Abstract

The study is to examine the relationship between mothers’ nutritional knowledge and practices and their relationship with children’s food habits in Delta North Senatorial District. Four (4) research questions guided this study. The study tested one null hypothesis. The study adopted a survey research design. The population was six hundred and twenty-one thousand, three hundred and six (621,306) mothers within the childbearing age in Delta North Senatorial District. A sample of 300 mothers were selected for the study using the multi-stage sampling technique. The instrument for data collection in this study was a structured questionnaire. The instrument was validated by experts in Home Economics, and Measurement and Evaluation Departments from Delta State University, Abraka. Split-half reliability was used to determine the reliability of the research instrument. The analysis yielded a Spearman Brown coefficient of 0.75, signifying that the instrument is adequate and reliable for the study. Data collected were analyzed with Mean and Standard Deviation. The hypothesis was tested with Pearson correlation statistical tool at 0.05 level of significance. The findings revealed that mothers in Delta North Senatorial District have knowledge of nutrition. It also identified, 11 food habits (which include; preference for sugary foods when allowed to make their own choices, eating and playing, among others) exhibited by children. From the study, it was concluded that mothers play a crucial role in influencing their children’s dietary behavior, and are expected to serve as good models to their children by adopting the relevant nutritional practices and habits that their children can learn from. Based on the findings, it was recommended that: public health messages should be geared towards enabling mothers to make healthy food choices for themselves and their children among others.

Keywords: Nutrition Education/Knowledge, Childhood Nutrition, Food Habits

Introduction

Adequate nutrition is important, not only for the child’s survival but also for optimal physical mental development, as well as good health. Nutrition is a significant factor in growth, development and overall functioning of an individual. Good nutrition provides the energy and nutrients essential to sustain life and promote physical, social, emotional and cognitive development (The United State National Library of Medicine, 2012). Good nutrition does not only involve eating food, it also culminates those other factors that are linked with consumption such as foods choices, food habits, exercise, rest and other healthy nutritional practices. Good nutrition leads to a stronger immune system, less illness and better health. The relationship between nutrition and health cannot be especially during the first few years of life. It is a fundamental base for a child’s survival and prevention of malnutrition. According to the Society for Concise Nutrition (2003) quoted in Ihensekhien, Obasigie and Egbeahie (2009) it is during infancy and early childhood that irreversible faltering in linear growth and cognitive deficit associated with anaemia occurs. Ventura (2017) defines childhood as “the age span ranging from birth to adolescence. According to Piaget’s theory of cognitive development, childhood consists of two stages: preoperational stage and concrete operational stage. Childhood stage is non-specific and can imply varying range of years in human development. Developmentally and biologically, it refers to the period between infancy and adulthood.

For the purposes of this study, childhood is considered from the age of two (2) to years to thirteen (13) years in accordance with (Robb, 2012). Many researchers like Lansdown (2022) childhood
as a concept of play and innocence which ends at adolescence. The concept of childhood appears to evolve and change as lifestyles change and adult expectations alter. It is widely believed that children should not have any worries and should not have to work, life should be happy and trouble-free during childhood. Childhood is a mixture of happiness, wonder, anxiety and resilience. It is generally a time for playing, learning, socializing, exploring and worrying in a world without much adult interference aside from parents. It is a time of learning about responsibilities without having to deal with adult responsibilities. To carry out a healthy childhood, parents owe their children the responsibility of caring for them, protecting them from harms and dangers as well as providing for their needs. Perry (2014) stated that it is the duties of the parents to protect their children from malnutrition and its unhealthy consequences.

During early childhood and school years, children begin to establish habits for eating and exercising that stick with them for their entire lives. If children establish healthy habits, their risk for developing many chronic diseases will be greatly decreased. On the other hand, poor eating habits and physical inactivity during childhood set the stage for problems in adulthood. In contrast to the rapid physical growth and development experienced during infancy and adolescence, the childhood years loosely defined as the year between 2 and 13 are typically characterized by much slower and more stable physical growth. On average, children gain 2-4 kilogram of weight and adds 1-4 inches of height per year (Robb, 2012). At approximately age 10 or 11 the rate of growth once again begins to increase, an indication that they will soon enter puberty. As a result of this slower physical growth and development, the body’s need for certain nutrients, most notably calories and protein, are not as high as during infancy. Interestingly, the body naturally compensates for this, and, as a result, it is not uncommon to see a young child with a decreased or inconsistent appetite.

