndrome (FAS), which is the leading cause of preventable mental retardation (Chiriboga, 2003). FAS is characterized by mental retardation, malformations of the skeletal system, malformation of the heart and brain, growth problems, central nervous system problems, poor motor skills, increased mortality and problems with learning, memory, social interaction, attention span, problem solving, speech and/or hearing.

Lastly respondents were asked to give the sources of their information on food stuffs, food habits, factors that influenced the formation of food habits and the nutritional impacts of the food habits, sixty (60%) said they got the information at the ante-natal clinic when they went for ante-natal care. Usually, the midwifes at the clinic teach the expectant mothers how to take good care of themselves; personal hygiene, good sanitation practices and good food to eat to help them get healthy and beautiful babies, eighteen (18%) of the respondents heard the message on the radio. Radios in the country usually have times that they invite resource people to come and talk about some issues. Most of the people in the country listen to the radio nowadays and so they take the opportunity to have many educative programs on the radio. One of these educative programs is on foods, nutrition, and health, twelve (12%) of the respondents said they heard the information on the television, just as the radio, people watch television very much and so such information are given on the television, ten (10%) said they learnt them in school, some at the Junior secondary school and some at the Senior secondary school in Life Skills and Home Economics respectively.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings and conclusions of the study. In addition, recommendations for stakeholders, and area for further research towards the nutritional impact of bad food habits on the health status of other people are also considered.

5.2 Summary of the main findings

The purpose of the study was to assess the food habits of expectant mothers and the impact on the mothers and the babies in Mampong municipal.

A survey was therefore conducted using questionnaire for expectant mothers and discussion was also used. The target population for the study comprised all the expectant mothers who visit the seven selected maternity clinics. Simple random sampling was used to select the maternity clinics used for the study which included: District maternity hospital, Calvary health center, Quality Health Center, Nadaworoma Health Centers, Philippa Health Centers, Kofiase Health Center and Asaam Health Centers. Quota sampling was used to determine the number of expectant mothers to be drawn from each health centers and simple random sampling was employed in the selection of the expectant mothers used for the research. All the above methods were used to generate a grand total sample of one hundred expectant mothers from the Mampong municipal. Fifty-nine (59) (59%) of the expectant mothers had ages 26-35, thirty-six (36) (36%) of the expectant mothers had ages16-25. Twenty- seven (27) (27%) had basic education, thirty-eight (38) (38%) had senior secondary education and twenty-five (25) (25%) had tertiary education.

The major findings of the study were:

Majority of the expectant mothers admitted that they had problem selecting fruits as a food stuff in their meals for the day. Out of the100 expectant mothers only 35 (35%) said they choose vegetables in their meals for the day but during the discussions they admitted they do not eat fruits at all, the expectant mothers said they do not include fruits in their meals because it is not their habit of eating fruits, they usually eat the fruits when they are abundant especially when mangoes are in season.

There was also the identification of all the nutrients in food which were; carbohydrates, proteins, fats and oils, vitamins, minerals and water, which are absorbed in the body after digestion of the food we eat.

Bad food habits of the expectant mothers were identified when fifty (50%) of the expectant mothers were snacking, 45 (45%) were dieting eight (8%) were skipping meals and 2 (2%) were drinking alcohol. It was also identified that eighty-five (85%) of the expectant mothers agreed to the fact that they do not have good food habits and only fifteen (15%) said they have good food habit as they plan their meals for the day to include all the food nutrients in their right proportions.

The factors that influence the formation of food habits were identified when twenty-six (26%) respondents said they were influenced by culture/religious beliefs, 32 (32%) said they were influenced by socio-economic issues, twenty-three (23%) said they were influenced by education and mass media and lastly, nineteen (19%) said they were influenced by peer pressure. Because of these factors, most of the expectant mothers do not get the right amount of nutrients in the food they eat which the feotus too do not get them from the mothers and this results in most of the negative nutritional impacts on the mothers and the babies.

Some the positive impacts of good food habits were identified when fifty-three (53%) of the respondents said they get nutrients from the food they eat and so they have good health, thirty-four (34%) said they practice good food habits so that they can prevent waste of the food that are available, and twenty-three (23%) said because they want safe delivery of their babies, they try to practice good food habits.

