NUTRITIONAL STATUS OF PRIMARY SCHOOL CHILDREN IN ENUGU SOUTH LOCAL GOVERNMENT AREA, ENUGU STATE

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Title Page

Nutritional Status of Primary School Children in Enugu South
Local Government Area, Enugu State.

A Project Report Submitted to the Department of health and Physical Education, University of Nigeria Nsukka. In Partial Fulfillment of the Requirements for the Award of Master of Education (M.Ed) Degree in Public Health Education.

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Approval Page

This Research Report of **Okoh, Ifeoma Onyinye** has been approved for the Department of Health and Physical Education, University of Nigeria Nsukka.

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Dedication

To Almighty God for his strength and wisdom throughout the period of this study.

Certification

Okoh, Ifeoma Onyinye, a postgraduate student in the Department of Health and PhysicalEducation,UniversityofNigeriaNsukka,with**RegistrationNumber:PG/M.Ed/09/50879** has satisfactorily completed the requirements for the course and research work for the award of Masters in Education (M.Ed) Degree in Public Health Education. The work embodied in this project is original and has not been submitted in part or full for any other diploma of this or any other University.

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Okoh,.I.O.

Department of Health and Physical Education (UNN)

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BMI	Body Mass Index
CDC	Centre for Disease Control and Prevention
EAR	Estimated Average Requirement
EQI	Environmental Quality Index
FAO	Food and Agricultural Organization
IQ	Intelligent Quotient
L.G.A	Local Government Area
N.G.O	Non Governmental Organization
NCHS	National Centre for Health Statistics
NSPSC	Nutritional Status of Primary School Children
PEM	Protein Energy Malnutrition
PSC	Primary School Children
SD	Standard Deviation
SES	Socio Economic Status
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

Appendices

Abstract

The study was conducted to ascertain the nutritional status of primary school children in Enugu South Local Government Area, Enugu State. Fifteen specific objectives were posited with fifteen corresponding research questions and twelve null- hypotheses were also postulated to guide the study. The descriptive survey research design was used for the study. The population for the study was eight thousand, eight hundred and seventy primary school children while the sample for the study consisted of 405 PSC. A three-sectioned researcher designed questionnaire was the instrument used for data collection. The instrument was validated by five experts: three from the Department of Health and Physical Education and two from Department of Home and Food Science, all in the University of Nigeria Nsukka. The reliability correlation-coefficient index obtained was .87. Percentages, frequencies and Chi-square were used to analyze the data obtained and testing of hypotheses. The results of the study showed that: majority of PSC were normal regarding height-for-age (stunting) (80.0%), regarding weight-for-height (wasting) (93.6%), and as regards weight-for-age (underweight) (93.1%). Majority of male PSC were normal (83.2%) as regards height-for-age (stunting), female were normal (94.5%) as regards weight-for-height (wasting) and as regard weight-for-age (underweight) (93.6%). Majority of PSC in rural area were normal (89.6%) as regards height-for-age (stunting),as regard weight-for-height (wasting) (95.7%) and weight-for-age (underweight) (95.1%).Also majority of PSC of age group 6.0-6.9 to 9.0-9.9 years were normal (84.4%) as regards height-for-age (stunting), with regard to weight-for-height(wasting) (94.6%),As regards weight-for-age (underweight) majority of the both age were normal(93.2%), higher proportions of food were given to PSC occasionally, 2-3times per week. There were significance difference in location, age group, the proportion of food given to PSC according to level of education of parents/caregivers/guardians, based on income and number of children in the family. Following from the results, discussions and conclusions of the study. The researcher recommended that appropriate counseling on nutritional intake should be given to primary school children to avoid revert, also to their parents or caregivers or guardians. Also government and non government agency should intensify effort on importance of family planning and advocate small family size.

CHAPTER ONE

Introduction

Background to the Study

The quality of nutrition throughout life determines the growth, development and disease susceptibility. Nutrition is a critical part of health and development. World Health OrganizationWHO (2000) stated that nutrition improves childrenôs health, enhances stronger immune system, longevity and lower risk of non-communicable diseases. Healthy children learn better and children with adequate nutrition are more productive. Mandndhar, Krishna and Patowary (2008) opined that the nutritional status is an indicator of the level of the quality of life of school children. WHO (2009) maintained that childrenôs nutritional status is a reflection of their overall health, when children have access to adequate food supply, they can reach their growth potential and are considered well nourished. Nutritional status is essential for identifying undernourished and over nourished states of children and in estimating the optimum intake of adequate nutrition to promote normal growth and well-being. Height and weight are the most commonly used indicators of the nutritional status of primary school children. (Himes, 2009).Hence the need for the anthropometric method.

The anthropometric method which involved the measurement of weight and height to determine the nutritional status of an individual is an easy-to-use method *because it requires weighing scale and a tape measure. The anticipated nutritional status of school children are as follows: < (-2)SD to<(-3)SD indicates weight-for-age(underweight) children, < (-2)SD to< (-3)SD indicates height-for-age (stunting) children,< (-2)SD to < (-3)SD indicates weight-for- height(wasting) and -1SD< X< +2SD of NCHS/CDC median indicates normal children while>+2SD indicates over-nourished children between the ages 6years to 12years (Odenigbo, Odenigbo & Oguejiofor, 2010).According to WHO (2000) appropriate height-for-age of children reflect linear growth and can measure long term growth or stunting (indicator of past or long term under- nutrition) while appropriate weight-for-height reflects proper body proportion or the harmony of growth. Weight-for-height is particularly sensitive to acute growth disturbances and is useful to detect the presence of wasting (indicator of present under nutrition). Weight-for-age represents a convenient synthesis of both linear growth and body proportion and thus can be used for the diagnosis of underweight (convenient synthesis of both present and past under nutrition) children. The presence of under nutrition in children was assessed using these anthropometric parameters thus; weight-for-age, height-for-age and weight-for-height and compared it with internationally accepted reference standards. The outcome showed that children that have a low height-for-age, a z-score below two standard deviations of the reference population mean (-2 Z-score) are categorized as ñstuntedò. Similarly, a low weight-for-age is diagnosed as ñunderweightò children, while a low weight-for-height is indicative of ñwastingò children (WHO, 2009).

According to Suvama (2007) growth is the major characteristics of school children and this is dependent on adequate supply of nutrients. Growth and development of the children is largely dependent on its nutritional status. Ijarotimi and Ijadunola (2007) asserted that nutritional status is very necessary to be determined because it helped in estimating the optimum intake of nutrition to promote good quality of life among primary school children. Hence, the present study used the anthropometrics parameters to determine the nutritional status of primary school children. The parameters are height- for-age which is the index used to compare childrenôs height with the expected value of children of the same age from a reference population. It is a measure of stunting. Secondly, weight -for-height, is the index used to compare childrenôs weight with the expected value of children of the same height. It is a measure of wasting. Thirdly, weight-for-age is the index used to compare childrenôs weight with the expected value of children of the same age. It is a measure of underweight (Pullum, 2008). Davis (2001) maintained that it is vital to recall that the fundamental pillar of childrenôs life, health and development across their entire life span is nutrition.

Nutrition is the process by which living things receive the food necessary for them to grow and be healthy. Nutrition is the study of food in relation to the physiological processes that depends on its absorption by the body growth, energy production, repair of body tissues (Martin, 2003). Nutrition is basically the use of food by the body for the processes of growth, repair and work. (Akinsola, 2006). Basavanthappa (2008) defined nutrition as combination of dynamic process by which the consumed food is utilized for nourishment, structural and functional efficiency of every cell of the body. Panebianco (2009) maintained that nutrition is also known as nourishment from food in order to support life. Nutrition is the intake of nutrients and their subsequent absorption and assimilation by the tissue. Hence, in this study nutrition was referred to as a combination of dynamic processes by which the consumed food is utilized for nourishment, structural and functional efficiency of every cell of the body, adopted from Basavanthappa (2008) because the definition is easy and clearly articulated. Foods that contain the elements necessary to perform various functions in the body are nutrients.

Harper (1999) defined nutrients as a substance present in food and used by the body to promote normal growth, maintenance, and repair. Nutrients are defined as organic and inorganic complexes contained in food (Park, 2009). The present study referred to nutrients as a substance present in food and used by the body to promote normal growth, maintenance, and repair. Nutrients include carbohydrates, fats, proteins, minerals, vitamins and water (Martin, 2003).

Basavanthappa (2008) maintained that carbohydrates are the main sources of energy required by children to carry out daily activities and exercise. Any extra energy is stored in the body until it is needed. Fats are required in children's diet to help them attain normal growth and development. Proteins are essential for children's growth, repair and maintenance of body tissue. Minerals help the children to develop, grow and stay healthy. It is necessary to many mental and physical bodily functions, including emotional and cognitive functions. Vitamins are important in children's diet for making red blood cells, formation of strong bones and teeth, and contribute to maintenance of their eyes, skin, liver and lungs. Water is the most important nutrient required by children because the function of cells depends on a fluid environment. Tanko (2006) observed that good nutrition is reflected not only in the growth and functions of the cell but in body appearance. This implies that the eyes, skin, hair and teeth indicate whether body nourishment is good or poor. Poorly nourished children will fail to grow properly and deficiency diseases may occur.

Poor nutrition may result from excesses in the diet as well as deficiencies of certain vitamins or minerals which are capable of producing potentially lethal diseases. Excess of carbohydrates or fats can result in obesity among primary school children. A diet deficient in protein causes a disease called kwashiorkor in children; a diet deficient in both protein and calories results in marasmus with lethargy and abdominal enlargement. Generally, deficiency diseases can be treated successfully and cured by ensuring that the nutritional needs of the primary school children are met on a daily basis (Harvey, 2011). Poor growth and development will result, unless the whole childrenôs health is good as well as their status.

Status is the situation at a particular time (Hornby, 2006). Merrian (2007) defined status as a particular state or condition. Specifically, Bourdieu (2011) identified that status are internalized at an early age and school children eat food which indicates their status as it relates to nutrition. For instance, children from the lower end of the social hierarchy are predicted to eat ñheavy fatty foods which are cheapò than adequate diet and these bring about obesity, underweight, wasting and stunted growth among these children. In this study status was referred to as a particular state or condition. The ability of children to be productive and grow can be hampered as a result of their nutritional status.

Nutritional status is the conditions of health of a person that is influenced by the intake and utilization of nutrients (Typpo, 2011). Winstead (2009) defined nutritional status as the state of a personôs health in terms of the nutrients in his or her diet. He further added that how well the body functions is a direct reflection of what the body takes as food and the balance between the two. When one or several of the body systems are malfunctioning, it most likely relates in some degree to nutritional status. David (1999) defined nutritional status as a state of the body in relation to the consumption and utilization of nutrients. The present study referred to nutritional status as the state of a personôs health in terms of the nutrients in his or her diet. Odenigbo, Odenigbo and Oguejiofor (2010) affirmed that nutritional status can be determined using different methods such as Body Mass Index (BMI), clinical examination, biochemical examination, anthropometry, dietary assessment, questionnaires and checklist. The anthropometric method which involves the measurement of height and weight to determine the nutritional status of an individual is an easy-to-use method because it requires only tape and scale measure. Anthropometric method was used in this study to determine the nutritional status of primary school children because of changes in their body composition. Frisancho (2011) maintained that nutritional status of children are determined with reference to height and weight using the standard from the National Center for Health Statistics (NCHS) as a reference to determine the extent to which children are growing either normally, advanced, or delayed for their age.

Furthermore, the standard was also used to infer whether children are either obese, or undernourished for their height. Using height and weight standards, malnourished children can be classified as either stunted, if they have low height-for-age, or wasted, if they have low weight- for-height. Schlenker and Long (2007) asserted that the conditions of the body includes malnourished and well-nourished conditions, nutritional levels which are optimal nutrition and under nutrition which may affect childrenǿs ability to resist infectious diseases, ability to learn, become productive, grow and develop properly. It is vital to identify the proportion of primary school childrenǿs nutritional status.

Nutritional status ranges from nutrient levels in the body the products of their metabolism to the functional processes they regulate. Childrenǿs low height-for-age is considered stunting, while low weight-for-height indicates wasting. (Himes, 1991). In this study the proportion of stunted, wasted and underweight was determined among school children.

Skyes (2000) defined children as young males or females that have not reached the age of discretion. All over the world, children are seen as those who have to be provided for with such needs as food, shelter and protection until they are capable of looking after themselves. Children are young humans who are not yet an adult (Hornby, 2006).Whereas school children are children that attend school. Children are young humans between the ages of 0-13 years. Primary school children that were used in the present study are referred to as young human beings between the ages of 6-13 years. When a child reached primary school, he develops an eating style that becomes more and more independent of the influence and scrutiny of his parent (Suskind, 2009). Moreover, children are in the period of rapid growth and development, and therefore total health cannot be attained without good nutrition. Adequate supply of food and proper nutritional habits are helpful for healthy living, normal growth and development of children (Onuzulike, 2005). Some children eat a lot due to affluence while other eats less due to poverty and ignorance. This may result to over nutrition or under nutrition as the case may be and they can be exposed to nutritional problem like obesity, stunting and wasting (Akinsola, 2006).The nutritional status could be traced to some factors.

Some socio-demographic factors were capable of contributing to the nutritional status of primary school children. Such factors includes location, age, gender, level of education and income. Gender was identified as a factor that influences nutritional status. Usually prevalence of severe malnutrition is much more in young females as compared to young males of 5 years of age due to differential child rearing practices including feeding and health care seeking behaviour (Sunderlal, Adarsh & Penkay, 2010). Suskind (2009) observed that no gender distinction is made between the nutritional needs of male and female until the age of 11. He added that males between the ages of 11 and 14, however, have a greater need for calories, vitamin A, thiamin, riboflavin, niacin, iodine and magnesium than to female of the same age and these differences reflect the greater muscle development and physical activity of boys in contrast to the slightly greater fatty deposits and lesser physical activity of girls. The greater need for some of the B vitamins is related to the greater quantity of food that was ingested by boys than was ingested by girls of the same age. Hence, there were differences in nutritional status, that higher percentage of stunting are more in female than male children. Another variable that can affect nutritional status is location.

Location had influence on nutritional status. As opined by Florentino, Villavieja and Lana (2002) children from urban area tends to consume more total food, more animal foods, fats and more beverages. According to SunderLal et al (2010) higher proportions of rural children are suffering from Protein Energy Malnutrition (PEM) compared to urban areas. Urban slum areas have as much prevalence of PEM as in rural areas and more often the situation of PEM in urban slum areas may be worse than rural areas because of poor living conditions and presence of all the risk factors for malnutrition. Higher intake of calories, protein, iron, and vitamins A, with less physical activities results in higher proportion of over nutrition and a lower proportion of under nutrition.

Children from rural area are of low-socio economic group (Suskind, 2009). This has effect on their diet which may be deficient in all nutrients except carbohydrate, iron and thiamine. The effect is that they suffer from malnutrition, sign of protein-calorie deficiency, vitamin A, vitamin D and essential fatty acid deficiency. Malnutrition has a dampening effect on their growth potential particularly during the spurt period (Adesola, 2006).Hence; urban children may be over nourished more than their rural compatriots. Another variable that can affect nutritional status is age.

Age had influence on nutritional status. Evidence has shown that physical growth and cognitive development in children are faster during early years of life, and that by the age of five years, 50 per cent of adult intellectual capacity has been attained and before thirteen years 92 per cent of adult intellectual capacity is attained Sizer and Whitney (2000).

Christian and Greger (1998) reported that peer influence increases with age and extend to food attitude and choice, due to the sensory appeal of children. The children have strong influence in food choice and sensory characteristics that tastes sweet. Sizer and Whitney (2000) asserted that children of the same age group will prefer particular food choice despite the nutritional value. Another variable affecting nutritional status is level of education of the parents.

Level of education of parents had strong influence on nutritional status of primary school children. The information parents received about nutrition is capable of changing their childọs nutritional status. Additionally, the more knowledge about nutrition the parent, caregiver, and guardian have, the better the nutritional status of children (Mclaren, Burman, Belton &Williams, 1991). Akinsola (2006) stated that the major problem was the insufficient knowledge and understanding of how to plan and choose good food. When the diet is deficient in any food nutrient for a long period, illness such as kwashiorkor, marasmus can occur.

Income had influence on the nutritional status of primary school children.Lucas and Gill (2003) opined that household food shortages may be temporary, seasonal or persistent and have many causes including low income and low food production.Also middle income groups eat twice as much fat and have much more obesity, underlying causes are environmental and social factors such as sedentary lifestyles, availability of transport and fat-rich fast meals.

Number of children in the family (family size) was a contributing factor in the nutritional status of primary school children. It must be taken to mean that standard of living; naturally falls if the size of family increases and income remains constant. The ideal family size in Nigeria according to National population policy (1988) classification is six (parents and children). Any number less or equal to six is regarded as small family, while number greater than six constitutes larger family size in this study. This study was anchored on a theory.

The theory that applied to explain the primary school children nutritional status is the precede model. Precede model is a participatory model for creating successful community health promotion and other public health interventions. It is based on the premise that behavior change is by and large voluntary; improving nutritional status of school children are more likely to be effective if adequate diet are planned and eaten with the active participation of children who will have to implement them. The precede model is aimed at understanding the factors that influence the individualôs health and develop interventions to promote total wellbeing. This was useful because the nutritional status of primary school children was associated with some demographic factors such as gender, location, age and level of education. Proper understanding of the effect of these factors and how to overcome them, will harmonize the nutritional status of primary school children in Enugu South Local Government Area.

The study was carried out in Enugu South Local Government Area of Enugu state. The Local Government covers 67 square kilometers away from the state capital in the Eastern part of the state. It shares boundary with Enugu North LGA to the North, it also shares boundaries with Enugu East LGA to the East, Nkanu West Local Government Area to the West, and its headquarters is located at Uwani in Enugu south. Enugu South Local Government Area is essentially inhabited by the Igbo people and among them are farmers and traders.

WHO (2000) estimated that between 48 per cent and 53 per cent of school age children are stunted. In many cases, children do not know they have nutritional problem and fatigue, hence inability to concentrate is considered normal. Children who lack certain nutrients in their diet are more likely to be absent from school than healthy children, they also have a diminished capacity for learning, repeat grades and may drop out of school(WHO,2000).

The primary school children in Enugu South may need adequate nutrition for good health and well-being. But it is likely that preferences to a particular food nutrient among some school children or the proportions of adequate diet given to the children by their parents/caregivers/guardians may prevent them from eating the quality food they need for their well-being. The tendency is that they may be prone to malnutrition, weight loss, stunted growth, underweight, fatigue, and lack concentration in learning.

Such studies actually have been carried out on nutritional status of primary school children in different parts of the world, including Nigeria. But to the best knowledge of the researcher no study has been done in Enugu South L.G.A recently, hence the study was carried out to determine the nutritional status of primary school children in Enugu South LGA of Enugu State.

Statement of the Problem

The quality of food eaten on daily basis is very important particularly for primary school children. Children with adequate nutrition are expected to learn better, be more productive, grow rapidly, develop and reduce the susceptibility to infectious diseases. Diet that contains protein, carbohydrate, fats, vitamins, mineral, and water in the correct proportions is essential for healthy growth and development.

Unfortunately some children may come to school without eating, some with lunch pack of junk foods like candy, gum, mostly, sweets, desserts, fried fast foods and carbonated beverages. Nutrient deficiencies are linked to stunted growth, underweight, very low energy level, susceptibility to infectious diseases and retarded mental development which may hinder learning ability of school children.

In children, poor growth is the best indicator of under nutrition which may retard school achievement and physical growth, and may result in stunting and can be detected by monitoring weight gain, and comparing childrenȏs weight or height (Lucas & Gilles, 2009). These call for studies to confirm what really obtains in Enugu South L.G.A.

Such studies actually have been carried out on nutritional status of primary school children in different parts of the world, including Nigeria. But to the best knowledge of the researcher no study has been done in Enugu South L.G.A recently, hence the study was carried out to determine the nutritional status of primary school children in Enugu South LGA of Enugu State.

Purpose of the Study

The purpose of the study was to determine the nutritional status of primary school children in Enugu South Local Government Area. Specifically, the study determined the proportion of:

1 height-for age (stunted) primary school children;

2 weight-for height (wasted) primary school children;

3 weight for-age (underweight) primary school children;

4 normal primary school children;

5 Over-weight primary school children;

6 height-for-age of primary school children according to gender;

7 weight-for height of primary school children according to gender;

8 weight-for-age of primary school children according to gender;

9 height-for-age of primary school children according to location;

10 weight-for-height of primary school children according to location;

11 Weight-for-age of primary school children according to location.

12 Height-for-age of primary school children based on age group;

13 Weight-for-height of primary school children based on age group;

14 Weight-for-age of primary school children based on age group,and

15 What foods are given to the child?

Research Questions

The following research questions were posed to guide this study.

1 What was the proportion of height-for age (stunted) primary school children?

2 What was the proportion of weight-for height (wasted) primary school children?

3 What was the proportion of weight for- age (underweight) primary school children?

4 What was the proportion of normal primary school children?

5 What was the proportion of over-weight primary school children?

6 What was the proportion of height-for-age of primary school children according to gender?

7 What was the proportion of weight-for-height of primary school children according to gender?

8 What was the proportion of weight-for-age of primary school children according to gender?

9 What was the proportion of height-for-age of primary school children according to location?

10 What was the proportion of weight-for-height of primary school children according to location?

11 What was the proportion of weight-for-age of primary school children according to location?

12 What was the proportion of height-for-age of primary school children based on age group?

13 What was the proportion of weight-for-height of primary school children based on age group?

14 What was the proportion of weight-for-age of primary school children based on age group? and

15 What foods are given to primary school children?

Hypotheses

The following null hypotheses were postulated and tested at .05 level of significance.

1 There is no significant difference in proportion of height-for-age of male and female primary school children.

2 There is no significant difference in proportion of weight-for-height of male and female primary school children.

3 There is no significant difference in proportion of weight-for-age of male and female primary school children.

4 There is no significant difference in proportion of height-for-age of the urban and rural primary school children.

5 There is no significant difference in proportion of weight-for-height of the urban and rural primary school children.

6 There is no significant difference in proportion of weight-for-age of the urban and rural primary school children.

7 There is no significant difference in proportion of height-for-age primary school children on the basis of age.

8 There is no significant difference in proportion of weight-for-height primary school children on the basis of age.

9 There is no significant difference in proportion of weight-for-age primary school children on the basis of age.

10 There is no significant difference in food given to the child and level of education of parent/caregiver/guardian of primary school children.

11 There is no significant difference in food given to the child and income of parent/caregiver/guardian of primary school children.

12 There is no significant difference in food given to the child and number of children in the family of primary school children.

Significance of the Study

The results of this study will be useful to health` education, nutrition education teachers, dieticians, counselors, health administrators, health workers, non-governmental organizations (NGOs), children and parents in many ways. The result for proportion of height-for age (stunted) primary school children revealed that majority of PSC nutritional status which have been in existence over the years, and may have been preventing primary school children from school achievement and physical growth was normalwhile minority of them was stunted. The result will be useful to NGOs, health educators and nutrition education teachers in planning and implementing nutrition education lessons to school age children. It will also help them to organize community sensitization campaigns in the form of seminars to persuade the primary school children whom nutritional status were malnourished to be well-nourished, on the other hand the well-nourished children will be encouraged.