On the other hand, as children enter school, and begin to participate in organized sports and other activities that result in an increase in physical activities, their appetite and food intake usually increases. Starting school and participating in structured activities places new social, emotional and mental demands on children. Consequently, the school-age years are characterized by intense development in social and cognitive skills. Without adequate nutrition, children will experience mental and physical fatigue, have difficulty concentrating on learning task, and will ultimately exhibit slower cognitive and behavioral development (American Dietetic Association, 2015). Often when children attain the school age, the parents usually breathe a sigh of relief thinking that the stress and hassles over meal times, what to eat for snacks, introducing new food and encouraging children to form healthy food habits are done with. But that is far from the truth. Children beginning their school years still have many nutritional needs to meet. Children entering school face new ideas about eating. Decisions about school lunch influences, from friends at school, and opportunities to select their after school snacks will affect nutritional habits that may last a lifetime. School-aged children are still growing as Emeh (2015) stated that Growth requirements combined with physical activities play a role in determining a child’s nutritional needs. Genetic background, gender, body size and shape are other factors. The nutrients needed by children are the same needs by adults but the amount vary.

Nutrients for the Growing Years

A. Carbohydrates and fats provide energy for growing and physical activities especially for times when children hit period of rapid growth.

B. Protein builds repairs and maintains body tissue. It is especially important for growth. Presently due to the economic recession going on, protein deficiency may occur, if parents do not ensure that their children get enough protein in their meals.

C. Vitamins and Minerals: Tompkins (2001) opined that there are varieties of vitamins and minerals which support growth and development during childhood. Bone density suffers when calcium needs are not met during childhood years. Osteoporosis, a brittle bone disease that affects older adults, begins in childhood if diets are not providing adequate calcium-rich foods (Eme, 2015).

i. Iron- deficiency anemia can be a problem for some children. Children need iron for expanding blood volume which is accompanied during periods of rapid growth. For girls, the beginning of menstruation in late childhood adds an extra demand for iron due to regular loss of iron in menstrual
blood. Meats, fish, poultry, and enriched breads and cereals are the best sources of dietary iron.

ii. Most children eat diets that are adequate in vitamin A and C. When children do not eat enough fruits and vegetables they run risk of having low intake of vitamin A and C. B complex vitamins (thiamine, niacin, riboflavin and other B vitamins) comes from a variety of foods including grain products, meat and meats substitutes and dairy products.

It is important for school age children to meet the recommended intake level of all essential vitamins and minerals.

Good or poor nutrition during these critical formative years has both immediate and long-term impacts. It is therefore of great importance that caregivers most especially mothers who are in charge of family nutrition are as well as healthy nutritional practices that are vital for the development of positive food habits and choices in the children.

The term food habits (or eating habit or feeding habits) refers to why and how people eat, which food they eat and with whom they eat, as well as the ways people obtain, store, use and discard food. Ukpore (2007) defines feeding habits as the settled practices of eating particular foods. According to Merser (2008) food habits are the habitual decisions an individual or a culture makes when choosing what food to eat. Rodriguez (2015) refers to eating habits as the way which different people select, cook, serve and eat food that are available to them. What an individual eats depends on his food habits. How and why he eats what he eats also elaborates his eating habits. All humans eat to survive. They also eat to express appreciation, for a sense of belonging, as a part of family customs, and for self-realization. For example, someone who is not even hungry may eat a piece of cake that has been baked in his or her honor. People eat according to learned behaviors regarding etiquette, meal and snack patterns acceptable foods, food combinations, and portion sizes. Various food guides provide suggestion on foods to eat, portion sizes and daily intake. However, personal preferences, habits, family customs and social setting largely determine what a person consumes.