Pre-natal negative impacts of bad food habits were identified when twenty-two (22%) of the respondents agreed that bad food habits can result in loss of appetite of the mother which will prevent the mother from getting the nutrients needed in the body for the feotus to get to develop in the womb, thirty-five (35%) agreed that bad food habits can result in complications like miscarriage, still births and pre mature births, twenty-four (24%) agreed that bad food habits can cause diseases like diabetes, aneamia, heart diseases and oedema, nineteen (19%) also said that bad food habits can result in death of themselves or the babies when they are born.

Post-natal negative nutritional impacts of food habits were also identified when 20 (20%) of the expectant mothers said that bad food habits can cause physical deformity in the babies when they are born, twenty-two (22%) said bad food habits can result in low birth weight of their babies, thirty (30%) said it can result in the babies developing heart diseases and twenty-eight (28%) said their babies can develop mental retardation, thus low intelligent quotient (IQ) later in life.

Lastly, the sources of the information the expectant mothers were able to give in the questionnaire, ten (10%) said they learnt about them in school, sixty (60%) said they learnt theirs at the ante-natal clinic, twelve (12%) said they learnt about them on the television, eighteen (18%) said they learnt their information on the radio.

5.3 Conclusions

The factors that influence the formation of food habits can have effects on the expectant mothers and their babies positively or negatively. The factors affect how they select food stuffs to prepare their food, it can either by a well-planned meal which contain all the food nutrients in their correct proportion or it can also be meals that do not contain all the needed food nutrients which can cause the negative nutritional implications. A well planned meal can result in positive nutritional implications which are; maintenance of good health of the mothers and the babies, prevent waste of food and money in paying medical bills and safe delivery of the babies. The negative implications of unwell planned meals and alcoholism are; increase miscarriages and still births, increase in low birth weight of babies, mental retardation in babies in life; oedema, aneamia, loss of appetite, diabetes, and heart diseases in the mothers.

5.4 Recommendations

Based upon the findings of the study, the researcher has recommended the following suggestions to help improve the health of expectant mothers and their babies and to reduce mother and child mortality in the Mampong municipality. The health service and the Ministry of health can organize seminars/workshops to increase the teachings of food, nutrients and health on radios, television stations, in schools and at the ante-natal clinics. Expects in curriculum development of the health training schools should incorporate the teaching of food nutrients and their implications on the health of all kinds of human beings, especially the venerable people in the society like children, pregnant mothers, lactating mothers, adolescents and the aged. The role of the Ghana Association of health workers in this exercise is very important so that the health workers especially the midwifes at the maternity centers will teach the expectant mothers during ante-natal visits, post-natal visits

and at the Out patients department (OPD) of the hospitals. Internal generated funds should be used to support the midwifes, nutritionist or dietitians to get teaching and learning materials on food stuffs and other materials that can be needed to teach the mothers at the various hospitals, maternity centers, on radios and on the televisions.

The Ghana Health Service (MOH) should organize periodic in-service training for the health workers and the non-professional health workers who help in the teaching at the various hospitals on the need to teach the eating of balanced meals to help improve the health of the expectant mothers who visit the health centers.

The government (GHS/MOH) in conjunction with philanthropists, non-governmental organisations and private firms should provide grants and donations to provide computers for research, relevant books on food, nutrients and health to enhance the teaching processes in the hospitals.

The health workers need to be motivated, and incentive packages need to be put in place by the government to attract more nurses in the teaching of food, nutrients and health and also encourage expectant mothers and others who will follow the teachings in the hospitals.

In conclusion, it could be seen that negative nutritional implications of expectant mothers and the babies are bleak to high mortality rates. It is however, believed that if all the recommendations are given the needed consideration by the appropriate bodies, health of expectant mothers and the babies will improve.

5.5 Suggestion for further/future research

This research work cannot be generalized because of it limited scope in nature, as it only considered few selected expectant mothers within the study area.

This researcher therefore suggests that future research work should delve into more selected expectant mothers within the Mampong Municipality and not only selected expectant mothers if possible, the research should include all the expectant mothers in Ghana. The sample size of the respondents can be broaden to help the findings to be generalized and considered more valid.