The result for proportion of weight-for- height (wasted) of primary school children revealed that majority of PSC nutritional status of which is present and may deteriorate primary school children from school performance was normal and few was wasted.The result will be useful to counselors, health educators and nutrition education teachers in planning and implementing nutrition education lessons to school age children. This will persuade the primary school children whom are malnourished to be well-nourished.

The result for proportion of weight-for- age (underweight) of primary school children showed that majority of PSC nutritional status which includes malnourished and well-nourished children which may have been the reason behind poor school activities achievement was normal but some were underweight. The result will be useful to parents, dieticians, health educators and nutrition education teachers in planning and implementing nutrition education lessons to school age children and generally help to improve the malnourished primary school children and those that were normal should maintain it.

The study gathered data on height-for-age (stunted) of male and female primary school children showed that majority of male PSC was normal compare to female. Counselors and parents will utilize the results to counsel the female children that are affected with long term under nutrition. Health educators will use the results to organize seminars and workshops for the parents/caregivers/guardians to give the correct information in order to encourage well-nourishment of male children and to improve health and well-being of female children that were affected by past under nutrition.

The result also revealed the weight-for-height (wasted) of primary school children according to gender and majority of female PSC was normal compared to male. The results will be useful to NGO, health educators, nutrition education teachers and school administrators. Health educators will be equipped to carry out group discussions with the parents/caregivers/guardians of male children that are presently and severely malnourished so as to enhance change. Nutrition teachers will use the results to teach and correct the recent and severe undernourished male children to improve their nutritional level and well-being.

The result that was gathered showed the weight-for-age (underweight) of primary school children according to gender and majority of female PSC was normal compared to male. The result will be useful to NGO, health educators and school administrators. The health educators will direct their teaching to the parents/caregivers/guardins of male children whose weight is low for their age. School administrators will organize the teaching of nutrition education to the male primary school children that are seriously underweight.

The result that was generated revealed the height-for-age (stunted) of primary school children according to location and majority of rural PSC was normal compared to urban. The result will be useful to parents, health educators and administrators. They will use it to set up nutrition education intervention programme in order to help the primary school children in urban area who are indicating long term under nutrition also children with improper understanding to accept and reach the adequate nutritional status and the primary school children that were normal would be encouraged to maintain their nutritional status.

The study generated information on weight-for-height (wasted) of primary school children according to location and majority of rural PSC was normal compared to urban. The data indicated school children of urban areas were recently and severely undernourished. This will provide basis for parents, teachers, administrators and health educators to sensitize them to embrace nutritional programme targeted to reduce malnutrition and those normal to maintain it.

The study generated data on weight-for-age (underweight) of primary school children according to location and majority of rural PSC was normal compared to urban. The study revealed among the primary school children of urban areas whose height is low to age of the same age group due to malnutrition. It will enable the parents, nutrition teachers, NGO and health educators to teach and encourage the children to eat adequate diet.

The result that was generated revealed the height-for-age (stunted) of primary school children based on age group and majority of age group 6-9years was normal compared to age group 10-13years. The result will be useful to parents, clinicians, health educators and administrators. They will use it to set up nutrition education intervention programme in order to help the primary school children between the ages of 10-13 years who are indicating long term under nutrition also encouraged the other to maintain their nutritional status.

The study generated information on weight-for-height (wasted) of primary school children based on age group and majority of age group 6-9years was normal. The data indicated school children of age 10.0-10.9 to13.0-13.9years who were recently and severely undernourished. This will provide basis for parents, teachers, administrators and health educators to sensitize them to embrace nutritional programme targeted to eradicate wasting.

The study generated data on weight-for-age (underweight) of primary school children based on age group and majority of both age groups was normal. The study revealed among the primary school children of ages 6.0-6.9 to 9.0-9.9years and 10.0-10.9 to13.0-13.9years whose height is low to age of the same age group due to malnutrition. It will enable the parents, nutrition teachers, NGOs and health educators to teach and encourage the affected children to eat adequate diet.

The study generated data on what food was given to these children. The study indicated there were influence of level of education of parents/caregivers/guardians, income and number of children in the family on the food given to primary school children that resulted in their normal nutritional status,stunting,wasting and underweight.It will enable the parents/caregivers/guardians, sociologists, food technologists, nutritionists, clinicians, nutrition teacher,ministry of education,ministry of health,NGO and health educators to teach and encourage the affected primary school children to eat adequate diet and those with normal nutritional status to maintain it to avoid revert.And to government and non government agency to intensify effort on importance of family planning and advocate small family size.

The study generated data on significance difference in proportion of height-for-age, weight-for-height and weight-for-age of male and female primary school children.The study revealed that their nutritional status were the same. Nutrition teachers will use the results to teach male and female children to improve and maintain their nutritional level and well-being.

The study generated data on significance difference in proportion of height-for-age, weight-for-height and weight-for-age of rural and urban primary school children.The study revealed that the nutritional status of PSC differed. Nutrition teachers and the administrators will use the results to teach rural and urban children to improve their nutritional status and well-being.

The study generated data on significance difference in proportion of height-for-age, weight-for-height and weight-for-age based on age group primary school children.The study revealed that the nutritional status of PSC differed and was the same respectively. Nutrition teachers and the administrators will use the results to teach children of age group 6 to 12 years to improve and maintain their nutritional status and well-being.

The study generated data on significance difference in food given to these children and level of education of parents/caregivers/guardians, income and number of children in the family. The study indicated that level of education of parents/caregivers/guardians, income and number of children in the family and the food given to primary school children differed while some were the same that resulted in their normal nutritional status,stunting,wasting and underweight.It will enable the parents/caregivers/guardians, sociologists, food technologists, nutritionists, clinicians, nutrition teacher,ministry of education,ministry of health,NGO and health educators to teach and encourage the affected primary school children to eat adequate diet and those with normal nutritional status to maintain it to avoid revert.And to government and non government agency to intensify effort on importance of family planning and advocate small family size.

Scope of the Study

The study was carried out in Enugu South L G A of Enugu State. The study was restricted to primary school children found within the urban and rural areas. The study was concerned with finding out the nutritional status of primary school children that was proportion of height-for age (stunting), weight-for height (wasting), weight for- age (underweight), and well nourished and over-weight primary school children. The demographic factors of gender, age, location, level of education of parent/caregiver/guardian, Income and number of children in the family as they relate to nutritional status and food given to the primary school children was explored.

CHAPTER TWO

Review of Related Literature

Literature is abundant in the area of nutritional status both in developed and developing countries, including Nigeria. The available literature was organized and presented under the following sub-headings.

1. Conceptual Framework

   Nutrition and nutrients

   Status and nutritional status

   Children

   Socio-demographic Factors Associated with Nutritional Status.

2. Theoretical Framework

   Precede Model.

3. Review of Empirical Studies on Nutritional Status
4. Summary of Literature Review

Conceptual Framework

This section examines the concepts of nutrition, nutrients, status, nutritional status, and primary school children, socio-demographic factors associated with nutritional status. These concepts have been defined by many and in different ways. A few of such definition relevant to this work was reviewed.

Nutrition and nutrients.

Nutrition has been defined by many scholars in different ways, although there is a common conceptual focus. Parks (2009) defined nutrition as the science of food and its relationship to health. It is concerned primarily with the part played by nutrients in body growth, development and maintenance. Alade (1990) defined nutrition as the branch of science which deals with food, the nutrients and other substances therein; their action, interaction and balance in relation to health and disease and the processes by which human beings ingest, absorbs, transports, utilizes and excretes food substances from the body. Nutrition as defined by Basevanthappa (2008) is a combination of dynamic process by which the consumed food is utilized for nourishment and structural and functional efficiency of every cell of the body**.** Nutrition can be defined as food or nourishment needed to keep children growing, healthy and viable. It also refers to the process of providing or receiving food or other life-supporting substances (Stevie, 2011). Nutrition can be termed as the procedure wherein one nourishes oneself with the intake of nutrients in the form of food. The principal motive for such a process is that it is essential for growth and development of the body. It is also crucial in the substitution of tissues (Robard, 1999).

Kings and Burgess (1992) defined nutrition as the study of food and how our bodies use them. They added that it is concerned with how food is produced, processed, handled, sold, prepared, shared, and eaten and with what happens to food in the body, how it is digested, absorbed and used. Nutrition is the science that studies the interactions between human being and food (Wardlaw & Kessel, 2002). Nutrition is the sum total of the processes involved in the taking in and the utilization of food substances by which growth, repair and maintenance of the body are accomplished. It involves ingestion, digestion, absorption and assimilation. Nutrients are stored by the body in various forms and drawn upon when the food intake is not sufficient. (Brookover, 2011). Holford (2004) defined nutrition as the science that deals with all the various factors of which food is composed and the way in which proper nourishment is brought about. The intake of food and supplements in the body is utilized for maintaining health, growth and energy. This is made possible with the basic nutrients available in the food. In this study, nutrition is a combination of dynamic process by which the consumed food is utilized for nourishment and structural and functional efficiency of every cell of the body.

Nutrition includes the study of nutrients and other substance found in foods; how the human body uses nutrients for growth and maintenance; and the relationship between foods, food components, dietary patterns, and health. The study of nutrition encompasses all aspects of the ingestion, digestion, absorption, transport, metabolism, interaction, storage, and excretion of nutrients by the body. In a broader sense, the study of nutrition also includes the various psychological, sociological, cultural, technological, and economic factors that affect the foods and dietary patterns chosen by an individual (Insel & Roth, 2002).

Furthermore Strum (1994) described nutrition as the food one eat and how the body uses it. Children eat food to live, to grow to keep healthy and well, and to get energy for work and play. Food is made up of different nutrients needed for growth and health. Many kinds and combinations of food can lead to well-balanced diet, no food, by itself, has all the nutrients needed for growth and health. Each nutrient has specific uses in the body and most nutrients do their best work in the body when teemed with other nutrient.

More so, all children, throughout life, have need for the same nutrients, but in varying amounts. The amount of nutrients needed is influenced by age sex, size, activity and the state of health. The way food is handled influences the amount of nutrients in food, its safety, appearance, and taste. Handling means everything that happens to food while it is being grown, processed, stored, and prepared for eating. Gershoff (1990) opined that children require food substances to supply the nutrients necessary to build tissues, to repair tissues as they wear out and die, to keep the body in good working condition, and to supply fuel for energy. The definition of nutrients is a substance that provides nourishment for growth or metabolism (Jodi, 2009). Donatella (2011) defined nutrient as any substance that is assimilated (taken in) by children that is needed for the children to live, grow, breathe, move, excrete waste, or reproduce. Examples: proteins, vitamins, and minerals.

Harper (1999) defined nutrients as a substance present in food and used by the body to promote normal growth, maintenance, and repair. The major nutrients needed to maintain health are carbohydrates, fats, proteins, minerals, vitamins, and water. For good nutrition children should eat a well-balanced diet, that is, one that provides an adequate amount of each of the classes of nutrients each day, furnishing at the same time adequately but not excessive number of calories for their bodyộs energy needs. Children require relatively larger amounts of nutrients and calories because of their rapid growth. Payne and Hahn (1995) opined that nutrients are elements in foods that are required for the growth, repair and regulation of body processes. Nutrients provide not only the energy necessary for certain vital processes but also the various materials from which all structural and functional components can be assembled (Encyclopedia Britannica, 2011).In this study nutrients was adapted as a substance present in food and used by the body to promote normal growth, maintenance, and repair. The food required for proper nutrition fall roughly into six major classes carbohydrates, proteins, fats, vitamins, minerals, and water.

Carbohydrates (starches and sugars) provide a readily available energy source. Panebianco (2009) posited that surplus carbohydrates are also converted by the body to glycogen and fat, the storage forms of calories for energy and to some of the amino acids used in protein synthesis. Basavanthappa (2008) emphasized that carbohydrates which are the main source of energy are required by school children to carry out daily activities and exercise. Examples of sources of carbohydrates are cereal, millet, white rice, maize, yam, cassava, potatoes.

Protein in the diet provides amino acids for forming body proteins. Insel and Roth (2002) posited that it includes the structural proteins for the building and repairing of tissues, and the enzymes for carrying out the metabolic processes. Payne and Hahn (1995) added that protein may be used as a source of energy when the preferred fat and carbohydrate supply runs low. A body that is in the process of building itself (such as that of growing primary school children) will need a greater proportion of proteins than the one that is fully grown and utilizes protein merely for repair of worn-out tissues. Children may require two to three times one gram of protein per kilogram of body weight per day (Halbert, 1997). Protein includes meat, eggs, cheese, milk, vegetables, beans, and grains. Protein deficiency retards growth in children, delays healing, and hampers the functioning of various body organs.

Fats (fats and oils) in the diet provide a concentrated source of energy. Insel and Roth (2002) emphasized that one gram of fat supplies about 9 calories as opposed to only 4 calories per gram of carbohydrates and protein. Fats in the body act as a source of stored energy, supply physical protection and insulation for tissues and form important portions of cell membrane structure. Fats also aid in the absorption of the fat-soluble vitamins (vitamins A, D, E and K) from the intestine and its excess can lead to overweight, heart disease. Milk, butter, meat, and oils are important sources of fat (Payne & Hahn, 1995)

Vitamins are classes of organic compounds categorized as essential nutrients. Parks (2009) opined that vitamins are required by the body in very small amounts for normal growth, maintenance of health, vision, resistance to infection. Deficiency of vitamins exposes school children to poor growth, scurvy, pellagra, and reduces resistance to infection. Sources of vitamins are carrot, green, spinach, liver, milk, apricots (Payne & Hahn, 1995).

Mineral are composed of inorganic materials necessary for formation of body structures, and for maintenance of health. The most important minerals are iron, calcium, phosphorus, potassium, sulphur, sodium, chlorine, and magnesium. Those required in less quantity are iodine copper, zinc, cobalt, fluorine, manganese. They are found in root crops, green vegetables, milk, broccoli and fruit. Deficiency of minerals in children leads to decrease sense of taste and appetite, hair loss, poor growth and development, (Parks, 2009).

Water is very essential to the body. It provides the medium for nutrient and waste transport; controls body temperature, and plays a key role in nearly all the body of childrenӧs biochemical reactions. Sources of water are fruits, vegetable, fruits and vegetable juice, milk and iron caffeinated soft drink. The deficiency leads to dehydration and death (Payne & Hahn, 1995). All these nutrients combined in a balanced proportion and used by body entails the term nutrition.

According to Kings and Burgess (1992) nutrition is the science that deals with all the various nutrients of which food is composed and the way in which proper nourishment is brought about. The average nutritional requirements of school children are fixed and depend on such measurable characteristics such as age, sex, height, weight, degree of activity and rate of growth.

Good nutrition requires a satisfactory diet, or which is capable of supporting the primary school children consuming it, in a state of good health by providing the desired nutrients in required amounts. It must provide the right amount of fuel to execute normal physical activity. If the total amount of nutrients provided in the diets is not sufficient, a state of under nutrition will develop. Westenhoefer (2001) ascertained that adequate nutrition of school aged children will also ensure they grow to their full potential, and provide the stepping stones to a healthy life. Adequate nutrition will help children develop maximal intelligence (IQ) and well being. Malnutrition and its consequences will be prevented by eating the right kinds and amounts of foods.(Benton,2001). Children need good nutrition because their bodies are growing and developing. (Heber, 2008).Harvey (2011) emphasized that poor growth and development will result if the whole childrenôs health are of poor status.

Status and nutritional status.

Status is the state or condition of a person or thing (Anderson, 2004). Hornby (2005) defined status as the situation at a particular time. Merriam (2007) referred to status as a particular state which when it is not normal can be adjusted as the case may be, and this definition was adopted in this present study.

Specifically, Bourdieu (2011) identified that status are internalized at an early age and guide the school children towards the choice of food they eat which indicates their status as it relates to nutrition. For instance children from the lower end of the social hierarchy are predicted to choose ñheavy fatty foods which are cheapò than adequate diet and these brings about obesity, underweight, wasting, and stunted growth among these children and as well affect their learning ability and productivity. Status has been determined by Rizkallah (1991) She explained how family income can be one of the most important determinants of nutritional status of children that deeply affect the food quality and preparation also that malnutrition is increased with the increasing poverty. This implies that what the school children eats matters because it constitute their nutritional status. David (1999) defined nutritional status as a state of the body in relation to the consumption and utilization of nutrients. Winstead (2009) defined nutritional status as the state of a personôs health in terms of the nutrients in his or her diet. Jeejeebhoy, Detsky and Baker (2000) defined nutritional status as intake of a diet sufficient to meet or exceed the needs of the individual that will keep the composition and function of the otherwise healthy individuals within the normal range. Nutritional status is the state of the bodyôs nutritional health (Whitney, Cataldo, Debmyne &

Rolfes, 2001). Rashed (2011) added that nutritional status is the current body status of a person or a population group, related to their state of nourishment (the consumption and utilization of nutrients). He further maintained that it is determined by a complex interaction between internal constitutional factors like age, sex, nutrition, behaviour, physical activity and disease and external environmental factors like food safety, cultural, social and economic circumstances. In this study nutritional status was referred to as the state of a personøs health in terms of the nutrients in his or her diet.

An ideal nutritional status occurs when the supply of nutrients conforms to the nutritional requirements or needs of primary school children. Kent (1997) explained that children need nutritious diet for their well-being and good health. When the body receives all the nutrients in appropriate amounts so as to meet the needs of the body, then they are in the state of good nutrition and have a normal nutritional status. However, when the nutrients provided in the diet are inadequate or not utilized properly, it results in a state of imbalance in the body, if this continues for sometime it may develop into a severe problem which may even prove fatal. Oldewage-Theron and Egal (2010) indicated that malnutrition has an effect on childrenøs wellbeing and their ability to learn and play normally. Therefore healthy food choices may improve a childøs wellbeing and ability to learn and play. Furthermore, dietary habits among school children impact directly on growth, development and the prevalence of disease throughout the life cycle. Healthy eating habits should be established during the growing period of school children because the quality of childrenøs diets usually declines as they move from childhood to adolescents and can add risk to their productivity and health.

The nutritional status of children is an important determinant of child health (Okolo, Adeleke, Chukwu, Egbuaba & Onwuanaku, 2003). Late effects of poor nutrition such as poor growth and small stature have been associated with impaired development and poor intellectual performance (Abidoye,George, & Akitoye, 1991; Pollitt, German, Engle, Martorell & Rivera, 1993). Nutritional status of these school children will help in detecting those with various forms of malnutrition or the late effects of malnutrition. (Akani & Nkanginieme, 1999). Sims, Paolucci, and Morris

(2011) believed that the syndrome of malnutrition among children is associated with nutrient intake and various environmental characteristics (family as the near environment). Nutrient intake is viewed as an output of family system resulting from the interaction of matter-energy and information flows within that system. Odenigbo, Odenigbo and Oguejiofor,(2010) affirmed that nutritional status can be determined using different methods such as Body Mass Index (BMI),Clinical examination, biochemical examination,anthropometry,questionnaires and checklist. The anthropometric method which involves the involved the measurement of weight and height to determine the nutritional status of an individual is an easy-to-use method because it requires weighing scale and a tape measure. The anticipated nutritional status of school children are as follows:<(-2)SD to<(-3)SD indicates weight-for-age(underweight) children, <(-2)SD to<(-3)SD indicates height-for-age (stunting) children,<(-2)SD to <(-3)SD indicates weight-for- height(wasting) and -1SD< X< +2SD of NCHS/CDC median indicates normal children while>+2SD indicates over-nourished children between the ages 6years to 12years. (Odenigbo, Odenigbo & Oguejiofor, 2010).

Inclusively, nutritional status is an indicator of the level of the quality of life of school children. Mandndhar, Krishna and Patowary (2008) asserted that nutritional status has several components such as stunting, wasting, underweight and overweight. Height and weight are the most commonly used indicators of the nutritional status of primary school children. WHO (2011) stressed that appropriate height-for-age of children reflect linear growth and can measure long-term growth or stunting (indicator of past or long term under nutrition) while appropriate weight-for-height reflects proper body proportion or the harmony of growth. Weight-for-height is particularly sensitive to acute growth disturbances and is useful in detecting the presence of wasting (indicator of present under nutrition). Weight-for-age represents a convenient synthesis of both linear growth and body proportion and thus can be used for the diagnosis of underweight (convenient synthesis of both present and past under nutrition) children.

The presence of under nutrition in children is indicated using these three anthropometric parameters (weight-for-age, height-for-age and weight for-height) and by comparing them with internationally accepted reference standards. Children that have a low height-for-age, a z-score below two standard deviations of the reference population mean (-Z2-score), such children are categorized as ñstuntedò. Similarly, WHO (1999) stated that a low weight-for-age is diagnostic of an ñunder- weightò children, while a low weight-for-height is indicative of ñwastingò children.

Frisancho (2011) emphasized that childrenôs nutritional status are usually done with reference to height and weight using the standard from the National Center for Health Statistics (NCHS) growth curve, as a reference to determine the extent to which children are growing either normally, advanced, or delayed for their age. Equally, the standard is used to infer whether children are either obese or undernourished for their height. Using height and weight standards, malnourished children can be classified as either stunted if they have low height-for-age, or wasted if they have low weight-for-height (Himes, 1991). Sunanda (2007) noted that the use of nutritional anthropometry indicator also permits stratification of survey results according to age, sex, rural/ urban characteristics of primary school children, thus providing more information for detecting vulnerable groups and for better understanding of the situation. In this study stunting, wasting and underweight of primary school children will be determined using three parameters of height-for-age, weight-for-height and weight-for-age indices. According to Cogill (2011) height-for-age is the index which indicates the past under nutrition or chronic malnutrition and deficits in height-for-age is a sign of stunting. Pullum (2008) refers to stunting as shortness that is a deficit of linear growth which has failed to reach genetic potentials as a result of poor diet and disease. Stunting is defined as less than two standard deviation (SD)(<-2SD) of the height-for-age median value of the National Centre for Health Statistics /World Health Organization (NCHS/WHO) international reference data.

Weight-for-height as stated by Cogill (2011) is the index that helps to identify children suffering from current or acute under nutrition or wasting and is useful when exact ages are difficult to determine. Wasting is the result of a weight falling significantly below the weight expected of a child of the same height. Causes include inadequate food intake, incorrect feeding practices, disease, and infection or, more frequently, a combination of these factors. Pullum (2008) added that wasting describes a recent and severe process that has produced a substantial weight loss, usually as a consequence of acute shortage of food and disease. Wasting is defined as < - 2 standard deviation of the weight-for-height median value of the NCHS/WHO international reference data. Cogill (2011) maintained that weight-for-age is the index which identifies the condition of being underweight, for a specific age. The advantage of this index is that it may reflect both past (chronic) and present (acute) under nutrition (although it is unable to distinguish between the two). Underweight, based on weight-for-age, is a composite measure of stunting and wasting and is recommended as the indicator to assess changes in the magnitude of malnutrition overtime. Pullum (2008) maintained that weight-for-age is the index used to compare a childӧs weight with the expected value of a child of the same age. It is a measure of underweight. Underweight refers to low weight-for-age and a composite of stunting and wasting. Underweight is defined as < - 2SD of the weight-for-age median value of the NCHS/WHO international reference data. In the present study height-for-age, weight-for-height and weight-for-age was determined among school children.