What and how people eat is determined by a variety of factors, including economic circumstances, cultural norms, sociological factors, Psychological and religious restriction. Dietary habits are interwoven with the emotional and cultural life of people. Those habits are handed down from generation to generation by the social training culture, there are both acceptable and unacceptable foods, though this is not determined by whether or not something is edible for instance some animals such as snakes, monkeys and tortoises are considered delicacies in some culture while others forbids their consumption. Conforming to these cultural dietary norms gives the citizens a sense of belonging and acceptance within a cultural setting. (Rodriguez, 2015).

To utilize food correctly, the family needs a sound knowledge of Nutrition Education, correct utilization of food is very important because when food is not handled well, it may bring about nutritional disorders. Knowledge can come from either education or experience. A person can acquire ideas about an issue from educational experiences/learning or exposure to real life situations on the issues. A mother can be educated or otherwise, experience or unexperienced in nutritional issues. To impact learning, recipients can be exposed to formal or informal experience. Most times experience can come from being in a business for a long period of time.

According to Mckinnon (2014), nutrition knowledge is broadly defined as a knowledge of concepts and processes related to nutrition in health including knowledge of diet and health, diet and diseases, foods representing major sources of nutrient, and dietary and guild line and recommendations. This broad based definition of nutrition knowledge is necessary to capture the complex and wide ranging nature of information used to inform dietary habits and choices. The present day society is plagued with many nutritional disorders such as obesity, diabetes, heart and renal diseases and cancers. These have created an issue of great concern for the government, institutions, families and the society at large. These nutritional disorders usually cause the victims/patients, physical, emotional and psychological discomforts. Apart from these discomforts, they tend to consume a lot of resources that would have gone into a more worthwhile venture in the cause of treating them. These health
problems do not develop overnight or without cause. They are as a result of unhealthy food habits and choices of the individual concerned.

As studies such as one by (WHO 2021) have shown that food habits formed at an early stage stick more than the ones picked up as grown-ups, it is correct to state that some of these nutritional issue are planted at the early stages and are nurtured until they manifest. Whether healthy or unhealthy food habits and choices are dependent on the nutritional knowledge and practices the individual was exposed to as a young child. There is then a need to look into the food habits of the young ones and the key factors that influence them.

The family setting in Nigeria places the mother on the centre of child and family care. The mother nurtures and takes care of the child. Though the father plays his own role, the society bequeaths the mother with the role of cooking and serving of family meals almost at all times. Since she is always there, it is only rational to state that the children will pick most of their nutrition trait from her as her actions might be influencing the children directly and indirectly. In Delta North Senatorial District, the nutritional situation is not significant in the sense that some mothers tend to focus on the non-nutritional factors while selecting foods for their family. A casual observation into family nutrition shows that factors like physical appeal of food, weather, economic class are the basis upon which the residents of these areas choose their foods (self-observation). The children’s diet especially during school periods tend to be sugar dense. It is observed in Delta North Senatorial District that less attention seems to be paid to the nutritional content of food. Hence the need to examine the nutritional knowledge and practices of mothers and their relationship with children’s food habits and choices is apt.

**Purpose of the Study**

The main purpose of this study is to examine the relationship between mothers’ nutritional knowledge and practices and the food habits and choices of young children in Delta North Senatorial District. Specific objectives of the study include to:

1. determine the nutritional knowledge of mothers in Delta North Senatorial District.
2. find out the food habits exhibited by children in Delta North Senatorial District.
3. determine the relationship that exist between the nutritional knowledge of mothers and their children’s food habits.
4. identify the strategies that can be employed for improving the nutritional habits of the children in Delta North Senatorial District.

**Research Questions**

This study was guided by the following research questions:

1. How knowledgeable are mothers about nutrition in Delta North Senatorial District?
2. What are the food habits exhibited by children in Delta North Senatorial District?
3. What is the relationship between the nutritional knowledge of mothers and the children’s food habits?
4. What strategies can be employed for improving the nutritional habits of the children in Delta North Senatorial District?