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APPENDICES

APPENDIX A

QUESTIONNAIRE FOR EXPECTANT MOTHERS

This exercise is to find out your food habits during pregnancy period, what factors influence the food habits and the impact of the food habits on the mother and the baby. Please read each statement carefully and answer them as frankly as you can. Your responses will not be disclosed to anyone.

Tick (v) where appropriate and supply information were necessary.

SECTION I: Demographic information about respondents.

1. Age ……. (years)

   a. 16 – 25 b. 26 – 35 c. 36 – 45 d. 46 - 55

2. Marital status

   a. Single ( ) b. Married ( ) c. Separated ( ) d. Widowed ( )

3. Educational level

   a. Basic ( ) b. Secondary ( ) c. Vocational ( ) d. Tertiary ( )

   e. others ( ) Specify ……

SECTION II: Food stuffs habits of expectant mothers.

4. Which type of food stuff do you usually choose for your meals?

   a. starchy roots and plantain ( ) b. fruits and vegetables ( ) c. cereals and grains ( ) d. animal and products ( )

5. Tick the type of food habits you have.

a. Snacking( ) b. Dieting ( ) c. Skipping Meals ( ) d. Drinking Alcohol ( )

6. Does your food habits affect the food stuffs you choices?

Yes ( ) No ( )

7. Do you know the food nutrients that are in the food we eat?

Yes ( ) No ( )

8. Tick the nutrients you know

a. proteins ( ) b. water ( ) c. vitamins ( ) d. minerals ( )

e. fats and oil ( ) f. carbohydrates ( )

9. Tick the foods you can get proteins from

a. meat ( ) b. egg ( )

c. snails ( ) d. plantain ( )

10. Tick the foods you can get water from

a. fruits ( ) b. soup ( ) c. porridge ( ) d. stew ( )

11. Tick the foods you can get vitamins from

a. vegetables ( ) b. fruits ( ) c. milk ( ) d. meat ( )

12. Tick the foods you can get mineral salts from a. fruits ( ) b. milk ( ) d. meat ( ) e. liver ( )

13. Tick the foods you can get fats and oils from

a. margarine ( ) b. cooking oil ( ) c. cheese ( ) d .soya beans ( )

14. Tick the foods that you can get carbohydrate from.

a. plantain ( ) b. cassava ( ) c. yam ( ) d. cocoyam ( )

15. Where did you learn about nutrients in food?

a. in school ( ) b. on the television ( ) c.at the ante-natal clinic ( )

d. on the radio ( )

SECTION III: factors that influence the formation of food habits of expectant mothers.

16. Which of the factors you know influence the formation of your food habits? a. socio-economics ( ) b. culture/ religious beliefs ( )

c. education and mass media ( ) d. peer pressure ( )

17. Where did you get the knowledge on food habits

a. in school ( ) b. at the ante-natal clinic ( )c. on the radio ( )

d. on the television ( )

18. Is food habit the same as food choice or selection?

Yes ( ) No ( )

19. What influences the food stuffs you choose or select to prepare meals?

a. food habits ( ) b. food values ( ) c. food nutrients ( ) d. food fads ( )

SECTION IV: nutritional impacts of food habits of expectant mothers.

20. What positive nutritional impacts will you get when you practice good food habits?

a. Safe delivery ( ) b. promote good health ( ) c. saves money ( )

d. prevent waste of food ( )

21. Tick from the following: Agree, Strongly Agree, Not Sure, Disagree, Strongly Disagree; being the negative nutritional impacts of food habits on the expectant mothers.

Impact	**Agree**	**Strongly Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
a. Anaemia					
b. Pre mature delivery					
c. Heart diseases					
d. Loss of appetite					
e. Oedema					
f. Diabetes					

22. Tick form the following; Agree, Strongly Agree, Not Sure, Disagree, Strongly Disagree; being the negative nutritional impacts of food habit on the babies.

Impact	**Agree**	**Strongly agree**	**Not sure**	**disagree**	**Strongly disagree**
a. Pre- mature babies					
b. Dull and timid					
c. Low birth weight					
d. Physical deformity					
e. Heart disease					
f. Mental retardation					
g. Small head					

23. Where did you get the knowledge or information on food stuffs, food nutrients, food habits and the impacts? a. in school ( ) b. at the ante-natal clinic ( )

c. on the radio ( ) d. on the television ( )