Children.

Children are human beings between the stages of birth and puberty (Schapiro, 2006). Hornby (2006) defined children as young human beings who are not yet adult whereas school children are children that attend school; children are young humans between the ages of 0-13 years. Skyes (2000) defined children as a young male or female that has not reached the age of discretion. All over the world, children are seen as those who have to be provided for such needs as food, shelter and protection until they are capable of looking after themselves. Primary school children in the present study were referred to young human beings between the ages of 6-13 years. Suskind (2009) posited that when a child reaches primary school, he develops an eating style that becomes more and more independent of the influence and scrutiny of his parents.

Schapiro (2006) explained that the nature of children seems obvious in terms of what they value when making choices and their philosophical importance seems negligible due to their childish thinking but parents should acknowledge that their children have wills though they are essentially the property of their parents by properly guiding and setting good eating examples for them to do likewise. Lefrancois (1992) asserted that the trend of physical growth that continues through childrenös growth is gradual decrease in the growth of fatty tissue, coupled with increased bone and muscle development and if children are well nourished, between the age of 6 to 12 year old, they grow (4.4 to 6.6 cm) and gain about 5 to 7 pounds (roughly between 2 and 2.75kg) each year. Mclaren, Burman, Belton and Williams (1991) opined that school age children are often blamed for their poor eating habits, which include eating junk foods and fast foods. These foods also tend to be low in nutrients such as calcium vitamin A and high in sodium. Although excessive intake of ófastô or ójunkô foods may jeopardize the nutritional status of school age children, their inclusion as part of a well-balanced diet is not of concern. However, there could be a ñjunkyò diet if a child ate one type of food in excess and did not follow the general principles of good nutrition, including a varied selection from all the basic food groups.

Kings and Burgess (1992) lamented that school age children need to eat good mixed meal so that they grow properly and have plenty of energy to work, play and learn. Whitney, Cataldo, Debnyne and Rolfes (2001) indicated that sound nutrition throughout childhood promotes normal growth and development, facilitates academia and physical performances; help prevent obesity, diabetes, heart disease, cancer and other degenerative diseases. They maintained that candy, cola and sweet must be limited in childrenös diets because children cannot be trusted to choose nutritious foods on the basis of taste alone, the preference for sweets is innate, and children naturally gravitate to them.

Furthermore, Whitney et al (2001) asserted that common sense dictates that it is unreasonable to expect anyone to learn and perform work when no fuel has been provided. By the late morning, discomfort from hunger may become distracting even if a child has eaten breakfast. Chronically, underfed children suffer more and the problem children face when attempting morning school work on an empty stomach appears to be at least partly due to low blood glucose. The average child up to the age of ten years or so need to eat every 4 to 5 hours to maintain a blood glucose concentration high enough to support the activity of the brain and nervous system because the brain is the bodyǿs chief glucose consumer, and a childǿs brain is as big as an adult. A childǿs liver is the organ responsible for storing glucose (as glycogen) and releasing it into the blood as needed. A childǿs liver cannot store more than about 4 hours worth of glycogen, hence, the need to eat fairly often. Teachers who are aware of the later-morning slump in their classrooms wisely request that a mid morning snack be provided, it improves classroom performance all the way to lunchtime.

Akinsola (2006) indicated that some children eat a lot due to affluence while others eat less due to poverty and ignorance which may result to over nutrition or under nutrition of nutrients and they can be exposed to nutritional problems such as obesity, stunting, wasting and underweight. The nutritional status could be traced to some factors.

Socio-demographic factors associated with nutritional status of primary school children.

Some socio-demographic factors capable of contributing to the nutritional status of primary school children abounds. The study presently was interested in the demographic factors of gender, age, location, level of education, income and number of children in the family.

Gender is meaning assigned to male and female (Hesse-Biber & Carger, 2000). Gender is defined by Food and Agricultural Organization (FAO) (1997) as őthe relations between male and female. Kabeer (2003) referred gender as the social construction of relationship between males and females. In the context of nutrition, female are more likely to reduce their food intake as a coping strategy in favour of other household members in situation where food is in short supply. Lefrancois (1992) emphasized that the growth spurt in height and weight during the period of childrenǿs growth are generally more rapid in males where as females tend to retain a higher percentages of body fat.

Moreover, Smoll and Schutz (1990) added that the growth spurt occurs approximately 2 years earlier for females than for males; later males will outgrow females of the same age group. Scher and Good (1990) posited that male between the ages of 11 and 14, however, have a greater need for calories, vitamin A, thiamin, riboflavin, niacin, iodine and magnesium than to female of the same age. These differences reflect that male children may be favoured and fed better than female children because of greater muscle development and physical activity of males in contrast to the lesser physical activity of female of the same age. Hence, the differences in nutritional status will emerge, that higher percentage of under nutrition are more in female than male children. Anwer and Awan (2003) maintained that female children are subject to neglect by some families of theirs. Studies showed that male children are fed quality food than female children. Even in families where there is adequate food, females are served smaller amount. So, when inadequate amount of food is available, the femaleӳ family members may not eat at all. Besides females having a lower allocation of food than males, families spend less on femaleӳ healthcare. Parents see male children as their old-age insurance and thus feed them well.

Age has influence on nutritional status of school children. Caliendo (1995) emphasized that few primary school children are capable of planning a well-balanced diet each day without some adult assistance, nor are they usually able to prepare complete meals that will meet their needs because it is not enough simply to feed a child with sufficient calories to prevent hunger; it is also necessary to be sure that the diet includes adequate amounts of milk, breads and cereals, meat, fruits, and vegetables to provide necessary protein, vitamins, and mineral. Unfortunately, the staggered scheduling in some families may make this arrangement impractical

Bender and Bender (2011) pointed out that age of school children contributes to the choice of food they consume. During the primary school period there is an increasing tendency to consume more foods that are low in nutritive value and high in calories. Children of this age begin to be increasingly independent, particularly with regard to snacks. The small amount of financial independence resulting from allowances, odd jobs, and paper routes enables males and females to buy candy or pop, both of which fill little nutritional need and are superfluous in the primary school childrenös diet. Similar to these, Guthrie (1996) explained that the recommended energy allowance for children declines gradually between the ages of one and ten years old. So, meeting the energy needs of school children can be especially challenging because of their small gastro intestine. The ages from 6 to 12 years are important because nutrient stores are built in preparation for the physiological changes that occur during adolescence. Inclusively, Christian and Greger (1998) reported that peer influence increases with age and extend to food attitude and choice, due to sensory appeal of children that is characterized with foods that tastes sweet.

Level of education of parents has strong influence on nutritional status of primary school children. This means that children with good access to diet and health are due to information received about nutrition which is capable of changing their nutritional status. Also, the more knowledge about the nutrition the parent, caregiver and guardian have the better the nutritional status of children (Mclaren, Burman, Belton & William, 1991). Gill, Prasada and Shrivastava (2011) opined that school children have little or no knowledge of what constitute adequate diet so they go for candy, cola and other concentrated sweets which are nutrient deficient. Some of them skip meals for fear of not liking a particular food without considering the implication which could be poor performance in school, illness, wasting, stunting and underweight. Akinsola (2006) posited that the major problem was the insufficient knowledge and understanding of how to plan and choose good food and when the diet is deficient in any diet for a long period disease can occur.

Reports from researchers indicate that location has influence on nutritional status. According to Sunder Lal et al (2010) higher proportions of rural children are suffering from protein energy malnutrition (PEM) compared to urban areas. Urban slum areas have as much prevalence of PEM as in rural areas and more often the situation of PEM in urban slum areas may be worse than rural areas because of poor living conditions and presence of all the risk factors for malnutrition. As opined by Florentino, Villavieja and Lana (2002) that children from urban area tends to consume more total food, more animal foods, fats and more beverages. Higher intake of calories, protein, iron, and vitamins A, with less physical activities results in higher proportion of over nutrition and a lower proportion of under nutrition. Anwer and Awan (2003) emphasized that the difference between rural and urban children was significant. Urban children now spend time at sedentary in-door activities such as watching television or playing computer games. However, rural children perform more physical activities with less food available and, as a consequence, tend to be underweight.

Children from rural area are of large low-socio economic group. This has effect on their diet which is deficient in all nutrients except carbohydrate, iron and thiamine. The effect is that they suffer from malnutrition, sign of protein-calorie deficiency, vitamin A, vitamin D and essential fatty acid deficiency, and malnutrition has a dampening effect on their growth potential particularly during the spurt period.(Adesola,2006).Hence urban children were over nourished more than their rural compatriots.

Income had influence on the nutritional status of primary school children.Lucas and Gill (2003) opined that household food shortages may be temporary, seasonal or persistent and have many causes including low income and low food production.Also middle income groups eat twice as much fat and have much more obesity, underlying causes are environmental and social factors such as sedentary lifestyles, availability of transport and fat-rich fast meals. This is in line with FAO (2001) report that household must have sufficient income to purchase the food they are unable to grow.

Qureshi (2010) opined that cash income per capita is often substantially higher in urban communities than in rural population but nutritional standards are often lower .In some families money is used for the necessities of life other than food.for these reasons the cash available for food may be reduced while in the urban perishable,protective foods are usually less readily available and there is practically no opportunity for the urban as opposed to the rural dwellers to produce his own food.The commonly employed monthly system of wage payment also leads to difficulties in that there is considerable variation from week to week in the food consumption of monthly paid workers.Perhaps it is not suprising to find that pay day is often the family feast day,and expensive food stuffs,meat,eggs and milk are eaten at the beginning of the month,ewhile towards its end the staple food predominates and the number of meals may be reduced,families tend to economize on food and to be extravagant in other things

Number of children in the family (family size) was a contributing factor in the nutritional status of primary school children. It must be taken to mean that standard of living; naturally falls if the size of family increases and income remains constant. The ideal family size in Nigeria according to National population policy (1988) classification is six (parents and children). Any number less or equal to six is regarded as small family, while number greater than six constitutes larger family size in this study. Typically large family size has significant relationship with much greater risk of poverty (Maxwell 1996). Obamiro et al (2003) reported that an increase in household size would likely being the household membership to food insecure group. In Nigeria, the production of food has not increased at the rate that can match the food demand of the increasing population. While food demand increases annually at the rate of 2.5 percent, food demand increases annually at a rate of more than 3.5 percent due to the high rate of annual population growth of 2.83 percent (Oluyole and Lawal 2008). However household food security depends not only on the available of an adequate and sustainable supply of food but also on the coping strategies employed by households for its acquisition. The larger the family size the lesser food availability to each person within the household and also nutritional status is affected. (Adebayo, 2012)

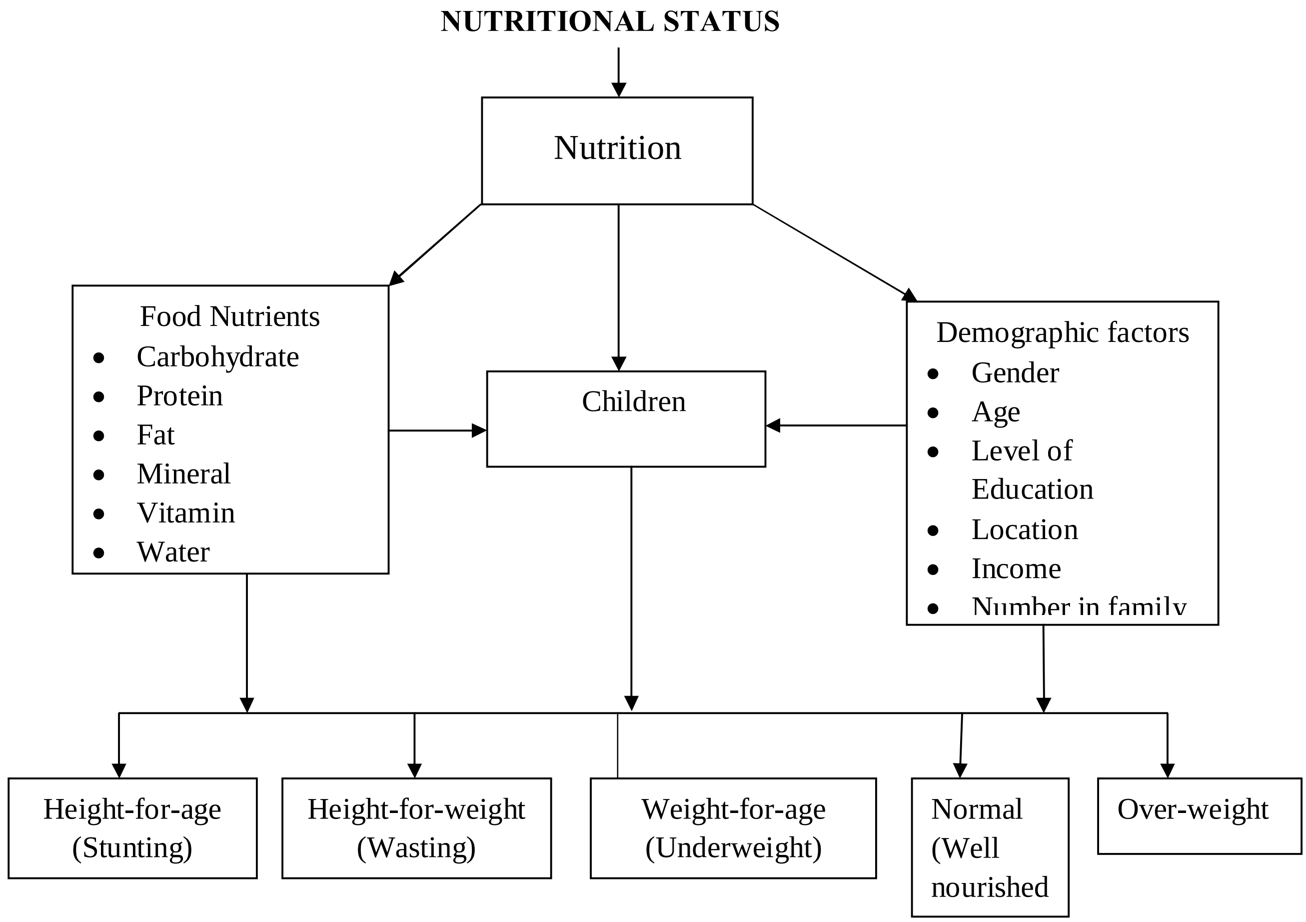


Figure I: Diagrammatic representation of conceptual framework of Nutritional status of primary school children

Theoretical Framework

Theories and models of human behaviour attempt to explain the reasons behind alterations in individualӧs health behaviour patterns, (National Institutes of Health-NIH (2003). These theories cite environmental, personal and behaviour characteristics as the major factors in health behavioral determination. The theoretical framework relevant for the study was the precede model.

The Precede model

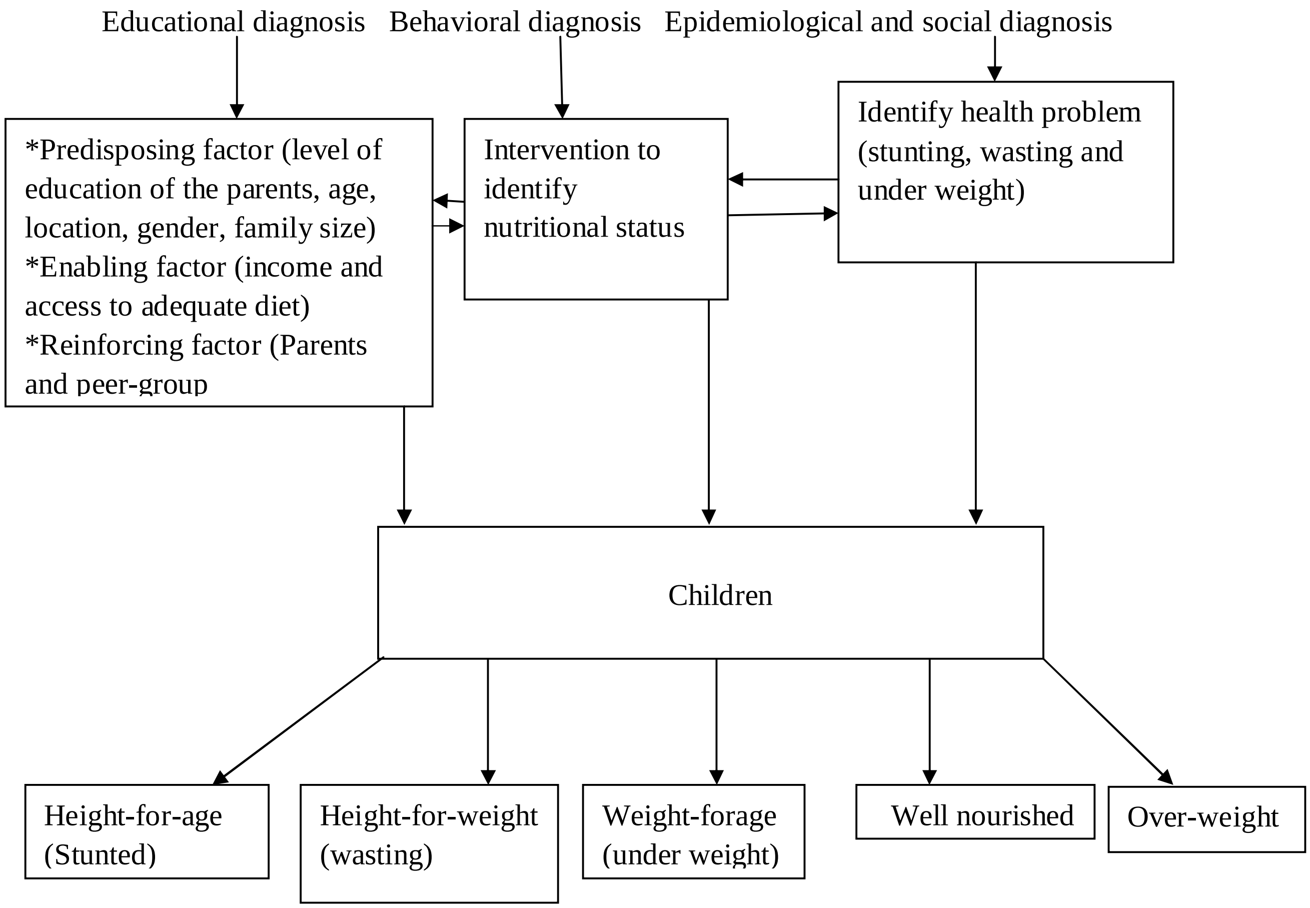
The precede model developed by Green, Kreter, Deed, and Patridge (1990) has served as a conceptual framework in health plans aimed at diagnosing the health problems of a community, understanding the factors that influence the peopleӧs behaviour and developing interventions to promote healthy behavior. Ottoson and Green (2001) maintained that the model are six phases grouped into four thus; epidemiological and social diagnosis, behavioral diagnosis, educational diagnosis (predisposing, enabling and reinforcing factors) and administrative diagnosis.The present study anchored on the phases that related to the study thus the first phase is epidemiological and social diagnosis is based on identification of health problem like nutritional status of primary school children whether some of them are underweight, wasted and stunted. The second phase (behavioural diagnosis) involves intervention that should be focused to the identified nutritional status.

The third phase(educational diagnosis) is to identify the factor that nurture the existence of the nutritional status, whether predisposing factor like level of education of some parents as it concerns adequate diet, the age of the children which detects their perception, attitude and value to a particular food nutrient because it tastes sweet, enabling factors such as income and access to all the food nutrients and when not available the school children are prone to the consequences of poor nutrition and reinforcing factors like family size and members, classmates and peer-group whether the food eaten among these children are influenced as a result of what their family members give to them and what they see them eat or the peer- group eats junk food and skip morning food, with these their nutritional status may be hampered. The other phase geared toward intervention that will empower the children to eat adequate diet such as nutrition education program, parents eating with their children for them to learn how to eat good food.

Precede model is a participatory model for creating successful community health promotion and other public health interventions. It is based on the premise that behavior change is by and large voluntary; improving nutritional status of school children are more likely to be effective if adequate diet are planned and eaten with the active participation of children who would have to implement them(Ransdell,2001). Akinsola (2006) asserted that there are factors that can predispose an individual to adopt or not adopt a behavior or practice. These include level of knowledge, attitudes, perception, beliefs and values-for example, some people in believe that pot belly and hair loss, which often results from kwashiorkor in children, is not a sign of disease but part of growth and development process among children. Therefore, they believe that kwashiorkor cannot be prevented or cured; the factor responsible for this is the level of knowledge about the cause of the disease.

Malnutrition of primary school children may be attributed to some socio-demographic variables of gender, age, location, income, family size and level of education indicated in this study which may predispose school children to stunting, wasting and underweight and some may be normal.

Precede model of nutritional status



Adapted from (Green et al.1980) because the theory has the phases that related to the present study.

Figure II Theoretical Framework

Review of Empirical Studies on Nutritional Status of primary School children

A good number of researches have been conducted on nutritional status. Those related to this study was reviewed and presented.

A study carried out by Shariff, Bond and Johnson (2000) on nutritional status of primary school children from low income households in Kuala Lumpur. Growth status in relation to gender and age factors in urban primary school children (6-10 years old) was examined. The cross-sectional design was employed and the sample consisted of 4212 boys (53%) and 3793 as girls (47%) through a random selection. Questionnaire and anthropometric measurement were used for data collection. Analysis was done using mean, percentages and chi-square.

The results indicated that approximately 52 per cent (n = 4149), 50 per cent (n=3893) and 30 per cent (n = 2568) of the school children were underweight, stunted and wasted respectively among these low incomes school children. However, the majority of these undernourished children were in the mild category. Prevalence of overweight (> 2SD of NCHS/WHO reference media) was found in 5.8 per cent of the sample. For both, prevalence of under-nutrition and over-nutrition, more boys than girls were found to be under weight, stunted, wasted and overweight. Height for-age (P < 0.05) and weight for-height (P < 0.001) showing that childrenôs weight has been adapted to their short statures. Efforts recommended addressing health and nutrition problems among school children included health and nutrition monitoring using existing growth data collected by schools and interventions.

Anuarzain, Lim, low and Harun (2005) conducted a research on nutritional status of school children and factors affecting nutritional status, in Selangor, Malaysia using cross- sectional design and a population of 1,405 primary school children (aged 9-10years from 54 national primary schools). Data collection was by questionnaire and physical examination of blood sample with finger pricking technique and analysis used were percentages and mean. The finding of the study indicated that the mean weight and height were 32.30kg and 135.18cm respectively. The mean BMI was 17.42kg/m^2, with 1.2 per cent of the school children underweight, 76.3 per cent normal, 16.3 per cent overweight and 6.3 per cent were obese. Nutritional status was significantly related to blood pressure, history of breastfeeding, eating fast food, taking canned/bottled drink, income and educational level of parents.

Also the nutritional status between sexes and locations (rural and urban) were also found. The prevalence of overweight and obese children was of concern. There was thus an urgent need for the school Health program to periodically monitor the school childrenớs eating habits and physical growth. Appropriate counseling on nutritional intake and physical activities should be given not only to school children but also to their teachers and parents or caregivers.

A study was carried out by Oninla, Owa, Onevade and Taiwo (2006) to determine and compare the nutritional status of children attending urban and rural public primary schools in Ife Central Local Government Area of Nigeria. The cross-sectional survey design was used and the schools were stratified into urban and rural and studied schools were selected by balloting. A total of 749 pupils (366 and 383 children from the rural and urban communities respectively) were studied. Questionnaire and anthropometric measurement was used for data collection. Mean, percentages and chi square were used for data analysis.