**Hypothesis**

There is no significant relationship between mothers’ nutritional knowledge and children’s food habit in Delta North Senatorial District. Contento, Balch & Bronner (2005) quoted in Ajani (2019) opined that nutrition education is important to individual and specifically to mothers as it helps them to identify as well as drop unhealthy dietary habits and food choices. It also educates mothers on how to use cheap available foods and other economic resources to meet family nutritional needs. Children tend to pick up their dietary and lifestyle habits from those that are around them. An exposure to proper nutrition knowledge and practices will help to guide the children and improve their dietary habits. Nutrition education can influence the way children view food and eating habits. It can inspire them to reach for vegetables and non-processed foods instead fruits and of sweets. It can shape the children’s perspective of health and wellness for the rest of their life. Positive dietary practices of the mother may result in a positive food habits in the children as they are imitators. Birch et al (2015) stated that nutrition education may also help children to combat the constant array of aggressive marketing techniques put forth by companies selling sugar treats, processed snacks, and fast food options by teaching them correlation between eating healthy and living well, in addition to showcasing the
adverse effects that malnutrition and unhealthy eating can have on their bodies. 

Crain (2013), emphasized the influence of family meals as it in no small measure influence the eating behaviours of children actively and passively. In Oshimili North and Oshimili South Local Government Area, the mothers are the cooks and servers of family meals, thus they may influence the children in no small measures. The mothers’ knowledge and practices of nutritional skills may be passed on to the children via observation and imitation. Again, a mother’s display food practices may have effects on the children. Skafida (2013) stated that a mother (Parent)’s stylish display of food mostly fruits and vegetables during mealtimes will make those food items attractive to the children. Ventura (2017) opined that to handle family nutrition better, parents should equip themselves with proper knowledge of childhood, its psychology and nutritional requirements as well as other behaviours associated with the stage. A mother will make use of this knowledge while attending to her children. When the mother lacks nutritional knowledge, it may be noticed from her children; they may either be under-nourished or over-nourished depending on the economic status of the family and will display food habits in accordance with the ones they are exposed to.

In order to help children develop healthy dietary habits, the European Food Investigation Council (EUFIC), (2012) suggested that children should be encouraged to grow their own foods. This strategy works best for vegetables; if a child grows any vegetable or even fruit, he will be enthusiastic in eating it. Positive Role Modeling: Eme (2015) pointed out that children also learn about food by observing the eating behaviours modeled by others. Since these young ones learn by example and association it is very important that the people around them especially the parents have positive nutritional traits which the children can emulate.

Get the children involved in meal preparations: Eze and Njoku (2018) opined that when children are made to participate in the preparation and serving of meals at home, it encourages them to develop positive food habits and choices especially when the meals prepared are well selected and balanced. Avoid using food as a reward: Eme (2015) stated that using food as a reward have an inadvertent result in that rewarding children for consuming healthy foods actually results in decreased preference for those foods. According to Ajani (2019) when food is freely available, children will choose more of the restricted than the unrestricted food when the mother is not present.

Eat Together as a Family: Children who eat meals with their families tend to eat healthier foods like fruits, vegetables and whole grains (EUFIC, 2012). Eating together as a family also reduces snacking and helps build positive food habits and choices as well as inculcate valuable social behaviour. Expose children to Nutrition Education at an early age: When children are exposed to nutrition education, they understand the relationship between nutrition and health (Ehumadu, 2010). According to Copp (2013) early exposure to sound nutrition education is a strategy towards improving dietary behaviours of children.

Methodology 

Research Design

This study on Nutritional Knowledge and Practices of Mothers and their Relationship with the children’s Food Habits and Choices adopted a survey research design. The study adopted this design because it is reviewing facts that have already been accessed, and thus there was no manipulation of variables.