The finding indicated that underweight, wasting and stunting were 6 1.2 per cent, 16.8 per cent and 27.6 per cent respectively. In the rural area there were 70.5 per cent, 17.8 per cent and 35.8 per cent, while in the urban they were 52.2per cent, 15.9 per cent and 19.8 per cent, respectively. The mean nutritional indices (weight for age, weight for Height and Height-for- Age) were found to be significantly lower among the rural pupils than urban pupils ($P<0.001$ in each case), showing that malnutrition (underweight, wasting and stunting) constituted major health problems among school children in Nigeria, particularly in the rural areas. Therefore, prevention of malnutrition was recommended to be given a high priority in the implementation of the ongoing primary health care programmes with particular attention paid to the rural population.

Medhi, Barua and Mahanta (2006) conducted a study to assess the growth and nutritional status of school age children (6-14 years) of the garden workers of Assam. The cross- sectional survey design was used. A total number of 606 (male 351 and female 255) was randomly selected; data was collected using SECA balanced and anthropometric rod, method of data analysis was with percentages. Result revealed a high prevalence of malnutrition among tea garden school age children and malnutrition was both chronic and recent in nature. Prevalence of wasting, stunting and underweight was 21.2 per cent, 47.4 per cent and 51.7 per cent respectively among the children in the age group of 6-8 years; prevalence of stunting and thinness was 53.6 per cent and 53.9 per cent respectively among the children in the age group of 9-14 years. Hence there was need for nutrition education intervention and promotion.

Cur, Cen, Akkus, Ercan, Arvas, Guzeloz and Cifcili (2006) carried out a study on, Is under nutrition a problem among Turkish school children? Which factors have an influence on their under nutrition? The cross-sectional survey design was used. One thousand five hundred and seventy six (1576) students of age 6 to 16 years through random sampling was used, Questionnaire and anthropometric measurement were used for data collection. Method of data analysis was chi-square tests, logistic regression analysis to investigate the relationship between the prevalence of under nutrition and the socio demographic factors.

The findings were that stunting, underweight and wasting were found as 5.7, 4.6 and 1.0 per cent respectively. There were significant relationships between underweight and age, sex, number of family members, monthly family income, but a significant correlation was found only between stunting and age. No correlation was found between wasting and socio demographic factors. Under nutrition was still a common problem among primary school children. Identification of risk factors is essential for prevention of under nutrition.

Ijarotimi and Ijadunola (2007) conducted a study on nutritional status and intelligence quotient of primary school children in Akure community of Ondo State, Nigeria.The Cross-sectional survey design was used. Four hundred and two (402) children (10-15 years) randomly selected from twelve public and private primary schools were used. Self administered questionnaire was used to collect information on childrenô demographic features and parentô socio-economic characteristics. The subject weight, height, height for age and weight- for- height Z-score were measured and determined respectively. Raven standard progressive metrics consisted of 60 questions was administered in a quiet classroom within 60 minutes to assess intelligence quotient (1Q) of the children. Mean and percentages was used for data analysis.

The result indicated weight for-height Z-sore of the children 49.8 per cent were normal, 40 per cent mildly wasted, 9.7per cent moderately wasted and 0.5per cent severely wasted. Height-for-age Z-score were 50 per cent normal, 35.1 per cent mildly stunted, 13.4 per cent moderately stunted and 1.5 per cent severely stunted. 1Q scores were 5 per cent superior. 11.2 per cent above average, 11.4 per cent average, 8.2 per cent below average and 64.2 per cent below average and 64.2 per cent intellectual deficit. The interrelationship between height-for-age, 1Q and socio-demographic characteristics showed that there were insignificant difference between the age groups, gender and socio-economic status of the pupils. Conclusively, this study showed that proportion of malnourished intellectual deficit among the studied population was high. Further studies are therefore needed to confirm these findings in other parts of Nigeria.

Sunanda (2007) conducted a study on nutritional status, level of intelligence and participation in extra curricula activities of school children of Dharwad taluk using experimental design and 260 students that was randomly selected. An anthropometric measurement, questionnaire and personal interview was used for data collection, and method of data analysis was mean, standard deviation and percentages.

The result revealed stunted, wasted and normal indices and that undernourished children scored significantly lower in psychological test in comparison with their well nourished peers and higher in extra-curricular activity and intelligent quotients.

Groeneveld, Solomon and Doak (2007) conducted a survey on nutritional status of urban school children of high and low socio-economic status in Quetzaltenango to assess the prevalence of stunting, underweight, overweight, and obesity among school children 8 to 10 years old. The cross-sectional survey design was employed and five hundred and eighty three (583) children in private and public elementary schools were randomly selected. Questionnaire and anthropometric measurement of their height and weight with (CDC) 2000 height-for-age Z-score, weight-for-age Z-score and body mass index-for-age were use for data collection. Method of data analysis was percentages and chi-square.

The result indicated that height, weight and body mass index were significantly higher in the 327 children of high SES than in the 256 children of low SES, across sexes and age groups. The prevalence of stunting was significantly higher in Low-SES children than in high-SES ones (27.0% VS 7.3%, $P<0.01$), and this was also true for underweight (14.1% versus 4.6%, $P<0.01$). In contrast, the prevalence of overweight (17.7% versus 10.5%, $P<0.01$) was higher in high SES children than in Low-SES ones, the same was true for obesity (14.4% versus 2.3%, $P<0.01$). The prevalence of stunting among children of low SES, and the prevalence of overweight and obesity among children of high SES far exceeded the CDC 2000 reference ranges. Nutrition and health interventions are needed to reduce these risks.

Samuel, Cole and Oldewage-Theron (2008) carried out a study on association between children under nutrition and household environmental quality in urban and rural household in Oyo State, Nigeria. The Cross-sectional survey design was used. A structured questionnaire and anthropometric measurement was the instrument for data collection. Mean, percentages and chi-square were used for data analysis. The findings showed that 16.8 per cent of the children were wasting, 29.7 per cent for stunting and 28.4 per cent for underweight. There was a significant association between the environmental quality index (EQI) and stunting (r - -0.437, $P = 0.000$) and underweight ($r = -0.491$, $P = 0.000$) but not with wasting ($r = -0.152$, $P = 0.201$), significant associations disappeared in the rural but persisted among the urban children. Environmental quality appeared to be a more important determinant of under nutrition among urban than rural children. So, there was need for more attention to be paid on interventions involving environmental improvements at household and community levels, particularly in high density urban area.

Mukherjee, Chaturvedi and Bhalwar (2008) carried out a study on determinants of nutritional status of school children in Army School Pune.The cross-sectional survey design was used for the study, seven hundred and sixty (760) school children was selected at random. Questionnaire and anthropometric measurement compared against NCHS/WHO reference standard was used for data collection. The mean, percentages Pearson moment correlation coefficient were used for data analysis.

The results showed that prevalence of stunting was 13.8 per cent, wasting 6.79 per cent and under nutrition 9.87 per cent. Motherøs educational level, socio-economic status and family size were significantly associated with the nutritional status of the school children. Efforts directed towards the improvement of female literacy, socio-economic status and restricting family size was recommended since it was hoped it will have a positive impact of the nutritional status of school children.

Amuta and Houmsou (2009) carried out a study to assess the nutritional status of school age children (6-17 years) in Markurdi, capital of Benue state-Nigeria. The cross-sectional survey design was used. Random selection of 304 populations of school children was employed. Questionnaire and anthropometric measurement was used for data collection comparing it to National Centre for Health Statistics (NCHS)/ World Health Organization (WHO) standard, mean and percentages were used for data analysis.

The findings revealed that the prevalence rate of under nutrition was (50.66%) and schools located in the slum parts of Markurdi recorded the highest rate of under nutrition with (78.33%) stunting and (73.33%) wasting respectively. Males recorded a relatively higher rate of under nutrition 162 (57.44%) than females 142 (44.65%). This revealed that the average of school child in Markurdi is undernourished. Poor nutrition of children did not only affect the cognitive development of children but also likely to reduce the work capacity in future.

Hasan (2010) conducted a study on identifying the prevalence of malnutrition among 500 children of Government schools of Azad Nager, Bangalor South Asia among children aged 8 to 14 years. The cross-sectional survey design was used. Questionnaire and food intake diary were used, (B.M.I) for age was calculated and compared with WHO (2007) reference standards. The cross-sectional survey design was used and the subjects were selected through random sampling procedures of pupils (382 boys and 118 girls).Percentages and chi-square was the method of data analysis.

The result shows that 68 per cent of pupils were malnourished and prevalence of malnutrition in male and female was 57.94 per cent and 42.0 6 per cent respectively. The malnutrition may be due to inadequate dietary intake of food and most children are from low socio-economic background, the need for more calories, protein and micronutrients for the children of government schools cannot be over emphasized.

Oldewage and Egal (2010) carried out a cross-sectional research on nutritional knowledge and nutritional status of primary school children in Qwa Qwa, with a purposively selected Public school of 540 numbers using a sample of all 142 school pupils aged 9 to 13 years with the measuring instrument including a nutrition knowledge questionnaire for data collection. Method of data analysis was with SPSS to determine percentages of respondents.

The result revealed that the mean age of the respondents was 11.2 years and they had deficient intakes of all the nutrients, except for protein, carbohydrates and thiamine. About 53.1 per cent, 17.1per cent and 14.3 per cent of the respondent did not meet 100 per cent of estimated average requirement (EAR) for protein, carbohydrates and thiamine respectively. Only 2.8 per cent was severely stunted and 11.3 per cent stunted. About 12.0 per cent were overweight and more among the girls (15.7%) than boys (8.3%). The respondents showed average nutrition knowledge in the majority of the questions. It was recommended that a nutrition education programme be developed and implemented for this group of children for improving food choices.

Neelu, Bhatmgar, Gang, Chopra and Bajpai (2010) conducted a study on nutritional status of primary school children (5-11 years) in urban Meerut. Using cross-sectional survey design eight hundred (800) school children were used and out of the list of all Government primary schools, 5 were randomly chosen. Questionnaire and measurement of weight and height of the children were recorded on a pretested Performa. Data analysis was with parentages and chi-square test.

Result showed that out of eight hundred (800) children, 396 children (49.5%) were found to be malnourished. Grade I malnutrition was most common (35.5%), followed by grade II (11.4%) and grade III (2. 6%) malnutrition. Wasting was found in 44.6% of the children (46.3% girls and 43.2% boys) out of which 1.2per cent children showed severe degree of wasting. Stunting was found in 43.8 per cent of the children (46.0% girls and 41.8% boys). Malnutrition can make learning difficult and can seriously hamper the educational process and the childôs intellectual growth. Promoting appropriate dietary habits through effective nutrition education is an effective preventive method. Main focus should be on qualitative and quantitative improvements on the diets (increase intake of energy protein, micronutrients) with increased awareness on importance of preventing under nutrition.

Meme, Makau, Muroki and Mwadiwe (2010) conducted a study on dietary intake and nutritional status of primary school children 5 to 10 years of age in school with and without feeding programmes in Nyambene district, Kenya. The cross-sectional survey design was used and 162 children with lunch programme and 163 children without lunch were randomly selected. A structured questionnaire was developed to elicit information on demographic and socio-economic characteristics of the household. Social packages for social science (SPSS) batch system were used for data analysis of mean and percentages.

The result revealed that caloric consumption was significantly higher in the group with feeding programme than the group without feeding programme (62g, 238% of RDA) and (9%) respectively. The level of stunting was about the same in both groups 24% in group with feeding programme and 25 per cent in the group without feeding programme. Nutritional status of girls was better than that of boys, although the difference was not statistically significant. Thus, there was need to evaluate school feeding programmes in Kenya to identify and address the weakness that curtail their impact and determine how the supplementary feeding programmes can be improved.

Akor, Okolo and Okolo (2010) carried out a study on nutritional status of newly enrolled primary school children in Jos, Plateau Nigeria. The cross-sectional survey design was used. Seven hundred and sixty four (764) apparently healthy newly enrolled pupils were randomly selected using a multi-stage proportionate sampling from both public and private schools. Anthropometric measurement was used for data collection and mean, percentages and rank order correlation coefficient were used for data analysis.

The result indicated that pupils from private schools were significantly taller (118.2 ± 6.52) than their public school counterparts (115.7±8.44), P = 001. The prevalence of underweight, stunting and wasting was 10.3, 11.1 and 2.4 per cent respectively. Stunting occurred in a higher proportion of boys than girls. Poor nutritional status was significantly commoner in public school pupils than private school pupils. These findings suggested that malnutrition (underweight wasting and stunting) was not uncommon among newly enrolled school children and it underscored the need for institution and sustenance of a food programme among school children.

Joshi, Gupta, Joshi and Mahajan (2011) conducted a cross-sectional study to find out the determinants of nutritional status of school children (6-14 years age group) in Kaski district of Western Nepal and the role of socio-demographic characteristics of mother on child nutrition. Random sampling was used to select a total of 786 students from January 2007 to June 2007, from 6 schools in the study area. Questionnaire and anthropometric measurements was used for data collection while percentages are used for data analysis.

The results show that among 786 students 26 per cent of the students were found to be undernourished and 13 per cent stunted, 12 per cent wasted and only 1 per cent both stunted and wasted. The study showed highly significant association ($P<0.05$) of maternal factor like literacy, occupation, diet and knowledge and monthly per-capita income respectively with child nutrition and they are the important determinants of nutritional status of school children. Hence the need to educate the mothers in all ramifications that will improve the nutritional status of school children.

Summary of Literature Review

In the review of related literature, concepts of nutrition and nutrients, status and nutritional status, and children were clarified. Nutrition was conceptualized as the branch of science which deals with food, the nutrient and other substances therein, their action, interaction and balance in relation to health and disease and the processes by which human beings ingest, absorbs, transports, utilizes and excretes food substances from the body. Nutrition as adopted in this study is a combination of dynamic process by which the consumed food is utilized for nourishment and structural and functional efficiency of every cell of the body. The review also presented information about nutrients found in food thus carbohydrates, fats, proteins, minerals, vitamins and water, which are elements in food that are required for the growth, repair and regulation of body processes. Moreover good nutrition required satisfactory diet, which is capable of supporting primary school children consuming it, in a state of good health by providing desired nutrients in required amounts.

The study also highlighted that status is the state or condition of a person. The study emphasized on nutritional status as the state of the bodyô nutritional health. It is the current body status of children related to their state of nourishment(the consumption and utilization of nutrients). Inclusively nutritional status is an indicator of the level of the quality of life of school children which comprises of height for-age. (Stunted), weight-for-height (wasting) and weight for age (underweight).

Children were reviewed as young human between the ages of 6 to 13 years old who are not yet an adult where as school children are children that attend school. Children are in the period of rapid growth and development and therefore total health cannot be attained without good nutrition. Socio-demographic variables that predispose nutritional status were identified as gender, age, location, income, number of children in the family and Level of education.For instance it was found that effect on nutrional status of PSC with regards to large family size,also female nutritional status are normal compare to male and children in the rural area had normal status compared to the children in the urban area.

A theory was reviewed, the precede model is the understanding of the factors that influences the childrenô health and develop interventions to promote well-being of children. The review also presented empirical studies conducted on nutritional status including studies conducted by Oldewage and Egal (2010) to determine the nutritional knowledge and nutritional status of primary school children in Qwa Qwa. Akor, Okolo and Okolo (2010) surveyed nutritional status of newly enrolled primary school children in Jos- Plateau. Study has been carried out in Ife Central Local Government Area of Nigeria and compares the nutritional status of children attending urban and rural public primary school. Such studies actually have been carried out on nutritional status of primary school children in different parts of the world, including Nigeria. But to the best knowledge of the researcher no study has been done in Enugu South L.G.A recently, hence the study was carried out to determine the nutritional status of primary school children in Enugu South LGA of Enugu State. The present study was focus on the nutritional status of primary school children in Enugu South Local Government Area of Enugu State.The components of nutritional status under study were height-for-age(stunting)weight-for-height(wasting) and weight-for-age(underweight).

CHAPTER THREE

Methods

This chapter presents a description of the research design, area of the study, population for the study, sample and sampling techniques, instrument for data collection, including its validity and reliability, method of data collection and method of data analysis.

Research Design

In order to accomplish the purpose of the study, a cross-sectional survey research design was used for this study. This design permits the investigation of the current status of a phenomenon from a population in their natural setting. (Ejifugha, 1998). Bryman and Teevan (2005) asserted that the cross-sectional survey design entails the collection of data (usually quantitative) on more than one case (usually many more than one) and at a single point in time, on two or more variables (usually more than two), which are then examined to detect patterns of association. Eboh (2009) explained that the survey design aims at collecting information on certain variables in a study population at one point in time. This design was successfully employed by Mukherjee, Chaturvedi and Bhalwar (2008) to determine the nutritional status of school children in Army School, Puneò. The design is, therefore, considered appropriate for use in the present study.

Area of the Study

The study area was Enugu South Local Government Area of Enugu State. Enugu South covers 67 square kilometer of Enugu State, the state capital in the Eastern part of the state. It shares boundary with Enugu North LGA to the North, it also shares boundaries with Enugu East LGA to the East, Nkanu West Local Government Area to the West also its headquarters is Located at Uwani in Enugu. The inhabitants are mostly Igbo speaking, farmers who cultivate assorted crops and rear domestic animals. The people also participate in trading. The primary school children in Enugu South may be normal or malnourished in some nutrients as a result of what they ate which may hamper their growth and development. The present study therefore becomes a necessity.

Population for the Study

The population for the study was all the primary school children in Enugu South Local Government Area of Enugu State. The total population of the primary school children was eight thousand, eight hundred and seventy (8,870) in Enugu South (Education Units in Enugu South Local Government Area Headquarters, 2011). A comprehensive list of primary schools in Enugu South Local Government Area was found in Appendix IV.

Sample and Sampling Techniques

The sample for the study was 405 primary school children representing five per cent (5%) of the study population. The sample was adjudged representative of the population based on Nwanaǒs (1991) rule of the thumb, which stipulated that five per-cent sample could be drawn from a population running into few thousands. Hence, five per cent of the entire population was selected. The simple random sampling technique of balloting without replacement was used to draw a sample of 5 (2 from rural area and 3 from urban area) out of 26 primary schools that made up Enugu South Local Government Area of Enugu State. The purposive sampling technique was used to draw a sample of 81 children age 6 to 12 years old male and female from each of the five schools. The data was collected as follows, in the first school was collected from junior and senior class primary school children, 20 male and 20 female from junior primary class of age 6 to 9 years and 21 male and 20 female from senior primary class of age 10 to 12 years school children which made it a total of 81 primary school children from the first school and the same applied to the other four schools. The decision to select 81 respondents from each of the selected five schools was to ensure representation of all the primary school children in rural and urban area of Enugu South LGA. This gave a total of 405 children which was used for the study.

Instrument for Data Collection

The instrument for data collection was the researcher-designed questionnaire of nutritional status of primary school children (NSPSC) (see Appendix III).The questionnaire was made up of three sections A, B and C. Section A contained questions on the bio-data of the respondents.Section B comprised statements on nutritional status indices(height and weight) of primary school children which was measured using weighing scale at 100kg and meter rule of 175cm long, compared them with NCHS reference standard.Section C contained questions on food frequency.

Validity of the instrument.

The instrument was given to five experts from the University of Nigeria, Nsukka. The face validity of the research instrument was established by three experts or lecturers from the Department of Health and Physical Education, University of Nigeria, Nsukka campus, two from the Department of Home Science and Nutrition. Their task was to make careful judgment of the questionnaire and to ascertain that the instrument covers the objectives of the study. They checked for appropriateness of each item in terms of the suitability of the questionnaire items in the instrument and made necessary suggestions. The researcher harnesed the differences following the suggestions made by removing the irrelevant items from the questionnaire and made corrections as they deemed fit. Their constructive criticisms and suggestions were used to produce the instrument that was used for data collection in this study.

Reliability of the instrument.

The reliability of the instrument was determined through Cronbach Alpha reliability co-efficient method.Cronbach alpha statistics according to Cronbach (1951) and Uzoagulu (1998) is utilized to establish the internal consistency of an instrument of polychotomously scored items. A sample of twenty primary school children in Enugu South Local Government Area who was not included in the study but with the same characteristics with the study population was given the instrument, which was administered and took their measurement two times, first and the second came after two week. The returned copies of the test were related to each score to provide a reliability coefficient. The responses were analyzed using Cronbach alpha reliability coefficient.Ogbazi and Okpala (1994) maintained that in a reliability test, if the correlation-coefficient index obtained is up to .60 and above the instrument is considered reliable. In line with that, the correlation coefficient index that was obtained was .87, the NSPSC structured questionnaire was considered reliable for this study.

Method of Data Collection

The proper access to and co-operation from the respondents was achieved with a letter of introduction duly signed by the Head of Department of Health and physical Education, University of Nigeria, Nsukka introduced the researcher and sought permission to carry out the research on the nutritional status of primary school children. The researcher presented the letter to each Head master/Headmistress of schools selected for the study. Copies of the questionnaire was administered to the parents/or caregivers of the children in each primary school and the anthropometric measurement was taken by the researcher and some class teachers who was selected from each school to serve as research assistants. The completed questionnaires were collected by the researcher and the research assistant. This was to ensure high return rate.

Method of Data Analysis

Copies of the returned instrument by the respondents were crosschecked for completeness of the responses. The information from the questionnaire was analyzed using the Statistical Package for the Social Sciences (SPSS) batch system in determining the nutritional status. Research questions 1-15 was answered using frequencies and percentages. Chi square statistics was used to test the twelve null hypotheses at .05 level of significance.

CHAPTER FOUR

Results and Discussion

This chapter presents and discusses the findings of the study on Nutritional status of primary school children in Enugu South Local Government Area of Enugu State. Four hundred and five copies of the questionnaire were distributed, and all were returned and used for the study.

Results

The following results were derived from the data collected and were presented as shown below

Research question one.

What is the proportion of height-for-age (stunting) of primary school children? Data answering this research question are contained in Table 1

Table 1

Proportion of Height-for-Age (Stunting) Primary School Children (n=405)

Descriptive parameter	f	%
Normal	342	80.0
Moderately stunted	60	14.8
Severely stunted	21	5.2

Table 1 shows data on the proportion of height-for-age primary school children. The Table shows that majority of the primary school children are normal (80.0%) while (14.8%) moderately stunted and severely stunted (5.2%) respectively. This implies that majority of primary school children were normal.

Research question two.

What is the proportion of weight-for-height (wasting) of primary school children? Data answering this research question are contained in Table 2

Table 2

Proportion of Weight-for-Height (Wasting) Primary School Children (n=405)

Desciptive parameter	f	%
Normal	379	93.6
Moderately wasted	18	4.4
Severely wasted	8	2.0

Table 2 above shows data on the of proportion for weight-for-height primary school children. Table 2 shows that majority of the primary school children were normal(93.6%),followed by4.4% who were moderately wasted and severely wasted (2.0%). This implies that majority of primary school children were normal.

Research question three.