Population for the Study

The study population comprises of mothers within the child bearing age (that is 22 to 50 years old) in Delta North Senatorial District. According to the Delta State Bureau of Statistics (2020) the population of females in Delta North Senatorial District sum up to six hundred and twenty-one thousand, three hundred and six (621,306). The population of the study is shown below:

Sample and Sampling Techniques

The sample size for the study was 300 mothers. The multi-stage sampling was employed for the study. The Senatorial Zone under study has nine (9) Local Government Areas and about eighty (80) communities. In this first stage of the sampling, four (4) out of the nine (9) Local Government Areas were randomly selected. In the second stage, four communities were selected from each Local Government Area. Finally, in the third stage, 300 mothers representing 0.05% were selected from those communities that were sampled for the study.
Thus, from each community, fifteen (15) households were selected and one mother from each household. From each LGA, three (3) Primary Health Centres, one Government Hospital and one Private Hospital were selected. Then, four (4) mothers were selected each from the Primary Health Centres, Government Hospitals and Private Hospitals. This

Summarily,
- 4 LGAs × 4 communities = 16 communities
- 16 communities × 15 mothers = 240 mothers
- 4 LGAs × 3 CHC × 3 mothers = 36 mothers
- 4 LGAs × 1 Gen. Hosp. × 3 mothers = 12 mothers
- 4 LGAs × 1 Pvt. Hosp. × 3 mothers = 12 mothers

300 mothers in all

This sample included highly educated, averagely educated and poorly educated mothers. These mothers were civil servants, traders, farmers, artisans and housewives/stay at home mothers.

**Instrument for Data Collection**

The major instrument for data collection in this study was a structured questionnaire. The questionnaire was made up of eighty-four (84) items. There were two sections in the questionnaire, Section A sought for information concerning the demographic data of respondents, such as marital status, educational background, occupation, years of marriage, Local Government of Residence and location; while Section B is comprised of items related to the research questions. The items were rated on 4-point scale of Strongly Agree (SA), Agree (A), Disagree (SD) and Strongly Disagree (SD), with their nominal values of 4, 3, 2, and 1, respectively.

**Validation of the Instrument**

Copies of the questionnaire were given to experts in Home Economics, and Measurement and Evaluation Department. The unnecessary items were restructured to properly answer the research questions. Their corrections were effected before printing the final copy.

**Reliability of the Instrument**

Split-half reliability was used to determine the reliability of the research instrument. Thirty (30) copies of the questionnaire were administered to mothers in Abraka Community, Ethiope-East Local Government Area, Delta State, which is outside the area of the study. The questionnaires were retrieved from the respondents after filling them and inputted into SPSS Version 20 software. The Split-half reliability statistical tool was used to analyze the instrument; the analysis yielded a coefficient of 0.75.

**Method of Data Collection**

A total of 300 copies of questionnaire were given out by the researchers with the help of 2 research assistants. The respondents were given some time to study and answer the questions therein. Afterwards, the researcher and assistants retrieve the copies of the questionnaire. Out of 300 copies of questionnaires that were administered to respondents, only 268 copies were completely filled and returned, indicating 89.33% return rate.

**Method of Data Analysis**

Data collected from items on the research questions were analyzed with Mean and Standard Deviation (SD). A criterion Mean of 2.50 was used as the benchmark for accepting and rejecting items in the questionnaires. The hypothesis was tested with Pearson correlation statistical tool at 0.05 level of significance. The null hypothesis was accepted when the calculated value is less than the table value, and rejected when the calculated value is greater than the table value.
Relationship Between Mothers Nutritional Knowledge and Practices and Their Children’s Food Habits in Delta North Senatorial District

Research Question 1

How knowledgeable are mothers about Nutrition in Delta North Senatorial District?

Table 1:

Mean (x̄) Responses on the Knowledge of Mothers about Nutrition (n=268)