What is the proportion of weight-for-age (underweight) of primary school children? Data answering this research question are contained in Table 3

Table 3

Proportion of Weight-for-Age (Underweight) Primary School Children (n=405)

Descriptive parameter	f	%
Normal	377	93.1
Moderately underweight	12	3.0
Severely underweight	10	2.4
Overweight	6	1.5

Table 3 above shows data on the proportion of weight-for-age primary school children. Table 3 shows that 93.1per cent of the primary school children were normal, while 3.0 per cent were moderately underweight, 2.4 per cent were severely underweight and 1.5 per cent were overweight. This implies that majority of primary school children were normal.

Research question four.

What is the proportion of height-for-age of primary school children according to gender? Data answering this research question are contained in Table 4

Table 4

Proportion of Height-for-Age of Primary School Children According to Gender (n=405)

Descriptive parameter	Male		Female	
	f	%	f	%
Normal	154	83.2	170	77.3
Moderately stunted	21	11.4	39	17.7
Severely stunted	10	5.4	11	5.0

Table 4 shows that majority of male primary school children were normal (83.2%) followed by those who were moderately stunted(11.4%) and severely stunted (5.4%) while majority of female primary school children were normal (77.3%) followed by moderately stunted (17.7%) and severely stunted(5.0%). This implies that majority of both male and female primary school children were normal.

Research question five.

What is the proportion of weight-for-height of primary school children according to gender? Data answering this research question are contained in Table 5

Table 5

Proportion of Weight-for-Height of Primary School Children According to Gender (n=405)

Descriptive parameter	Male		Female	
	f	%	f	%
Normal	171	92.4	208	94.5
Moderately wasted	9	4.9	9	4.1
Severely wasted	5	2.7	3	1.4

Table 5 shows data on the proportion of weight-for-height of primary school children according to gender. The table shows that majority of male primary school children were normal (92.4%) followed by those who were moderately wasted(4.9%)

and severely wasted (2.7 %) while majority of female primary school children were normal (94.5%), followed by those who were moderately wasted(4.1%) and severely wasted (1.4%).This implies that majority both male and female primary school children were normal.

Research question six.

What is the proportion of weight-for-age of primary school children according to gender? Data answering this research question are contained in Table 6

Table 6

Proportion of Weight-for-Age of Primary School Children According to Gender (n=405)

Descriptiveparameter	Male		Female	
	f	%	f	%
Normal	171	92.4	206	93.6
Moderately underweight	8	4.3	4	1.8
Severely underweight	2	1.1	1	.5
Overweight	2	1.1	4	1.8
Underweight	2	1.1	5	2.3

Table 6 shows data on the proportion of weight-for-age of primary school children according to gender.Table 6 shows that a slightly higher proportion of female(93.6%) than male(92.4%) primary school children were normal,those who were moderately underweight(male=4.3%,female=1.8%).This implies that majority of female primary school children were normal compared to male primary school children.

Research question seven.

What is the proportion of height-for-age of primary school children according to location? Data answering this research question are contained in Table 7

Table 7

Proportion of Height-for-Age of Primary School Children According to Location (n=405)

Descriptive parameter	Urban		Rural	
	f	%	f	%
Normal	178	73.6	146	89.6
Moderately stunted	49	20.2	11	6.7
Severely stunted	15	6.2	6	3.7

Table 7 shows data on the proportion of height-for-age of primary school children according to location.Table 7 shows that a higher proportion of rural(89.6%) primary school children(psc) than urban psc(73.6%) were normal.These was followed by those who were moderately stunted(urban=20.2%,rural=6.7%)and those severely stunted(urban=6.2%,rural=3.7%).This implies that majority of urban primary school children are normal compared to rural primary school children.

Research question eight.

What is the proportion of weight-for-height of primary school children according to location? Data answering this research question are contained in Table 8

Table 8

Proportion of Weight-for-Height of Primary School Children According to Location (n=405)

Descriptive parameter	Urban		Rural	
	f	%	f	%
Normal	223	92.1	156	95.7

Moderately wasted	13	5.4	5	3.1
Severely wasted	6	2.5	2	1.2

Table 8 shows data on the proportion of weight-for-height of primary school children according to gender. The table shows that a slightly higher proportion of rural PSC (95.7%) than urban PSC (92.1%) were normal.This was followed by those who were moderately wasted (urban=5.4%,rural=3.1%) and those severely wasted(urban=2.5%,rural=1.2%). This implies that majority of urban primary school children are normal compared to rural primary school children.

Research question nine.

What is the proportion of weight-for-age of primary school children according to location? Data answering this research question are contained in Table 9

Table 9

Proportion of Weight-for-Age of Primary School Children According to Location (n=405)

Descriptive parameter	Urban		Rural	
	f	%	f	%
Normal	222	91.7	155	95.1
Moderately underweight	10	4.1	2	1.2
Severely underweight	2	.8	1	.6
Overweight	2	.8	4	2.5
Underweight	6	2.5	1	.6

Table 9 shows data on the proportion of weight-for-age of primary school children according to location.Table 9 shows that a slightly higher proportion of rural(95.1%) than urban(91.7%) psc were normal.This was followed by those who were moderately underweight(urban=4.1%,rural=1.2%),those who were severely underweight(urban=.8%,rural=.6%),those who were overweight (urban=.8%,rural=2.5%) and those underweight(urban=2.5%,rural=.6%). This implies that majority of urban primary school children are normal compared to rural primary school children.

Research question ten.

What is the proportion of height-for-age of primary school children on the basis of age group? Data answering this research question are contained in Table 10

Table 10

Proportion of Height-for-Age of Primary School Children On The Basis of Age Group (n=405)

Descriptive parameter		6.0-6.9 to 9.0-9.9years		10.0-10.9 to 13.0 - 13.9years
	f	%	f	%
Normal	124	84.4	200	77.5
Moderately stunted	13	8.8	47	18.2
Severely stunted	10	6.8	11	4.3

Table 10 shows data on the proportion of height-for-age of primary school on the basis of age group. The table shows that a higher proportion of psc aged6.9 to 9.9 than those aged 10-13.9 were normal followed by those who were moderately stunted(10-13.9=18.2% than 6-9.9) and those severely stunted(6-9.9=6.8% than 4.3%).This implies that majority of primary school children of age group 6.0-6.9 to 9.0-9.9(84.4%) and 13-13.9(77.5%)were normal for height-for-age.

Research question eleven.

What is the proportion of weight-for-height of primary school children on the basis of age? Data answering this research question are contained in Table 11

Table 11

Proportion of Weight-for-Height of Primary School Children On The Basis of Age (n=405)

Descriptive parameter	6.0-6.9 to 9.0-9.9years		10.0-10.9 to 13.0-13.9years	
	f	%	f	%
Normal	139	94.6	240	93.0
Moderately wasted	6	4.1	12	4.7
Severelywasted	2	1.4	6	2.3

Table 11 shows data on the proportion of weight-for-height of primary school children on the basis of age group.The table shows that a slightly higher proportion of psc aged 6.9 to9.9 than those aged 10-13.9 were normal followed by those who were moderately wasted (10-13.9 = 4.7% than6-9.9) and those severely wasted (10-13.9 = 4.7% than 6-9.9 = 1.4%). This implies that majority of psc aged 6-9years (94.6%) and 10-13.9 (93.0%) were normal for weight-for-height.

Research question twelve.

What is the proportion of weight-for-age of primary school children on the basis of age? Data answering this research question are contained in Table 12

Table 12

Proportion of Weight-for-Age of Primary School Children On The Basis of Age (n=405)

Descriptive parameter	6.0-6.9 to 9.0-9.9years		10.0-10.9 to 13.0-13.9years	
	f	%	f	%
Normal	137	93.2	240	93.2

Moderately underweight	4	2.7	8	3.1
Severely underweight	2	1.4	1	.4
Overweight	2	1.4	4	1.6
Underweight	2	1.4	5	1.9

Table 12 shows data on the proportion of weight-for-age of primary school children on the basis of age.Table 12 shows that majority of both psc aged 6.0-6.9 to 9.0-9.9 and 10.0-10.9 to 13.0-13.9 were normal (93.2%), followed by those who were moderately underweight (10-13.9 = 3.1% higher than 6-9.9 = 2.7%), those who were severely underweight (6-9.9 = 1.4% higher than .4%), those who were overweight (10-13.9% = 1.6% higher than 1.4%) and those who were underweight (10-13.9 = 1.9% higher than 1.4%).This implies that majority of psc aged 10.0-10.9 to 13.0-13.9 (93.2%) and 6-9years (93-2%) were normal for weight-for-age.

Research question thirteen.

What foods are given to the primary school children? Data answering this research questions are contained in Table 13-19

Table 13

Proportion of Root and Tuber food Given to Primary School Children (n=405)

Descriptive parameter	Daily		Once/ wk		2-3 times/ wk		4-6 times/ wk		Occasionally		Never	
Root and tubers	f	%	f	%	f	%	f	%	f	%	f	%
Garri	141	34.8	44	10.9	116	28.6	78	19.3	17	4.2	9	2.2
Plantain	24	5.9	86	21.2	96	23.7	25	6.2	161	39.8	13	3.2
Yam	93	23.0	46	11.4	117	28.9	110	27.2	26	6.4	13	3.2
Cocoyam	8	2.0	67	16.5	32	7.9	20	4.9	169	41.7	109	26.9
Fufu	94	23.2	42	10.4	57	14.1	75	18.5	67	16.5	70	17.3
Potatoes	27	6.7	51	12.6	71	17.5	51	12.6	177	43.7	28	6.9

Table 13 indicates the proportion of garri given to primary school children as follows: (daily = 34.8%) (Once/wk = 10.9%), (2 to 3times/wk = 28.6%), (46 times/wk = 19.3), (occasionally = 4.2%), (never = 3.2%), followed by plantain in this other (daily = 5.9%), (once/wk = 21.2%), (2 to 3times/wk = 23.7%), (4 to 6times/wk = 6.2%), (occasionally = 39.8), (never = 3.2%).

The table also shows the proportion of yam given to the primary school children as follows: (daily = 23.0%), (once/wk = 11.4%), (2 to 3times/wk = 28.9%), (4 to 6times/wk = 27.2%), (occasionally = 6.4%), (never = 3.2%), followed by cocoyam in thisother: (daily = 2.0%), (once/wk = 6.5%), (2 to 3times/wk = 7.9%), (4 to 6times/wk = 4.9%), (occasionally = 41.7%), (never = 26.9%).

The table further shows the proportion of fufu given to the primary school children as follows: (daily = 23.2%), (once/wk = 10.4%) ,(2 to 3times/wk = 14.1%), (4 to 6times/wk = 18.5%), (occasionally = 16.5%), (never = 17.3%), followed by those who were given potatoes in this other: (daily = 6.7%), (once/wk = 12.6%), (2 to 3times/wk = 17.5%), (4to6times/wk = 12.6%), (occasionally = 43.7%), (never = 6.9%). The table further indicates the overall proportion of root and tuber foods crops given to primary school children as follows: occasionally (25.4%), daily (15.9%), 4-6times a week (14.8%), 2-3times a week (20.1%), once weekly (13.8%). Those who were never given root and tubers foods were only 9.95 per cent.

Table 14
Proportion of Cereal and the products Given to Primary School Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3 times/wk		4-6 times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Cereal and products												
Corn flakes	42	10.4	37	9.1	43	10.6	15	3.7	67	16.5	201	49.6
Golden morn	29	7.2	35	8.6	52	12.8	14	3.5	94	23.2	181	44.7
Cerelac	16	40	21	5.2	26	6.4	15	3.7	40	9.9	287	70.9
Frisocream	14	3.5	24	5.9	20	4.9	9	2.2	42	10.4	296	73.1

Maize (pap)	46	11.4	52	12.8	210	51.9	33	8.1	29	7.2	35	8.6
Millet (Jero)	13	3.2	25	6.2	28	6.9	16	4.0	44	10.9	279	68.9
Sorghum	16	4.0	36	8.9	60	14.8	16	4.0	157	38.8	120	29.6
Wheat andwheat product	16	4.0	18	4.4	39	9.6	22	5.4	150	37.0	160	39.5
Semovita	34	8.4	31	7.7	47	1.6	27	6.7	199	49.1	67	16.5
Indomie	150	37.0	38	9.4	93	23.0	63	15.6	43	10.6	18	4.4
Spaghetti	34	8.4	151	37.3	110	27.2	25	6.2	50	12.3	35	8.6

Table 14 also indicates the proportion of cornflakes given to primary school children (psc) as follows: (daily = 10.4%), (once/wk = 9.1%), (2 to 3times/wk = 10.6%), (4 to 6times/wk = 3.7%), (occasionally = 16.5%) (never = 49.6%), followed by proportion of Golden morn in this other: (daily=7.2%), (once/wk = 8.6%), (2to3times/wk = 12.8%), (4 to 6times/wk = 3.5%), (occasionally = 23.2%), (never = 4.7%).The table also shows the proportion of cerelac given to the primary school children as follows: (daily = 4.0%), (once/wk = 5.2%), (2 to 3times/wk = 6.4%), (4 to 6times/wk = 3.7%), (occasionally = 9.9%), (never = 70.9%), followed by proportion of frisocream in this other: (daily = 3.5%), (once/wk = 5.9%), (2 to 3times/wk = 4.9%), (4 to 6times/wk = 2.2%), (occasionally = 10.4%), (never = 73.1%).

The table further shows the proportion of maize (pap) given to the primary school children as follows: (daily = 11.4%), (once/wk = 12.8%), (2 to 3times/wk = 51.9%), (4 to 6times/wk = 8.1%), (occasionally = 7.2%), (never8.6%), followed by the proportion of millet (Jero) given to psc in this other: (daily = 3.2%), (once/wk = 6.2%), (2 to 3times/wk = 6.9%), (4 to 6times/wk = 4.0%), (occasionally = 10.9%), (never = 68.9%).

The table further indicates the proportion of sorghum given to the primary school children in this other: (daily = 4.0%), (once/wk = 8.9%), (2 to 3times/wk = 14.8%), (4to6times/wk = 4.0%), (occasionally = 38.8%), (never29.6%), followed by the proportion of wheat and wheat product given to psc as follows:(daily = 4.0%), (once/wk = 4.4%), (2 to 3times/wk = 9.6%), (4 to 6times/wk = 5.4%), (occasionally = 37.0%), (never39.5%), the proportion of semovita given to psc as follows: (daily =

8.4%), (once/wk=7.7%), (2 to 3times/wk = 11.6%), (4to6times/wk = 6.7%), (occasionally = 49.1%), (never16.5%), the proportion of indomie given to psc in this other: (daily = 37.0%), (once/wk = 9.4%), (2 to 3times/wk = 23.0%), (4 to 6times/wk = 15.6%), (occasionally = 10.6), (never4.4%) and the proportion of spaghetti given to psc as follows: (daily = 8.4%), (once/wk = 37.3%), (2 to 3times/wk = 27.2%), (4 to 6times/wk = 6.2%), (occasionally = 12.3%), (never8.6%).

The table further indicates the overall proportion of cereal and products foods crops given to psc as follows: occasionally (20.54%), daily (9.22%), 4-6times a week (5.74%), 2-3times a week (15.42%), once weekly (10.5%).Those who were never given cereal and product foods were only 37.7 per cent.

Table 15

Nuts and Legume Foods Given the Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3 Times/wk		4-6 times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Nuts and legumes												
Groundnut	69	17.0	54	13.3	122	30.1	115	28.4	37	9.1	8	2.0
Beans	37	9.1	196	48.4	121	29.9	28	6.9	14	3.5	9	2.2
Soybeans	42	10.4	51	12.6	46	11.4	8	2.0	163	40.2	95	23.5
Moi-moi	36	8.9	228	56.3	61	15.1	20	4.9	47	11.6	13	3.2
Bean cake	29	7.2	45	11.1	217	53.6	27	6.7	34	8.4	53	13.1

Table 15 further indicates the proportion of groundnut given to primary schoolchildren (psc) asfollows: (daily = 17.0%), (once/wk = 13.3%), (2 to 3times/wk = 30.1), (46times/wk = 28.4), (occasionally = 9.1%), (never = 2.0%), followed by the proportion of beans given to psc in this other: (daily = 9.1%), (once/wk = 48.4%), (2 to 3times/wk = 29.9%), (4 to 6times/wk = 6.9%), (occasionally = 3.5%), (never = 2.2%).

The table also shows the proportion of soy beans given to the primary school children as follows: (daily = 10.4%), (once/wk = 12.6%), (2 to 3times/wk = 11.4%), (4 to 6times/wk = 2.0%), (occasionally = 40.2%), (never = 23.5%), followed by the proportion of moi moi given to psc in this other: (daily = 8.9%), (once/wk = 56.3%), (2 to 3times/wk = 15.1%), (4to6times/wk = 4.9%), (occasionally = 11.6%), (never = 3.2%).

The table further shows the proportion of bean cake given to the primary school children as follows: (daily = 7.2%), (once/wk = 11.1%), (2 to 3times/wk = 53.6%), (4 to 6times/wk = 6.7%), (occasionally = 8.4%), (never13.1%). The table further indicates the overall proportion of nuts and legumes foods crops given to psc as follows: occasionally (14.6%), daily (10.5%), 4-6times a week (9.8%), 2-3times a week (28.0%), once weekly (28.3%). Those who were never given nuts and legumes foods were only 8.8 per cent.

Table 16

Animal and Animal Products Given to the Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3 times/wk		4-6 times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Animal and animal products												
Fish	116	28.6	33	8.1	66	16.3	157	38.8	18	4.4	15	3.7
Chicken	41	10.1	51	12.6	39	9.6	23	5.7	239	59.0	12	3.0
Beef	44	10.9	38	9.4	125	30.9	103	25.4	44	10.9	51	12.6
Goat meat	29	7.2	36	8.9	116	28.6	94	23.2	88	21.7	42	10.4
Liver	16	4.0	33	8.1	25	6.2	20	4.9	197	48.6	114	28.1
Kidney	19	4.7	18	4.4	21	5.2	10	2.5	85	21.0	252	62.2
Crayfish	231	57.0	29	7.2	26	6.4	56	13.8	23	5.7	40	9.9
Snail	19	4.7	24	5.9	16	4.0	20	4.9	151	37.3	175	43.2
Turkey	30	7.4	29	7.2	24	5.9	20	4.9	155	38.3	147	36.3
Milk	130	32.1	35	8.6	162	40.0	31	7.7	30	7.4	17	4.2
Yoghurt	53	13.1	77	19.0	150	37.0	20	4.9	65	16.0	40	9.9
Cheese	28	6.9	25	6.2	27	6.7	7	1.7	65	16.0	253	62.5

Table 16 also indicates the proportion of fish given to psc as follows: (daily = 28.6%), (once/wk = 8.1%), (2 to 3times/wk = 16.3%), (46times/wk = 38.8%), (occasionally = 4.4%), (never = 3.7%), followed by the proportion of chicken given to psc in this other: (daily = 10.1%), (once/wk = 12.6%), (2 to 3times/wk = 9.6%), (4 to 6times/wk = 5.7%), (occasionally = 59.0%), (never = 3.0%).

The table also shows the proportion of beef given to the primary school children as follows: (daily = 10.9%), (once/wk = 9.4%), (2 to 3times/wk = 30.9%), (4 to 6times/wk = 25.4%), (occasionally = 10.9%), (never = 12.6%), followed by the proportion of goatmeat given to psc in this other: (daily = 7.2%), (once/wk = 8.9%), (2 to 3times/wk = 28.6%), (4 to 6times/wk = 23.2%), (occasionally = 21.7), (Never = 10.4%).

The table further shows the proportion of liver given to the primary school children as follows: (daily = 4.0%), (once/wk = 8.1%), (2 to 3times/wk = 6.2%), (4 to 6times/wk = 4.9%), (occasionally = 48.6%), (never28.1%), followed by the proportion of kidney given to psc in this other: (daily=4.7%), (once/wk=4.4%), (2to3times/wk=5.2%), (4 to 6times/wk = 2.5%), (occasionally = 21.0%), (never = 62.2%).

The table further indicates the proportion of crayfish given to the primary school children in this other: (daily = 57.0%), (once/wk = 7.2%), (2 to 3times/wk = 6.4%), (4 to 6times/wk =13.8%), (occasionally = 5.7%),(never = 9.9%), followed by the proportion of snail given to psc as follows:(daily = 4.7%), (once/wk = 5.9%), (2 to 3times/wk = 4.0%), (4 to 6times/wk = 4.9%), (occasionally = 37.3%), (never = 43.2%), proportion of turkey given to psc as follows: (daily = 7.4%), (once/wk = 7.2%), (2 to 3times/wk = 5.9%), (4 to 6times/wk = 4.9%), (occasionally =38.3%), (never = 36.3%), the proportion of milk given to psc in this other: (daily = 32.1%), (once/wk = 8.6%), (2 to 3times/wk = 40.0%), (4 to 6times/wk = 7.7%), (occasionally =7.4%), (never = 4.2%), the proportion of yoghurt given to psc in this other:(daily = 13.1%), (once/wk = 19.0%), (2 to 3times/wk = 37.0%), (4 to 6times/wk = 4.9%), (occasionally = 16.0%),(never = 9.9%) and the proportion of cheese given to psc as follows: (daily = 6.9%), (once/wk = 6.2%), (2 to 3times/wk = 6.7%), (4 to 6times/wk = 1.7%), (occasionally =16.0%),(never = 62.5%).

The table further indicates the overall proportion of animal and animal products foods crops given to psc as follows: occasionally (23.9%), daily (15.6%), 4-6times a week(11.5%),2-3times a week(16.4%),once weekly (8.8%).Those who were never given animal and animal products foods were only 23.8 per cent.

Table 17

Fats and Oil Given to the Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3times/wk		4-6times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Fats and oil												
Palm oil	258	63.7	32	7.9	23	5.7	66	16.3	11	2.7	15	3.7
Groundnut oil	80	19.8	41	10.1	210	51.9	23	5.7	19	4.7	32	7.9
Margarine	26	6.4	39	9.6	108	26.7	29	7.2	63	15.6	140	34.6
Butter	44	10.9	42	10.4	171	42.2	37	9.1	69	17.0	42	10.4

Table 17 indicates the proportion of palm oil given to psc as follows: (daily = 63.7%),(once/wk = 7.9%), (2 to 3times/wk = 5.7%), (4-6times/wk = 16.3%), (occasionally = 2.7%), (never = 3.7%), followed by the proportion of groundnut oil given to psc in this other: (daily =19.8%), (once/wk =10.1%), (2 to 3times/wk = 51.9%), (4 to 6times/wk = 5.7%), (occasionally = 4.7%), (never = 7.9%).

The table also shows the proportion of margarine given to the primary school children as follows: (daily = 6.4%), (once/wk = 9.6%), (2 to 3times/wk = 26.7%), (4 to 6times/wk = 7.2%), (occasionally = 15.6%), (never = 34.6%), followed by the proportion of butter given to psc in this other: (daily = 10.9%), (once/wk = 10.4%), (2 to 3times/wk = 42.2%), (4 to 6times/wk = 9.1%), (occasionally = 17.0%), (never = 10.4%).

The table further indicates the overall proportion of fats and oil foods crops given to psc as follows: occasionally (10.0%), daily (25.2%), 4-6times a week (9.6%), 2-3times a week (31.6%), once per week (9.5%).Those who were never given fats and oil foods were only 14.5 per cent.

Table 18

Vegetables Given to the Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3times/wk		4-6times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Vegetables												
Dark green vegetable	69	17.9	43	10.6	75	18.5	163	40.2	16	4.0	39	9.6
Tomatoes	54	13.3	54	13.3	227	56.0	31	7.7	15	3.7	24	5.9
Okro	35	8.6	59	14.6	235	58.0	28	6.9	25	6.2	23	5.7
Garden egg	36	8.9	38	9.4	230	56.8	28	6.9	59	14.6	14	3.5
Cabbage	29	7.2	33	8.1	67	16.5	33	8.1	190	46.9	53	13.1
Carrot	34	8.4	36	8.9	102	25.2	139	34.3	68	16.8	26	6.4
Lettuce	15	3.7	34	8.4	57	14.1	37	9.1	188	46.4	74	18.3
Bitter leaf	18	4.4	199	49.1	53	13.1	28	6.9	55	13.6	52	12.8

Table 18 shows the proportion of dark green vegetable given to the primary school children as follows: (daily = 17.0%), (once/wk = 10.6%), (2 to 3times/wk = 18.5%), (4 to 6times/wk = 40.2%), (occasionally = 4.0%), (never9.6%), followed by the proportion of tomatoes given to psc in this other: (daily = 13.3%), (once/wk = 13.3%), (2 to 3times/wk = 56.0%), (4 to 6times/wk = 7.7%), (occasionally = 3.7%), (never = 5.9%).

The table indicates the proportion of okro given to psc as follows: (daily = 8.6%), (once/wk = 14.6%), (2 to 3times/wk = 58.0%), (4-6times/wk = 6.9%), (occasionally = 6.2%), (never = 5.7%),followed by the proportion of gardenegg in this other: (daily = 8.9%), (once/wk = 9.4%), (2 to 3times/wk = 56.8%) ,(4 to 6times/wk = 6.9%), (occasionally =14.6%),(never =3.5%).

The table also shows the proportion of cabbage given to the primary school children as follows: (daily =7.2%), (once/wk =8.1%), (2 to 3times/wk =16.5%), (4 to 6times/wk = 8.1%), (occasionally = 46.9%), (never =13.1%),followed by the proportion of carrot given to psc in this other: (daily = 8.4%), (once/wk = 8.9%), (2 to 3times/wk = 25.2%), (4 to 6times/wk = 34.3%), (occasionally = 16.8), (never = 6.4%).The table indicates the proportion of lettuce given to psc as follows: (daily =3.7%), (once/wk = 8.4%), (2 to 3times/wk = 14.1%), (4-6times/wk = 9.1%), (occasionally = 46.4%), (never =18.3%),followed by the proportion of bitter leaf given to psc in this other: (daily = 4.4%), (once/wk = 49.1%), (2 to 3times/wk =13.1%) ,(4 to 6times/wk = 6.9%), (occasionally = 13.6%),(never =12.8%).

The table further indicates the overall proportion of vegetables foods crops given to psc as folows occasionally (19.0%), daily (9.1%), 4-6times a week(15.0%),2-3times a week(32.3%),once weekly (15.3%).Those who were never given root and tubers foods were only 9.4 per cent.

Table 19

Fruits Given to the Children (n=405)

Descriptive parameter	Daily		Once/wk		2-3times/wk		4-6times/wk		Occasionally		Never	
	f	%	f	%	f	%	f	%	f	%	f	%
Fruits												
Mango	164	40.5	32	7.9	79	19.5	74	18.3	53	13.1	3	.7
Guava	42	10.4	35	8.6	48	11.9	17	4.2	245	60.5	18	4.4
Avocado pear	30	7.4	32	7.9	58	14.3	24	5.9	211	52.1	50	12.3
Orange	119	29.4	34	8.4	165	40.7	35	8.6	39	9.6	13	3.2

Pineapple	68	16.8	52	12.8	194	47.9	19	4.7	48	11.9	24	5.9
Water melon	63	15.6	42	10.4	185	45.7	40	9.9	57	14.1	18	4.4
Pawpaw	48	11.9	49	12.1	226	55,8	24	5.9	48	11.9	10	2.5
Banana	54	13.3	42	10.4	201	49.6	41	10.1	60	14.8	7	1.7

Table 19 shows the proportion of mango given to the primary school children as follows: (daily = 40.5%), (once/wk = 7.9%), (2 to 3times/wk = 19.5%), (4 to 6times/wk = 18.3%), (occasionally = 13.1%), (never =.7%),followed by the proportion of guava given to psc in this other: (daily =10.4%), (once/wk = 8.6%), (2 to 3times/wk = 11.9%), (4to6times/wk=4.2%), (occasionally=60.5%),(never=4.4%).

The table further shows the proportion of avocado pear given to the primary school children as follows: (daily=7.4%), (once/wk=7.9%), (2to3times/wk=14.3%), (4to6times/wk=5.9%), (occasionally=52.1%),(never12.3%),followed by the proportion of orange given to psc in this other: (daily=29.4%), (once/wk=8.4%), (2to3times/wk=40.7%), (4to6times/wk=8.6%), (occasionally=9.6%),(never=3.2%).

The table further shows the proportion of pineapple given to the primary school children as follows: (daily=16.8%), (once/wk=12.8%), (2to3times/wk=47.9%), (4to6times/wk=4.7%), (occasionally=11.9%), (never5.9%), followed by the proportion of water melon given to psc in this other: (daily=15.6%), (once/wk=10.4%),(2 to 3times/wk = 45.7%), (4 to 6times/wk = 9.9%), (occasionally = 14.1), (never=4.4%).

The table indicates the proportion of pawpaw given to psc as follows: (daily = 11.9%), (once/wk = 2.1%), (2 to 3times/wk = 55.8%), (4-6times/wk = 5.9%), (occasionally = 11.9%), (never = 2.5%), followed by the proportion of banana given to psc in this other: (daily =13.3%), (once/wk = 10.4%), (2 to 3times/wk = 49.6%), (4 to 6times/wk = 10.1%), (occasionally = 14.8%), (never=1.7%).The table further indicates the overall proportion of fruits given to psc as follows: occasionally (23.5%), daily (18.2%),4-6times a week (8.5%),2-3times a week (35.7%),once weekly (9.8%).Those who were never given fruits were only 4.4 per cent.

Hypothesis one.

There is no significant difference in the proportion of height-for-age of male and female primary school children. The data testing this hypothesis are contained in Table 20

Table 20

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Height-for-Age of Primary School Children Based on Gender.

Height-for-age	Male		Female			
	O	(E)	O	(E)	cal χ^2 value	p-value
Normal	154	(148.0)	170	(176.0)	3.24	.198
Moderately stunted	21	(27.4)	39	(32.6)		
Severely stunted	10	(9.6)	11	(11.4)		

χ^2=3.24, df=2, P-value=.198, >.05

Table 20 indicates a cluster calculated χ^2 value of 3.24 with a p-value of .198 which is greater than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of height-for- age of male and female primary school children was therefore accepted.This means that the proportion of female and male primary school children that were normal, moderately stunted and severely stunted were the same.

Hypothesis two.

There is no significant difference in the proportion of weight-for-height of male and female primary school children. The data testing this hypothesis are contained in Table 21

Table 21

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Weight-for-Height of Primary School Children Based on Gender.

Weight-for-height	Male		Female			
	O	(E)	O	(E)	cal χ^2 value	p-value
Normal	171	(173.1)	208	(205.9)	1.09	.578
Moderately wasted	9	(8.2)	9	(9.8)		
Severely wasted	5	(3.7)	3	(4.3)		

χ^2=1.09, df=2, P-value=.578,>.05

Table 21 indicates a cluster calculated χ^2 value of 1.09 with a p-value of .578 which is greater than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- height of male and female primary school children was therefore accepted. This means that the proportions of male and female primary school children that were normal, moderately wasted and severely wasted were the same.

Hypothesis three.

There is no significant difference in the proportion of weight-for-age of male and female primary school children. The data testing this hypothesis are contained in Table 22

Table 22

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Weight-for-Age of Primary School Children Based on Gender.

Weight-for-age	Male		Female		Cal χ^2 value	p-value
	O	(E)	O	(E)		
Normal	171	(172.2)	206	(204.8)	3.87	.424
Moderately underweight	8	(5.5)	4	(6.5)		
Severely underweight	2	(1.4)	1	(1.6)		
Overweight	2	(2.7)	4	(3.3)		
Underweight	2	(3.2)	5	(3.8)		

G^2=3.87, df=4, P-value=.424, >.05

Table 22 indicates a cluster calculated G^2 value of 3.87 with a p-value of .424 which is greater than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- age of male and female primary school children was therefore accepted.This means that the proportion of female and male primary school children that were normal, moderately underweight, severely underweight, overweight and underweight were the same.

Hypothesis four.

There is no significant difference in the proportion of height-for-age of urban and rural primary school children. The data testing this hypothesis are contained in Table 23

Table 23

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Height-for-Age of Primary School Children Based on Location.

Height-for-age	Urban		Rural			
	O	(E)	O	(E)	cal G^2 value	p-value
Normal	178	(193.6)	146	(130.4)	16.29	.000
Moderately stunted	49	(35.9)	11	(24.1)		
Severely stunted	15	(12.5)	6	(8.5)		

$G^2$16.29, df=2,P-value=.000, >.05

Table 23 indicates a cluster calculated G^2 value of 16.29 with a p-value of .000 which is less than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of height-for- age of urban and rural primary school children was therefore rejected. This means that the proportion of urban and rural primary school children that were normal, moderately stunted and severely stunted differed.

Hypothesis five.

There is no significant difference in the proportion of weight-for-height of urban and rural primary school children. The data testing this hypothesis are contained in Table 24

Table 24

Result of Chi-Square Analysis Testing theNull Hypothesis of no Difference in Proportion of Weight-for-Height of Primary SchoolChildren Based onLocation

Weight-for-height	Urban		Rural		Cal χ^2 value	p-value
	O	(E)	O	(E)		
Normal	223	(226.5)	156	(152.5)	2.07	.355
Moderately wasted	13	(10.8)	5	(7.2)		
Severely wasted	6	(4.8)	2	(3.2)		

χ^2=2.07 df=2, P-value=.355, >.05

Table 24 indicates a cluster calculated χ^2 value of 2.07 with a p-value of .355 which was greater than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- height of urban and rural primary school children was therefore accepted. This means that the proportion of urban and rural primary school children that are normal, moderately wasted and severely wasted was the same.

Hypothesis six.

There is no significant difference in the proportion of weight-for-age of urban and rural primary school children. The data testing this hypothesis are contained in Table 25

Table 25

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Weight-for-Age of Primary School Children Based on Location.

Weight-for-age	Urban		Rural		Cal χ^2 value	p-value
	O	(E)	O	(E)		
Normal	222	(225.3)	155	(151.7)	6.66	.155
Moderately underweight	10	(7.2)	2	(4.8)		

Severely underweight	2	(1.8)	1	(1.2)
Overweight	2	(3.6)	4	(2.4)
Underweight	6	(4.2)	1	(2.8)

χ^2=6.66 df=4, P-value=.155 > .05

Table 25 indicates that a cluster calculated χ^2 value of 6.66 with a p-value of .155 which is greater than .05 level of significance at 4 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- age of urban and rural primary school children was therefore accepted. This means that the proportion of urban and rural primary school children that are normal, moderately underweight, severely underweight, overweight and underweight was the same.

Hypothesis seven.

There is no significant difference in the proportion of height-for-age on the basis of age group of primary school children. The data testing this hypothesis are contained in Table 26

Table 26

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Height-for-Age of Primary School Children Based on Age Group

Height-for-age	6.0-6.9 to 9.0-9.9yr		10.0-10.9 to 13.0-13.9			
	O	(E)	O	(E)	cal χ^2 value	p-value
Normal	124	(117.6)	200	(206.4)	7.27	.026
Moderately stunted	13	(21.8)	47	(38.2)		
Severely stunted	10	(7.6)	11	(13.4)		

χ^2 = 7.27, df = 2, P-value = .026, <.05

Table 26 indicates that a cluster calculated ɢ^2 value of 7.27 with a p-value of .026 which is less than .05 level of significance. The null hypothesis of no significance difference in proportion of height-for- age based on age group of primary school children was therefore rejected. This implies that there was difference in height-for-age on the basis of age groups of primary school children. This means that the proportion of primary school children of aged 6.0-9.9 and age group 10 -13years that were normal, moderately stunted and severely stunted was not the same.

Hypothesis eight.

There is no significant difference in the proportion of weight-for-height on the basis of age group of primary school children. The data testing this hypothesis are contained in Table 27

Table 27

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Weight-for-Height of Primary School Children Based on Age Group.

Weight-for-height	6.0-6.9 to 9.0-9.9yr		10.0-10.9 to 13.0-13.9			
	O	(E)	O	(E)	cal ɢ^2 value	p-value
Normal	139	(137.6)	240	(241.4)	.55	.766
Moderately wasted	6	(6.5)	12	(11.5)		
Severely wasted	2	(2.9)	6	(5.1)		

ɢ^2 = .55, df = 2, P-value = .766, > .05

Table 27 indicates a cluster calculated ɢ^2 value of .55 with a p-value of .766 which is greater than .05 level of significance at 2 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- height based on age group primary school children was therefore accepted. This implies that there was no difference in weight-for-height based on age groups of primary school children. This means that the proportion of primary school children of aged 6.0 -9.9 and age group 10-13years that were normal, moderately wasted and severely wasted was the same.

Hypothesis nine.

There is no significant difference in the proportion of weight-for-age on the basis of age group of primary school children. The data testing this hypothesis are contained in Table 28.

Table 28

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in Proportion of Weight-for-Age of Primary School Children Based on Age Group.

Weight-for-age	6.0-6.9 to 9.0-9.9		10.0-10.9 to 13.0-13.9		cal ɢ^2 value	p-value
	O	(E)	O	(E)		
Normal	137	(136.8)	240	(240.2)	1.45	.836
Moderately underweight	4	(4.4)	8	(7.6)		
Severely underweight	2	(1.1)	1	(1.9)		
Overweight	2	(2.2)	4	(3.8)		
Underweight	2	(2.9)	5	(4.5)		

ɢ^2=1.45, df=4, P-value=.836, >.05

Table 28 indicates a cluster calculated ɢ^2 value of 1.45 with a p-value of .836 which is greater than .05 level of significance at 4 degrees of freedom. The null hypothesis of no significance difference in proportion of weight-for- age based on age group of primary school children was therefore accepted. This implies that there was no difference in weight-for-age on the basis of age groups of primary school children. This means that the proportion of primary school children aged 6.0-9.9 and age group 10-13years that were normal, moderately underweight, severely underweight, overweight and underweight was the same.

Hypothesis ten.

There is no significant difference in food given to the child based on the level of education of parent/caregiver/guardian of primary school children. The data testing this hypothesis are contained in Table 29-82

Table 29

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parent/Caregiver/Guardian.

Root and tubers

Garri

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	4	(2.4)	0	(4.5)	26	(20.8)	23	(30.9)	4	(11.7)	51	(37.6)	44.96	.000
Secondary school	1	(2.4)	6	(4.6)	17	(21.2)	35	(31.5)	12	(12.0)	39	(38.3)		
Tertiary institution	3	(3.6)	11	(6.8)	28	(31.2)	55	(46.4)	27	(17.6)	38	(56.4)		
No formal education	1	(.6)	0	(1.0)	7	(4.8)	3	(7.2)	1	(2.7)	13	(8.7)		

G^2=44.96, df=15, p-value=.000< .05

Table 29 shows a cluster calculated G^2 value of 44.96 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected.This implies that the proportion of garri given to the primary school children occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given garri by their parents/caregivers/guardians based on their level of education is not the same.

Table 30

Result of chi-square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parent/Caregiver/Guardian.

Root and tubers

Plantain

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	6	(3.5)	62	(42.9)	5	(6.7)	13	(25.6)	19	(22.9)	3	(6.4)	33.79	.004
Secondary school	3	(3.5)	37	(43.7)	9	(6.8)	30	(26.1)	25	(23.4)	6	(6.5)		
Tertiary institution	4	(5.2)	49	(64.4)	10	(10.0)	49	(38.4)	36	(34.4)	14	(9.6)		
No formal education	0	(.8)	13	(9.9)	1	(1.5)	4	(5.9)	6	(5.3)	1	(1.5)		

G^2=33.79, df=15, p-value=.004< .05

Table 30 shows a cluster calculated G^2 value of 33.79 with a p-value of .004 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of plantain given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given plantain by their parents/caregivers/guardians based on their level of education is not the same.

Table 31

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parent/Caregiver/Guardian.

Roots and tubers

Yam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(3.5)	6	(6.9)	45	(29.3)	13	(31.2)	6	(12.3)	37	(24.8)	79.34	.000
Secondary school	1	(3.5)	7	(7.1)	24	(29.9)	42	(31.8)	11	(12.5)	25	(25.3)		
Tertiary institution	11	(5.2)	11	(10.4)	37	(44.0)	58	(46.8)	28	(18.4)	17	(37.2)		
No formal education	0	(.8)	2	(1.6)	4	(6.8)	4	(7.2)	1	(2.8)	14	(5.7)		

G^2=79.34, df=15, p-value=.000< .05

Table 31 shows a cluster calculated G^2 value of 79.43 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of yam given to the psc regarding the descriptive parameter differed according to level of education of parents/caregivers/guardians.

Table 32

Result of Chi-Square Analysis Testing the Null Hypothesis of no difference in the proportion of food given to the PSC According to Level of Education of Parents/Caregivers/Guardians.

Roots and tubers

Cocoyam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	17	(29.1)	63	(45.1)	6	(5.3)	6	(8.5)	14	(17.9)	2	(2.1)	49.27	.000
Secondary school	28	(29.6)	44	(45.9)	7	(5.4)	12	(8.7)	18	(18.2)	1	(2.2)		
Tertiary institution	64	(43.6)	45	(67.6)	5	(8.0)	14	(12.8)	30	(26.8)	4	(3.2)		
No formal education	0	(6.7)	17	(10.4)	2	(1.2)	0	(2.0)	5	(4.1)	1	(.5)		

G^2=49.27,df=15,p-value=.000< .05

Table 32 shows a cluster calculated G^2 value of 49.27 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of cocoyam given to the primary school children as per the descriptive parameter (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education differed.

Table 33

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parents/Caregivers/Guardians.

Roots and tuber

Fufu

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	8	(18.7)	11	(17.9)	36	(20.0)	11	(15.2)	5	(11.2)	37	(25.1)	88.85	.000
Secondary school	19	(19.0)	18	(18.2)	18	(20.4)	19	(15.5)	10	(11.4)	26	(25.5)		
Tertiary institution	43	(28.0)	36	(26.8)	15	(30.0)	26	(22.8)	25	(16.8)	17	(37.6)		
No formal education	0	(4.3)	2	(4.1)	6	(4.6)	1	(3.5)	2	(2.6)	14	(5.8)		

G^2=88.85, df=15, p-value=.000< .05

Table 33 shows a cluster calculated G^2 value of 88.85 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of fufu given to primary school children as per descriptive parameter (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education differed.

Table 34

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parents/Caregivers/Guardians.

Roots and tuber

Potatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	9	(7.5)	69	(47.2)	3	(13.6)	14	(18.9)	10	(13.6)	3	(7.2)	51.37	.000
Secondary school	7	(7.6)	39	(48.1)	18	(13.9)	20	(19.3)	20	(13.9)	6	(7.3)		
Tertiary institution	9	(11.2)	54	(70.8)	28	(20.4)	36	(28.4)	17	(20.4)	18	(10.8)		
No formal education	3	(1.7)	15	(10.9)	2	(3.1)	1	(4.4)	4	(3.1)	0	(1.7)		

G^2=51.37, df=15, p-value=.000< .05

Table 34 shows a cluster calculated G^2 value of 51.37 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of potatoes given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) potatoes by their parents/caregivers/guardians according to level of education differed.

Table 35

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Corn flakes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	77	(53.6)	13	(17.9)	4	(4.0)	5	(11.5)	4	(9.3)	5	(11.2)	67.96	.000
Secondary school	53	(54.6)	23	(18.2)	2	(4.1)	12	(11.7)	9	(10.0)	11	(11.4)		
Tertiary institution	49	(80.4)	30	(26.8)	9	(6.0)	24	(17.2)	24	(14.8)	26	(16.8)		
No formal education	22	(12.4)	1	(4.1)	0	(.9)	2	(2.7)	0	(2.3)	0	(2.6)		

G^2=67.96, df=15, p-value=.000< .05

Table 35 shows a cluster calculated G^2 value of 67.96 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of corn flakes given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education differed.

Table 36

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Golden morn

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	66	(48.3)	26	(25.1)	3	(3.7)	6	(13.9)	1	(9.3)	6	(7.7)	60.04	.000
Secondary school	56	(49.2)	22	(25.5)	0	(3.8)	12	(14.1)	14	(9.5)	6	(7.9)		
Tertiary institution	43	(72.4)	39	(37.6)	11	(5.6)	32	(20.8)	20	(14.0)	17	(11.6)		
No formal education	16	(11.2)	7	(5.8)	0	(.9)	2	(3.2)	0	(2.2)	0	(1.8)		

G^2=60.04, df=15, p-value=.000<.05

Table 36 shows a cluster calculated G^2 value of 60.04 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of golden morn given to the primary school children regarding the descriptive parameter differed according to level of education of parents/caregivers/guardians.

Table 37

Result of Chi-Square Analysis Testing the Null Hypothesis of no difference in the proportion of food given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Cerealac

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	86	(76.5)	7	(10.7)	3	(4.0)	4	(6.9)	4	(5.6)	4	(4.3)	16.60	.344
Secondary school	74	(78.0)	15	(10.9)	4	(4.1)	9	(7.1)	5	(5.7)	3	(4.3)		
Tertiary institution	105	(114.8)	17	(16.0)	8	(6.0)	13	(10.4)	10	(8.4)	9	(6.4)		
No formal education	22	(17.7)	1	(2.5)	0	(.9)	0	(1.6)	2	(1.3)	0	(1.0)		

G^2=16.60, df=15, p-value=.344 > .05

Table 37 shows a cluster calculated G^2 value of 16.60 with a p-value of .344 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of cerelac given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education are the same.

Table 38

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Frisocream

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	90	(78.9)	6	(11.2)	2	(2.4)	3	(5.3)	5	(6.4)	2	(3.7)	24.12	.063
Secondary school	78	(80.4)	16	(11.4)	3	(2.4)	4	(5.4)	5	(6.5)	4	(3.8)		
Tertiary institution	104	(118.4)	19	(16.8)	4	(3.6)	13	(8.0)	14	(9.6)	8	(5.6)		
No formal education	24	(18.3)	1	(2.6)	0	(.6)	0	(1.2)	0	(1.5)	0	(.9)		

G^2=24.12, df=15, p-value=.063 > .05

Table 38 shows a cluster calculated G^2 value of 24.12 with a p-value of .063 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of frisocream given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) according to level of education of their parents/caregivers/guardians are the same.