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Mean (x̄)</th>
<th>SD</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nutrition Education entails an active enlightenment about nutrition, health and diseases</td>
<td>3.96</td>
<td>.207</td>
<td>Agree</td>
</tr>
<tr>
<td>2.</td>
<td>A nutritionally informed mother can always meet the nutritional needs of her family from cheap and locally available food items</td>
<td>3.75</td>
<td>.637</td>
<td>Agree</td>
</tr>
<tr>
<td>3.</td>
<td>The major recipients of Nutrition Education are young mother and children</td>
<td>3.53</td>
<td>.823</td>
<td>Agree</td>
</tr>
<tr>
<td>4.</td>
<td>Food habits of an adult to a great extent are made up of food habits learnt as a child</td>
<td>3.66</td>
<td>.713</td>
<td>Agree</td>
</tr>
<tr>
<td>5.</td>
<td>Every nutritional group in the family have cooking methods that are appropriate for them</td>
<td>3.23</td>
<td>1.034</td>
<td>Agree</td>
</tr>
<tr>
<td>6.</td>
<td>In buying food stuff, factors like cost, usage, freshness, should be considered</td>
<td>3.67</td>
<td>.728</td>
<td>Agree</td>
</tr>
<tr>
<td>7.</td>
<td>Attending health centres/clinics and listening to health talks helps to keep the mother abreast of current nutritional information</td>
<td>3.11</td>
<td>1.215</td>
<td>Agree</td>
</tr>
<tr>
<td>8.</td>
<td>News and current information relating to Foods and Nutrition are often disseminated at community health centres, women, workshops and hospitals</td>
<td>3.40</td>
<td>.944</td>
<td>Agree</td>
</tr>
<tr>
<td>9.</td>
<td>It is important for young mothers to expose themselves to seminars, health talks and teachings relating to family living</td>
<td>3.05</td>
<td>.958</td>
<td>Agree</td>
</tr>
<tr>
<td>10.</td>
<td>When it comes to nutrition education and health teachings, the mothers and young children are the most appreciated receivers</td>
<td>3.86</td>
<td>.481</td>
<td>Agree</td>
</tr>
<tr>
<td>11.</td>
<td>Absence of budgeting can bring about economic tensions that might affect family nutrition</td>
<td>3.42</td>
<td>.860</td>
<td>Agree</td>
</tr>
<tr>
<td>12.</td>
<td>In selecting fruits and vegetables, mothers must ensure freshness</td>
<td>3.02</td>
<td>.975</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Source: Field Work

Result in Table 1 revealed that the respondents agreed to the 12 items with a mean (X) rating ranging from 3.02 to 3.96 indicating the mothers have good nutritional knowledge.

Research Question 2

What are the food habits exhibited by children in Delta North Senatorial District?

Table 3

Mean (x̄) Responses on Foods habits Exhibited by Children (n=268)

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Mean (x̄)</th>
<th>SD</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>It is not proper for children to eat and watch television at the same time</td>
<td>3.71</td>
<td>.457</td>
<td>Agree</td>
</tr>
<tr>
<td>2.</td>
<td>Children often do not like/need heavy foods at night</td>
<td>3.08</td>
<td>.978</td>
<td>Agree</td>
</tr>
<tr>
<td>3.</td>
<td>Physical appearance like colour and shape play important role in the dietary habits of children</td>
<td>2.81</td>
<td>1.041</td>
<td>Agree</td>
</tr>
<tr>
<td>4.</td>
<td>Most times, children makes a mess of the food they are given to eat</td>
<td>3.43</td>
<td>.864</td>
<td>Agree</td>
</tr>
<tr>
<td>5.</td>
<td>Most children cannot eat fruits and vegetables except with parent’s encouragement/motivation</td>
<td>2.76</td>
<td>1.195</td>
<td>Agree</td>
</tr>
<tr>
<td>6.</td>
<td>When allowed to make their own choices, children always show greater preference for sugary foods</td>
<td>4.00</td>
<td>.000</td>
<td>Agree</td>
</tr>
<tr>
<td>7.</td>
<td>It is healthy to ensure that children eat breakfast daily</td>
<td>3.44</td>
<td>1.152</td>
<td>Agree</td>
</tr>
<tr>
<td>8.</td>
<td>Nuts like cashew, groundnut and Bambara nuts are easily accepted by children</td>
<td>3.45</td>
<td>.709</td>
<td>Agree</td>
</tr>
<tr>
<td>9.</td>
<td>Just as ice-cream, children also love milk shakes and fruity smoothies</td>
<td>3.71</td>
<td>.544</td>
<td>Agree</td>
</tr>
<tr>
<td>10.</td>
<td>Eating and playing is a common trait of children</td>
<td>3.96</td>
<td>.207</td>
<td>Agree</td>
</tr>
<tr>
<td>11.</td>
<td>When parents are tactful, children can be made to eat even when in a playful mood</td>
<td>3.19</td>
<td>1.108</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Source: Field Work