Table 39

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Maize(pap)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	7	(9.3)	4	(7.7)	9	(8.8)	71	(56.0)	9	(13.9)	8	(12.3)	36.42	.002
Secondary school	9	(9.5)	8	(7.9)	6	(9.0)	59	(57.0)	14	(14.1)	`12	(12.5)		
Tertiary institution	16	(14.0)	17	(11.6)	14	(13.2)	62	(84.0)	29	(20.8)	24	(18.4)		
No formal education	3	(2.2)	0	(1.8)	4	(2.0)	18	(13.0)	0	(3.2)	0	(2.8)		

G^2=36.42, df=15, p-value=.002 < .05

Table 39 shows a cluster calculated G^2 value of 36.42 with a p-value of .002 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of maize given to the primary school children as per descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 40

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Millet(Jero)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	87	(74.4)	6	(11.7)	4	(4.3)	5	(7.5)	3	(6.7)	3	(3.5)	23.29	.078
Secondary school	71	(75.8)	15	(12.0)	1	(4.3)	10	(7.6)	10	(6.8)	3	(3.5)		
Tertiary institution	102	(111.6)	19	(17.6)	11	(6.4)	11	(11.2)	12	(10.0)	7	(5.2)		
No formal education	19	(17.2)	4	(2.7)	0	(1.0)	2	(1.7)	0	(1.5)	0	(.8)		

G^2=23.29, df=15, p-value=.078 > .05

Table 40 shows a cluster calculated G^2 value of 23.29 with a p-value of .078 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of millet given to the primary school children as per descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education are the same.

Table 41

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Sorghum(Dawa)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	34	(32.0)	51	(41.9)	2	(4.3)	9	(16.0)	8	(9.6)	4	(4.3)	30.66	.010
Secondary school	32	(32.6)	41	(42.6)	4	(4.3)	17	(16.3)	15	(9.8)	1	(4.3)		
Tertiary institution	49	(48.0)	49	(62.8)	10	(6.4)	31	(24.0)	12	(14.4)	11	(6.4)		
No formal education	5	(7.4)	16	(9.7)	0	(1.0)	3	(3.7)	1	(2.2)	0	(1.0)		

G^2=30.66, df=15, p-value=.010 > .05

Table 41 shows a cluster calculated G^2 value of 30.66 with a p-value of .010 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of sorghum given to the primary school children as per descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education are the same.

Table 42

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given PSC According to Level of Education of Parents/Caregivers/Guardians.
Cereal and products

Wheat and Wheat product

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	32	(42.7)	57	(40.0)	4	(5.9)	9	(10.4)	4	(4.8)	2	(4.3)	35.99	.002
Secondary school	49	(43.5)	40	(40.7)	6	(6.0)	7	(10.6)	3	(4.9)	5	(4.3)		
Tertiary institution	72	(64.0)	38	(60.0)	11	(8.8)	21	(15.6)	11	(7.2)	9	(6.4)		
No formal education	7	(9.9)	15	(9.3)	1	(1.4)	2	(2.4)	0	(1.1)	0	(1.0)		

G^2=35.99, df=15, p-value=.002< .05

Table 42 shows a cluster calculated G^2 value of 35.99 with a p-value of .002 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of wheat and wheat product given to the primary school children as per descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) wheat and wheat product by their parents/caregivers/guardians according to level of education differed .

Table 43

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Semovita

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	12	(17.9)	74	(53.1)	3	(7.2)	6	(12.5)	6	(8.3)	7	(9.1)	45.84	.000
Secondary school	23	(18.2)	49	(54.0)	9	(7.3)	17	(12.8)	4	(8.4)	8	(9.2)		
Tertiary institution	31	(26.8)	58	(79.6)	12	(10.8)	23	(18.8)	19	(12.4)	19	(13.6)		
No formal education	1	(4.1)	18	(12.3)	3	(1.7)	1	(2.9)	2	(1.9)	0	(2.1)		

G^2=45.84, df=15, p-value=.000 < .05

Table 43 shows a cluster calculated G^2 value of 45.84 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of semovita given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to level of education differed.

Table 44

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given Tto PSC According to Level of Education of Parents/Caregivers/Guardians.

Cereal and products

Indomie

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	4	(4.8)	6	(11.5)	20	(16.8)	30	(24.8)	6	(10.1)	42	(40.0)	19.55	.190
Secondary school	6	(4.9)	13	(11.7)	16	(17.1)	27	(25.3)	7	(10.3)	41	(40.7)		
Tertiary institution	8	(7.2)	21	(17.2)	20	(25.2)	30	(37.2)	23	(15.2)	60	(60.0)		
No formal education	0	(1.1)	3	(2.7)	7	(3.9)	6	(5.7)	2	(2.3)	7	(9.3)		

G^2=19.55, df=15, p-value=.190 > .05

Table 44 shows a cluster calculated G^2 value of 19.55 with a p-value of .190 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of indomie given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) according to level of education of their parents/caregivers/guardians are the same.

Table 45

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parent/sCaregivers/Guardians.
Cereal and products

Spaghetti

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	10	(9.3)	11	(13.3)	2	(6.7)	17	(29.3)	61	(40.3)	7	(9.1)	63.84	.000
Secondary school	8	(9.5)	14	(13.6)	5	(6.8)	36	(29.9)	41	(41.0)	6	(9.2)		
Tertiary institution	15	(14.0)	24	(20.0)	16	(10.0)	55	(44.0)	31	(60.4)	21	(13.6)		
No formal education	2	(2.2)	1	(3.1)	2	(1.5)	2	(6.8)	18	(9.3)	0	(2.1)		

G^2=63.84, df=15, p-value=.000 < .05

Table 45 shows a cluster calculated G^2 value of 63.84 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of spaghetti given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) according to level of education of their parent/scaregivers/guardians differed.

Table 46

Result of Chi-SquareAnalysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Nuts and Legumes

Groundnut

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(2.1)	7	(9.9)	53	(30.7)	31	(32.5)	7	(14.4)	9	(18.4)	91.19	.000
Secondary school	4	(2.2)	4	(10.0)	28	(31.2)	35	(33.1)	15	(14.7)	24	(18.7)		
Tertiary institution	3	(3.2)	26	(14.8)	16	(46.0)	52	(48.8)	30	(21.6)	35	(27.6)		
No formal education	0	(.5)	0	(2.3)	18	(7.1)	4	(7.5)	2	(3.3)	1	(4.3)		

G^2=91.19, df=15, p-value=.000 < .05

Table 46 shows a cluster calculated G^2 value of 91.19 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of groundnut given to the primary school children regarding the descriptive parameter (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) differed according to the level of education of parents/caregivers/guardians.

Table 47

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Nuts and Legumes

Beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(2.4)	2	(3.7)	5	(7.5)	27	(32.3)	69	(52.3)	4	(9.9)	44.22	.000
Secondary school	3	(2.4)	5	(3.8)	4	(7.6)	44	(32.9)	41	(53.2)	13	(10.0)		
Tertiary institution	5	(3.6)	7	(5.6)	18	(11.2)	47	(48.4)	65	(78.4)	20	(14.8)		
No formal education	0	(.6)	0	(.9)	1	(1.7)	3	(7.5)	21	(12.1)	0	(2.3)		

G^2=44.22, df=15, p-value=.000 < .05

Table 47 shows a cluster calculated G^2 value of 44.22 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of beans given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of beans by parents/caregivers/guardians.

Table 48

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Nuts and Legumes

Soy beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	26	(25.3)	58	(43.5)	1	(2.1)	12	(12.3)	6	(13.6)	5	(11.2)	31.59	.007
Secondary school	27	(25.8)	42	(44.3)	3	(2.2)	12	(12.5)	14	(13.9)	12	(11.4)		
Tertiary institution	37	(38.0)	48	(65.2)	4	(3.2)	19	(18.4)	30	(20.4)	24	(16.8)		
No formal education	5	(5.9)	15	(10.1)	0	(.5)	3	(2.8)	1	(3.1)	1	(2.6)		

G^2=31.59, df=15, p-value=.007 < .05

Table 48 shows a cluster calculated G^2 value of 31.59 with a p-value of .007 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of soybeans given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 49

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given PSC According to Level of Education of Parents/Caregivers/Guardians.

Nuts and Legumes

Moi-moi

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	2	(3.5)	8	(12.5)	5	(5.3)	11	(16.3)	74	(60.8)	8	(9.6)	29.15	.015
Secondary school	3	(3.5)	15	(12.8)	3	(5.4)	24	(16.6)	60	(61.9)	5	(9.8)		
Tertiary institution	7	(5.2)	24	(18.8)	11	(8.0)	22	(24.4)	76	(91.2)	22	(14.4)		
No formal education	1	(.8)	0	(2.9)	1	(1.2)	4	(3.8)	18	(14.1)	1	(2.2)		

G^2=29.15, df=15, p-value=.015 < .05

Table 49 shows a cluster calculated G^2 value of 29.15 with a p-value of .015 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore accepted. This implies that the proportion of moi-moi given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 50

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Nuts and Legumes

Bean cake

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	10	(14.1)	4	(9.1)	5	(7.2)	80	(57.9)	6	(12.0)	3	(7.7)	46.27	.000
Secondary school	11	(14.4)	12	(9.2)	7	(7.3)	58	(58.9)	13	(12.2)	9	(7.9)		
Tertiary institution	30	(21.2)	18	(13.6)	13	(10.8)	60	(86.8)	24	(18.0)	17	(11.6)		
No formal education	2	(3.3)	0	(2.1)	2	(1.7)	19	(13.4)	2	(2.8)	0	(1.8)		

G^2=46.27, df=15, p-value=.000 < .05

Table 50 shows a cluster calculated G^2 value of 46.27 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of bean cake given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 51

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Fish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	4	(4.0)	3	(4.8)	73	(41.9)	10	(17.6)	3	(8.8)	15	(30.9)	84.74	.000
Secondary school	3	(4.1)	3	(4.9)	32	(42.6)	27	(17.9)	9	(9.0)	36	(31.5)		
Tertiary institution	8	(6.0)	11	(7.2)	34	(62.8)	27	(26.4)	20	(13.2)	62	(46.4)		
No formal education	0	(.9)	1	(1.1)	18	(9.7)	2	(4.1)	1	(2.0)	3	(7.2)		

G^2=84.74, df=15, p-value=.000 < .05

Table 51 shows a cluster calculated G^2 value of 84.74 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of fish given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians

Table 52

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Chicken

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	3	(3.2)	85	(63.7)	3	(6.1)	8	(10.4)	5	(13.6)	4	(10.9)	41.67	.000
Secondary school	3	(3.3)	61	(64.9)	3	(6.2)	11	(10.6)	16	(13.9)	16	(11.1)		
Tertiary institution	6	(4.8)	75	(95.6)	17	(9.2)	18	(15.6)	26	(20.4)	20	(16.4)		
No formal education	0	(.7)	18	(14.8)	0	(1.4)	2	(2.4)	4	(3.1)	1	(2.5)		

χ^2=41.67, df=15, p-value=.000 < .05

Table 52 shows a cluster calculated χ^2 value of 41.67 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of chicken given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 53

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Animal/animal product

Beef

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	11	(13.6)	11	(11.7)	40	(27.5)	30	(33.3)	9	(10.1)	7	(11.7)	38.15	.001
Secondary school	16	(13.9)	15	(12.0)	17	(28.0)	43	(34.0)	9	(10.3)	10	(12.0)		
Tertiary institution	24	(20.4)	17	(17.6)	39	(41.2)	38	(50.0)	17	(15.2)	27	(17.6)		
No formal education	0	(3.1)	1	(2.7)	7	(6.4)	14	(7.7)	3	(2.3)	0	(2.7)		

χ^2=38.15, df=15, p-value=.001 < .05

Table 53 shows a cluster calculated χ^2 value of 38.148 with a p-value of .001 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of beef given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 54

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Goat meat

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	8	(11.2)	13	(23.5)	41	(25.1)	33	(30.9)	10	(9.6)	3	(7.7)	46.08	.000
Secondary school	10	(11.4)	28	(23.9)	18	(25.5)	39	(31.5)	9	(9.8)	6	(7.9)		
Tertiary institution	23	(16.8)	45	(35.2)	28	(37.6)	34	(46.4)	13	(14.4)	19	(11.6)		
No formal education	1	(2.6)	2	(5.4)	7	(5.8)	10	(7.2)	4	(2.2)	1	(1.8)		

G^2=46.08, df=15, p-value=.000 < .05

Table 54 shows a cluster calculated G^2 value of 46.08 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of goat meat given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians

Table 55

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Liver

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	24	(30.4)	67	(52.5)	6	(5.3)	6	(6.7)	4	(8.8)	1	(4.3)	26.37	.034
Secondary school	34	(31.0)	47	(53.5)	5	(5.4)	8	(6.8)	10	(9.0)	6	(4.3)		
Tertiary institution	52	(45.6)	66	(78.8)	7	(8.0)	9	(10.0)	19	(13.2)	9	(6.4)		
No formal education	4	(7.0)	17	(12.2)	2	(1.2)	2	(1.5)	0	(2.0)	0	(1.0)		

G^2=26.37, df=15, p-value=.034 < .05

Table 55 shows a cluster calculated G^2 value of 26.37 with a p-value of .034 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of liver given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of liver by parents/caregivers/guardians.

Table 56

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Animal/animal product

Kidney

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	80	(67.2)	18	(22.7)	1	(2.7)	4	(5.6)	3	(4.8)	2	(5.1)	28.61	.018
Secondary school	72	(68.4)	23	(23.1)	3	(2.7)	2	(5.7)	3	(4.9)	7	(5.2)		
Tertiary institution	80	(100.8)	42	(34.0)	6	(4.0)	14	(8.4)	11	(7.2)	9	(7.6)		
No formal education	20	(15.6)	2	(5.2)	0	(.6)	1	(1.3)	1	(1.1)	1	(1.2)		

G^2=28.61, df=15, p-value=.018 < .05

Table 56 shows a cluster calculated G^2 value of 28.61 with a p-value of .018 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of kidney given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 57

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Crayfish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	9	(10.7)	2	(6.1)	25	(14.9)	3	(6.9)	3	(7.7)	66	(61.6)	55.37	.000
Secondary school	9	(10.9)	10	(6.2)	13	(15.2)	12	(7.1)	5	(7.9)	61	(62.7)		
Tertiary institution	21	(16.0)	11	(9.2)	9	(22.4)	8	(10.4)	21	(11.6)	92	(92.4)		
No formal education	1	(2.5)	0	(1.4)	9	(3.5)	3	(1.6)	0	(1.8)	12	(14.3)		

G^2=55.37, df=15, p-value=.000 < .05

Table 57 shows a cluster calculated G^2 value of 55.37 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of crayfish given to the primary school children regarding the descriptive parameter (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 58

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Animal/animal product

Snail

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	42	(46.7)	51	(40.3)	2	(5.3)	4	(4.3)	5	(6.4)	4	(5.1)	18.56	.234
Secondary school	47	(47.5)	41	(41.0)	4	(5.4)	4	(4.3)	7	(6.5)	7	(5.2)		
Tertiary institution	76	(70.0)	47	(60.4)	14	(8.0)	7	(6.4)	10	(9.6)	8	(7.6)		
No formal education	10	(10.8)	12	(9.3)	0	(1.2)	1	(1.0)	2	(1.5)	0	(1.2)		

G^2=18.56, df=15, p-value=.234 > .05

Table 58 shows a cluster calculated G^2 value of 18.56 with a p-value of .234 which is greater than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore accepted. This implies that the proportion of snail given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 59

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Turkey

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	42	(39.2)	49	(41.3)	2	(5.3)	4	(6.4)	7	(7.7)	4	(8.0)	25.61	.042
Secondary school	46	(39.9)	39	(42.1)	7	(5.4)	5	(6.5)	9	(7.9)	4	(8.1)		
Tertiary institution	48	(58.8)	58	(62.0)	11	(8.0)	12	(9.6)	12	(11.6)	21	(12.0)		
No formal education	11	(9.1)	9	(9.6)	0	(1.2)	3	(1.5)	1	(1.8)	1	(1.9)		

G^2=25.61, df=15, p-value=.042 < .05

Table 59 shows a cluster calculated G^2 value of 25.61 with a p-value of .042 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of turkey given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians

Table 60

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Milk

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	3	(4.5)	4	(8.0)	6	(8.3)	74	(43.2)	8	(9.3)	13	(34.7)	116.09	.000
Secondary school	4	(4.6)	9	(8.1)	8	(8.4)	47	(44.0)	14	(9.5)	28	(35.3)		
Tertiary institution	10	(6.8)	17	(12.0)	14	(12.4)	23	(64.8)	10	(14.0)	88	(52.0)		
No formal education	0	(1.0)	0	(1.9)	3	(1.9)	18	(10.0)	3	(2.2)	1	(8.0)		

G^2=116.09, df=15, p-value=.000 < .05

Table 60 shows a cluster calculated G^2 value of 116.09 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of milk given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 61

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Animal/animal product

Yoghurt

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal ɢ^{2}	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	11	(10.7)	9	(17.3)	1	(5.3)	50	(40.0)	29	(20.5)	8	(14.1)	33.65	.004
Secondary school	8	(10.9)	24	(17.7)	7	(5.4)	40	(40.7)	17	(20.9)	14	(14.4)		
Tertiary institution	18	(16.0)	30	(26.0)	12	(8.0)	48	(60.0)	25	(30.8)	29	(21.2)		
No formal education	3	(2.5)	2	(4.0)	0	(1.2)	12	(9.3)	6	(4.8)	2	(3.3)		

G^{2}=33.65, df=15, p-value=.004 < .05

Table 61 shows a cluster calculated ɢ^{2} value of 33.654 with a p-value of .004 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of yoghurt given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians.

Table 62

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Animal/animal product

Cheese

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	86	(67.5)	11	(17.3)	0	(1.9)	5	(7.2)	3	(6.7)	3	(7.5)	34.14	.003
Secondary school	70	(68.7)	17	(17.1)	3	(1.9)	7	(7.3)	6	(6.8)	7	(7.6)		
Tertiary institution	78	(101.2)	36	(26.0)	4	(2.8)	13	(10.8)	14	(10.0)	17	(11.2)		
No formal education	19	(15.6)	1	(4.0)	0	(.4)	2	(1.7)	2	(1.5)	1	(1.7)		

G^2=34.14, df=15, p-value=.003 < .05

Table 62 shows a cluster calculated G^2 value of 34.14 with a p-value of .003 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of cheese given to the primary school children regarding the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) differed according to level of education of parents/caregivers/guardians

Table 63

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fats and oil

Palm oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	2	(4.0)	0	(2.9)	31	(17.6)	3	(6.1)	4	(8.5)	68	(68.8)	75.52	.000
Secondary school	4	(4.1)	3	(3.0)	17	(17.9)	7	(6.2)	8	(8.7)	71	(70.1)		
Tertiary institution	9	(6.0)	8	(4.4)	4	(26.4)	12	(9.2)	19	(12.8)	110	(103.2)		
No formal education	0	(.9)	0	(.7)	14	(4.1)	1	(1.4)	1	(2.0)	9	(15.9)		

G^2=75.52, df=15, p-value=.000 < .05

Table 63 shows a cluster calculated G^2 value of 75.52 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of palm oil given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 64

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fats and oil

Groundnut oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	2	(8.5)	1	(5.1)	4	(6.1)	79	(56.0)	10	(10.9)	12	(21.3)	52.73	.000
Secondary school	10	(8.7)	6	(5.2)	5	(6.2)	55	(57.0)	12	(11.1)	22	(21.7)		
Tertiary institution	19	(12.8)	12	(7.6)	13	(9.2)	56	(84.0)	18	(16.4)	44	(32.0)		
No formal education	1	(2.0)	0	(1.2)	1	(1.4)	20	(13.0)	1	(2.5)	2	(4.9)		

$G^2 = 52.73$, df = 15, p-value=.000 < .05

Table 64 shows a cluster calculated G^2 value of 52.726 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parent/caregiver/guardian was therefore rejected. This implies that the proportion of groundnut oil given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 65

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fats and oil

Margarine

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	49	(37.3)	14	(16.8)	5	(7.7)	32	(28.8)	5	(10.4)	3	(6.9)	37.58	.001
Secondary school	28	(38.0)	26	(17.1)	8	(7.9)	30	(29.3)	12	(10.6)	6	(7.1)		
Tertiary institution	47	(56.0)	22	(25.2)	14	(11.6)	43	(43.2)	19	(15.6)	17	(10.4)		
No formal education	16	(8.6)	1	(3.9)	2	(1.8)	3	(6.7)	3	(2.4)	0	(1.6)		

G^2=37.58, df=15, p-value=.001 < .05

Table 65 shows a cluster calculated G^2 value of 37.58 with a p-value of .001 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of margarine given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 66

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Fats and oil

Butter

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	7	(11.2)	11	(18.4)	10	(9.9)	66	(45.6)	9	(11.2)	5	(11.7)	59.58	.000
Secondary school	8	(11.4)	23	(18.7)	5	(10.0)	46	(46.4)	14	(11.4)	14	(12.0)		
Tertiary institution	27	(16.8)	33	(27.6)	18	(14.8)	41	(68.4)	18	(16.8)	25	(17.6)		
No formal education	0	(2.6)	2	(4.3)	4	(2.3)	18	(10.6)	1	(2.6)	0	(2.7)		

G^2=59.58, df=15, p-value=.000 < .05

Table 66 shows a cluster calculated G^2 value of 59.58 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of buttter given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 67

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Dark green vegetable

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	5	(10.4)	1	(4.3)	70	(43.5)	10	(20.0)	10	(11.5)	12	(18.4)	74.36	.000
Secondary school	10	(10.6)	4	(4.3)	34	(44.3)	24	(20.4)	17	(11.7)	21	(18.7)		
Tertiary institution	22	(15.6)	11	(6.4)	39	(65.2)	39	(30.0)	15	(17.2)	36	(27.6)		
No formal education	1	(2.4)	0	(1.0)	20	(10.1)	2	(4.6)	1	(2.7)	0	(4.3)		

G^2=74.36, df=15, p-value=.000 < .05

Table 67 shows a cluster calculated G^2 value of 74.36 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of dark green vegetable given to the primary school children as per the descriptive parameter (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 68

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Tomatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	4	(6.4)	1	(4.0)	6	(8.3)	81	(60.5)	10	(14.4)	6	(14.4)	53.75	.000
Secondary school	5	(6.5)	5	(4.1)	8	(8.4)	60	(61.7)	19	(14.7)	13	(14.7)		
Tertiary institution	15	(9.6)	9	(6.0)	17	(12.4)	64	(90.8)	22	(21.6)	35	(21.6)		
No formal education	0	(1.5)	0	(.9)	0	(1.9)	22	(14.0)	3	(3.3)	0	(3.3)		

G^2=53.75, df=15, p-value=.000 < .05

Table 68 shows a cluster calculated G^2 value of 53.75 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of tomatoes given to the primary school children as per the descriptive parameter (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 69

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Okro

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	3	(6.1)	2	(6.7)	3	(7.5)	81	(62.7)	14	(15.7)	5	(9.3)	47.10	.000
Secondary school	4	(6.2)	5	(6.8)	6	(7.6)	65	(63.8)	20	(16.0)	10	(9.5)		
Tertiary institution	14	(9.2)	18	(10.0)	18	(11.2)	69	(94.0)	23	(23.6)	20	(14.0)		
No formal education	2	(1.4)	0	(1.5)	1	(1.7)	20	(14.5)	2	(3.6)	0	(2.2)		

G^2=47.10, df=15, p-value=.000 < .05

Table 69 shows a cluster calculated G^2 value of 47.10 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of okro given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 70

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Garden egg

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	3	(3.7)	7	(15.7)	7	(7.5)	78	(61.3)	9	(10.1)	4	(9.6)	56.26	.000
Secondary school	3	(3.8)	15	(16.0)	6	(7.6)	69	(62.5)	9	(10.3)	8	(9.8)		
Tertiary institution	7	(5.6)	37	(23.6)	15	(11.2)	60	(92.0)	19	(15.2)	24	(14.4)		
No formal education	1	(.9)	0	(3.6)	0	(1.7)	23	(14.2)	1	(2.3)	0	(2.2)		

G^2=56.26, df=15, p-value=.000 < .05

Table 70 shows a cluster calculated G^2 value of 56.26 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of garden egg given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 71

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Cabbage

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	9	(14.1)	72	(50.7)	5	(8.8)	14	(17.9)	5	(8.8)	3	(7.7)	69.97	.000
Secondary school	23	(14.4)	49	(51.6)	5	(9.0)	21	(18.2)	7	(9.0)	5	(7.9)		
Tertiary institution	20	(21.2)	48	(76.0)	23	(13.2)	30	(26.8)	21	(13.2)	20	(11.6)		
No formal education	1	(3.3)	21	(11.7)	0	(2.0)	2	(4.1)	0	(2.0)	1	(1.8)		

G^2=69.97, df=15, p-value=.000 < .05

Table 71 shows a cluster calculated G^2 value of 69.97 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of cabbage given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 72

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Vegetables

Carrot

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	6	(6.9)	16	(18.1)	52	(37.1)	26	(27.2)	6	(9.6)	2	(9.1)	61.40	.000
Secondary school	10	(7.1)	23	(18.5)	33	(37.8)	31	(27.7)	5	(9.8)	8	(9.2)		
Tertiary institution	10	(10.4)	29	(27.2)	35	(55.6)	41	(40.8)	23	(14.4)	24	(13.6)		
No formal education	0	(1.6)	0	(4.2)	19	(8.6)	4	(6.3)	2	(2.2)	0	(2.1)		

G^2=61.40, df=15, p-value=.000 < .05

Table 72 shows a cluster calculated G^2 value of 61.40 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of carrot given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 73

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parent/Caregiver/Guardian.

Vegetables

Lettuce

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	12	(19.7)	68	(50.1)	10	(9.9)	7	(15.2)	10	(9.1)	1	(4.0)	49.98	.000
Secondary school	22	(20.1)	48	(51.1)	10	(10.0)	20	(15.5)	6	(9.2)	4	(4.1)		
Tertiary institution	37	(29.6)	51	(75.2)	17	(14.8)	29	(22.8)	18	(13.6)	10	(6.0)		
No formal education	3	(4.6)	21	(11.6)	0	(2.3)	1	(3.5)	0	(2.1)	0	(.9)		

G^2=49.98, df=15, p-value=.000 < .05

Table 73 shows a cluster calculated G^2 value of 49.98 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of lettuce given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 74

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According Level of Education of Parents/Caregivers/Guardians

Vegetables

Bitter leaf

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	12	(13.9)	9	(14.7)	2	(7.5)	13	(14.1)	70	(53.1)	2	(4.8)	38.98	.001
Secondary school	15	(14.1)	13	(14.9)	6	(7.6)	16	(14.4)	53	(54.0)	7	(4.9)		
Tertiary institution	22	(20.8)	33	(22.0)	19	(11.2)	20	(21.2)	59	(79.6)	9	(7.2)		
No formal education	3	(3.2)	0	(3.4)	1	(1.7)	4	(3.3)	17	(12.3)	0	(1.1)		

G^2=38.98, df=15, p-value=.001< .05

Table 74 shows a cluster calculated G^2 value of 38.98 with a p-value of .001 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of bitter leaf given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 75

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fruits

Mango

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	0	(.8)	5	(14.1)	36	(19.7)	20	(21.1)	5	(8.5)	42	(43.7)	56.78	.000
Secondary school	0	(.8)	21	(14.4)	20	(20.1)	21	(21.5)	8	(8.7)	40	(44.5)		
Tertiary institution	3	(1.2)	27	(21.2)	9	(29.6)	36	(31.6)	17	(12.8)	70	(65.6)		
No formal education	0	(.2)	0	(3.3)	9	(4.6)	2	(4.9)	2	(2.0)	12	(10.1)		

G^2=56.78, df=15, p-value=.000 < .05

Table 75 shows a cluster calculated G^2 value of 56.78 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of mango given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 76

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fruits

Guava

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	3	(4.8)	82	(65.3)	6	(4.5)	11	(12.8)	4	(9.3)	2	(11.2)	39.90	.000
Secondary school	3	(4.9)	68	(66.5)	2	(4.6)	14	(13.0)	9	(9.5)	14	(11.4)		
Tertiary institution	12	(7.2)	76	(98.0)	8	(6.8)	20	(19.2)	20	(14.0)	26	(16.8)		
No formal education	0	(1.1)	19	(15.1)	1	(1.0)	3	(3.0)	2	(2.2)	0	(2.6)		

$G^2=39.90$, df=15, p-value=.000 < .05

Table 76 shows a cluster calculated G^2 value of 39.90 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of guava given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 77

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Fruits

Avocado pear

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	10	(13.3)	72	(56.3)	7	(6.4)	15	(15.5)	2	(8.5)	2	(8.0)	32.15	.006
Secondary school	12	(13.6)	60	(57.3)	5	(6.5)	14	(15.8)	8	(8.7)	11	(8.1)		
Tertiary institution	26	(20.0)	64	(84.4)	11	(9.6)	25	(23.2)	19	(12.8)	17	(12.0)		
No formal education	2	(3.1)	15	(13.0)	1	(1.5)	4	(3.6)	3	(2.0)	0	(1.9)		

G^2=32.15, df=15, p-value=.006 < .05

Table 77 shows a cluster calculated G^2 value of 32.15 with a p-value of .006 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of avocado pear given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 78

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fruits

Orange

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(3.5)	4	(10.4)	9	(9.3)	70	(44.0)	8	(9.1)	16	(31.7)	70.39	.000
Secondary school	3	(3.5)	17	(10.6)	11	(9.5)	39	(44.8)	8	(9.2)	32	(32.3)		
Tertiary institution	8	(5.2)	18	(15.6)	15	(14.0)	38	(66.0)	15	(13.6)	68	(47.6)		
No formal education	1	(.8)	0	(2.4)	0	(2.2)	18	(10.2)	3	(2.1)	3	(7.3)		

G^2=70.39, df=15, p-value=.000 < .05

Table 78 shows a cluster calculated G^2 value of 70.39 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of orange given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 79

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Fruits

Pine-apple

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	4	(6.4)	7	(12.8)	5	(5.1)	70	(51.7)	14	(13.9)	8	(18.1)	52.30	.000
Secondary school	7	(6.5)	14	(13.0)	9	(5.2)	53	(52.7)	14	(14.1)	13	(18.5)		
Tertiary institution	10	(9.6)	26	(19.2)	5	(7.6)	54	(77.6)	21	(20.8)	46	(27.2)		
No formal education	3	(1.5)	1	(3.0)	0	(1.2)	17	(12.0)	3	(3.2)	1	(4.2)		

G^2=52.30, df=15, p-value=.000 < .05

Table 79 shows a cluster calculated G^2 value of 52.30 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of pineapple given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 80

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.

Fruits

Water melon

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(4.8)	17	(15.2)	6	(10.7)	72	(49.3)	8	(11.2)	4	(16.8)	71.78	.000
Secondary school	6	(4.9)	19	(15.5)	13	(10.9)	50	(50.2)	9	(11.4)	13	(17.1)		
Tertiary institution	11	(7.2)	21	(22.8)	20	(16.0)	44	(74.0)	22	(16.8)	44	(25.2)		
No formal education	0	(1.1)	0	(3.5)	1	(2.5)	19	(11.4)	3	(2.6)	2	(3.9)		

G^2=71.78, df=15, p-value=.000 < .05

Table 80 shows a cluster calculated G^2 value of 71.78 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of water melon given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 81

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Fruits

Pawpaw

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(2.7)	9	(12.8)	6	(6.4)	77	(60.3)	8	(13.1)	7	(12.8)	50.25	.000
Secondary school	3	(2.7)	17	(13.0)	9	(6.5)	61	(61.4)	14	(13.3)	6	(13.0)		
Tertiary institution	6	(4.0)	22	(19.2)	8	(9.6)	66	(90.4)	26	(19.6)	34	(19.2)		
No formal education	0	(.6)	0	(3.0)	1	(1.5)	22	(14.0)	1	(3.0)	1	(3.0)		

G^2=50.25, df=15, p-value=.000 < .05

Table 81 shows a cluster calculated G^2 value of 50.25 with a p-value of .000 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of pawpaw given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Table 82

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC According to Level of Education of Parents/Caregivers/Guardians.
Fruits

Banana

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Primary school	1	(1.9)	19	(16.0)	9	(10.9)	64	(53.6)	11	(11.2)	4	(14.4)	31.22	.008
Secondary school	0	(1.9)	19	(16.3)	14	(11.1)	50	(54.6)	11	(11.4)	16	(14.7)		
Tertiary institution	6	(2.8)	21	(24.0)	17	(16.4)	70	(80.4)	16	(16.8)	32	(21.6)		
No formal education	0	(.4)	1	(3.7)	1	(2.5)	17	(12.4)	4	(2.6)	2	(3.3)		

G^2=31.22, df=15, p-value=.008 < .05

Table 82 shows a cluster calculated G^2 value of 31.22 with a p-value of .008 which is less than .05 level of significance at 15 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and level of education of parents/caregivers/guardians was therefore rejected. This implies that the proportion of banana given to the primary school children as per the descriptive parameter (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their level of education differed.

Hypothesis eleven.

There is no significant difference in food given to the child based on the income of parents of primary school children. The data testing this hypothesis are contained in Table 83-136

Table 83

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on Income of Parents/caregivers/guardians.

Roots and tubers

Garri

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	4	(2.9)	2	(5.4)	33	(24.8)	35	(36.9)	6	(14.0)	49	(44.9)	30.61	.001
Moderate	5	(5.6)	15	(10.5)	43	(48.1)	75	(71.6)	29	(27.2)	83	(87.0)		
High	0	(.6)	0	(1.1)	2	(5.0)	6	(7.4)	9	(2.8)	9	(9.1)		

G^2=30.61, df=10, p-value=.001 < .05

Table 83 shows a cluster calculated G^2 value of 30.61 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of garri given to the primary school children (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 84

Result of chi-square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Roots and tubers

Plantain

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	4	(4.1)	71	(51.3)	6	(8.0)	19	(30.6)	24	(27.4)	5	(7.6)	38.53	.000
Moderate	9	(8.0)	88	(99.4)	14	(15.4)	71	(59.3)	53	(53.1)	15	(14.8)		
High	0	(.8)	2	(10.3)	5	(1.6)	6	(6.2)	9	(5.5)	4	(1.5)		

G^2=38.53, df=10, p-value=.000< .05

Table 84 shows a cluster calculated G^2 value of 38.53 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of plantain given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 85

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Roots and tubers

Yam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	1	(4.1)	7	(8.3)	46	(35.0)	25	(37.3)	7	(14.7)	43	(29.6)	31.37	.001
Moderate	11	(8.0)	18	(16.0)	58	(67.9)	82	(72.2)	34	(28.4)	47	(57.4)		
High	1	(.8)	1	(1.7)	6	(7.1)	10	(7.5)	5	(3.0)	3	(6.0)		

G^2=31.37, df=10, p-value=.001< .05

Table 85 shows a cluster calculated G^2 value of 31.37 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of yam given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 86

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given To PSC Based on Income of Parents/caregivers/guardians.

Roots and tubers

Cocoyam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	31	(34.7)	68	(53.8)	8	(6.4)	5	(10.2)	14	(21.3)	3	(2.5)	30.61	.001
Moderate	70	(67.3)	96	(104.3)	7	(12.3)	23	(19.8)	50	(41.4)	4	(4.9)		
High	8	(7.0)	5	(10.8)	5	(1.3)	4	(2.1)	3	(4.3)	1	(.5)		

G^2=30.61, df=10, p-value=.001< .05

Table 86 shows a cluster calculated G^2 value of 30.61 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of cocoyam given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 87

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/gaurdians.

Roots and tubers

Fufu

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	15	(22.3)	11	(21.3)	41	(23.9)	14	(18.2)	3	(13.4)	45	(29.9)	63.64	.000
Moderate	53	(43.2)	51	(41.4)	29	(46.3)	36	(35.2)	33	(25.9)	48	(58.0)		
High	2	(4.5)	5	(4.3)	5	(4.8)	7	(3.7)	6	(2.7)	1	(6.0)		

G^2=63.64, df=10, p-value=.000 < .05

Table 87 shows a cluster calculated G^2 value of 63.64 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of fufu given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 88

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based Income of Parents/caregivers/guardians. Roots and tubers

Potatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	8	(8.9)	73	(56.4)	10	(16.2)	21	(22.6)	14	(16.2)	3	(8.6)	28.52	.001
Moderate	19	(17.3)	98	(109.3)	37	(31.5)	46	(43.8)	32	(31.5)	18	(16.7)		
High	1	(1.8)	6	(11.4)	4	(3.3)	4	(4.6)	5	(3.3)	6	(1.7)		

G^2=28.52, df=10, p-value=.001< .05

Table 88 shows a cluster calculated G^2 value of 28.515 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of potatoes given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 89

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregiver/guardians.

Cereal and Products

Cornflakes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	95	(64.0)	17	(21.3)	3	(4.8)	8	(13.7)	4	(11.8)	2	(13.4)	63.31	.000
Moderate	96	(124.1)	49	(41.4)	11	(9.3)	34	(26.5)	27	(22.8)	33	(25.9)		
High	10	(12.9)	1	(4.3)	1	(1.0)	1	(2.8)	6	(2.4)	7	(2.7)		

G^2=63.31, df=10, p-value=.000< .05

Table 89 shows a cluster calculated G^2 value of 63.31 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of cornflakes given to the primary school children (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 90

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Golden morn

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	85	(57.7)	31	(29.9)	0	(4.5)	9	(16.6)	3	(11.1)	1	(19.2)	66.97	.000
Moderate	91	(111.7)	57	(58.0)	11	(8.6)	42	(32.1)	27	(21.6)	22	(17.9)		
High	5	(11.6)	6	(6.0)	3	(.9)	1	(3.3)	5	(2.2)	6	(1.9)		

G^2=66.97, df=10, p-value=.000 < .05

Table 90 shows a cluster calculated G^2 value of 66.97 with a p-value of .00 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parent/caregiver/guardian was therefore rejected. This implies that the proportion of golden morn given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 91

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Cerelac

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	107	(91.4)	10	(12.7)	3	(4.8)	3	(8.3)	5	(6.7)	1	(5.1)	59.58	.000
Moderate	170	(172.2)	29	(24.7)	11	(9.3)	20	(16.0)	12	(13.0)	8	(9.9)		
High	10	(18.4)	1	(2.6)	1	(1.0)	3	(1.7)	4	(1.3)	7	(1.0)		

G^2=59.58, df=10, p-value=.000 < .05

Table 91 shows a cluster calculated G^2 value of 59.58 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of cerelac given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 92

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Frisocream

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	115	(94.3)	7	(13.4)	1	(2.9)	2	(6.4)	3	(7.6)	1	(4.5)	34.39	.000
Moderate	168	(182.7)	29	(25.9)	8	(5.6)	16	(12.3)	19	(14.8)	10	(8.6)		
High	13	(19.0)	6	(2.7)	0	(.6)	2	(1.3)	2	(1.5)	3	(.9)		

G^2=34.39, df=10, p-value=.000 < .05

Table 92 shows a cluster calculated G^2 value of 34.386 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of frisocream given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 93

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Maize(pap)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	7	(11.1)	2	(9.2)	14	(10.5)	87	(66.9)	8	(16.6)	11	(14.7)	40.02	.000
Moderate	26	(21.6)	24	(17.9)	18	(20.4)	117	(129.6)	37	(32.1)	28	(28.4)		
High	2	(2.2)	3	(1.9)	1	(2.1)	6	(13.5)	7	(3.3)	7	(3.0)		

χ^2=40.02, df=10, p-value=.000 < .05

Table 93 shows a cluster calculated χ^2 value of 40.015 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of maize(pap) given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 94

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Millet(Jero)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	103	(88.9)	9	(14.0)	0	(5.1)	9	(8.9)	3	(8.0)	5	(4.1)	27.20	.002
Moderate	164	(172.2)	29	(27.2)	13	(9.9)	18	(17.3)	20	(15.4)	6	(8.0)		
High	12	(17.9)	6	(2.8)	3	(1.0)	1	(1.8)	2	(1.6)	2	(.8)		

G^2=27.20, df=10, p-value=.002 < .05

Table 94 shows a cluster calculated G^2 value of 27.20 with a p-value of .002 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of millet(jero) given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 95

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Sorghum(dawa)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	39	(38.2)	62	(50.0)	2	(5.1)	15	(19.1)	10	(11.5)	1	(5.1)	22.65	.012
Moderate	75	(74.1)	89	(96.9)	14	(9.9)	38	(37.0)	22	(22.2)	12	(9.9)		
High	6	(7.7)	6	(10.1)	0	(1.0)	7	(3.9)	4	(2.3)	3	(1.0)		

G^2=22.65, df=10, p-value=.012 < .05

Table 95 shows a cluster calculated G^2 value of 22.65 with a p-value of .012 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of sorghum(dawa) given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parent/caregiver/guardian differed according to their income.

Table 96

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Wheat and wheat product

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	46	(51.0)	69	(47.8)	1	(7.0)	9	(12.4)	3	(5.7)	1	(5.1)	33.65	.012
Moderate	105	(98.8)	74	(92.6)	19	(13.6)	27	(24.1)	13	(11.1)	12	(9.9)		
High	9	(10.3)	7	(9.6)	2	(1.4)	3	(2.5)	2	(1.2)	3	(1.0)		

G^2=33.65, df=10, p-value=.012 < .05

Table 96 shows a cluster calculated G^2 value of 33.65 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of wheat and wheat product given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 97

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on Income of Parents/caregivers/guardians.

Cereal and Products

Semovita

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	21	(21.3)	86	(63.4)	3	(8.6)	11	(15.0)	6	(9.9)	2	(10.8)	45.63	.000
Moderate	40	(41.4)	110	(122.8)	19	(16.7)	33	(29.0)	21	(19.1)	27	(21.0)		
High	6	(4.3)	3	(12.8)	5	(1.7)	3	(3.0)	4	(2.0)	5	(2.2)		

G^2=45.63, df=10, p-value=.000 < .05

Table 97 shows a cluster calculated G^2 value of 45.63 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of semovita given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 98

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Cereal and Products

Indomie

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	3	(5.7)	12	(13.7)	23	(20.1)	36	(29.6)	7	(12.1)	48	(47.8)	10.32	.413
Moderate	13	(11.1)	29	(26.5)	38	(38.9)	52	(57.4)	27	(23.5)	91	(92.6)		
High	2	(1.2)	2	(2.8)	2	(4.0)	5	(6.0)	4	(2.4)	11	(9.6)		

G^2=10.32, df=10, p-value=.413 > .05

Table 98 shows a cluster calculated G^2 value of 10.32 with a p-value of .413 which is greater than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore accepted. This implies that the proportion of indomie given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 99

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on Income of Parents/caregivers/guardians.

Cereal and Products

Spaghetti

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	11	(11.1)	13	(15.9)	5	(8.0)	29	(35.0)	67	(48.1)	4	(10.8)	38.10	.000
Moderate	22	(21.6)	33	(30.9)	20	(15.4)	75	(67.9)	78	(93.2)	22	(21.0)		
High	2	(2.2)	4	(3.2)	0	(1.6)	6	(7.1)	6	(9.7)	8	(2.2)		

G^2=38.10, df=10, p-value=.000 < .05

Table 99 shows a cluster calculated G^2 value of 38.10 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of spaghetti given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 100

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Nuts and Legumes

Groundnut

	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	1	(2.5)	4	(11.8)	56	(36.6)	46	(38.9)	8	(17.2)	14	(22.0)	42.72	.000
Moderate	7	(4.9)	30	(22.8)	57	(71.0)	68	(75.3)	39	(33.3)	49	(42.6)		
High	0	(.5)	3	(2.4)	2	(7.4)	8	(7.8)	7	(3.5)	6	(4.4)		

G^2=42.72, df=10, p-value=.000< .05

Table 100 shows a cluster calculated G^2 value of 42.72 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of groundnut given to the primary school children (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 101

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Nuts and Legumes

Beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	1	(2.9)	2	(4.5)	4	(8.9)	34	(38.5)	81	(62.4)	7	(11.8)	27.09	.003
Moderate	8	(5.6)	10	(8.6)	23	(17.3)	76	(74.7)	108	(121.0)	25	(22.8)		
High	0	(.6)	2	(.9)	1	(1.8)	11	(7.8)	7	(12.6)	5	(2.4)		

χ^2=27.09, df=10, p-value=.003 < .05

Table 101 shows a cluster calculated χ^2 value of 27.09 with a p-value of .003 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of beans given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 102

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Nuts and Legumes

Soy beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	32	(30.3)	69	(51.9)	4	(2.5)	16	(14.7)	5	(16.2)	3	(13.4)	49.02	.000
Moderate	59	(58.6)	89	(100.6)	4	(4.9)	29	(28.4)	38	(31.5)	31	(25.9)		
High	4	(6.1)	5	(10.5)	0	(.5)	1	(3.0)	8	(3.3)	8	(2.7)		

G^2=49.02, df=10, p-value=.000 < .05

Table 102 shows a cluster calculated G^2 value of 49.02 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of soy beans given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income

Table 103

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to the PSC Based on the Income of Parents/caregivers/guardians.

Nuts and Legumes

Moi-moi

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	6	(4.1)	4	(15.0)	6	(6.4)	15	(19.4)	92	(72.6)	6	(11.5)	36.62	.000
Moderate	7	(8.0)	39	(29.0)	14	(12.3)	42	(37.7)	125	(140.7)	23	(22.2)		
High	0	(.8)	4	(3.0)	0	(1.3)	4	(3.9)	11	(14.6)	7	(2.3)		

χ^2=36.62, df=10, p-value=.000 < .05

Table 103 shows a cluster calculated χ^2 value of 36.62 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of mi-moi given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 104

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Nuts and Legumes

Bean cake

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	7	(16.9)	3	(10.8)	4	(8.6)	101	(69.1)	12	(14.3)	2	(9.2)	67.02	.000
Moderate	42	(32.7)	29	(21.0)	18	(16.7)	112	(134.0)	27	(27.8)	22	(17.9)		
High	4	(3.4)	2	(2.2)	5	(1.7)	4	(13.9)	6	(2.9)	5	(1.9)		

G^2=67.02, df=10, p-value=.000 < .05

Table 104 shows a cluster calculated G^2 value of 67.02 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of bean cake given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed in their income.

Table 105

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Fish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	4	(4.8)	4	(5.7)	82	(50.0)	19	(21.0)	6	(10.5)	14	(36.9)	67.94	.000
Moderate	11	(9.3)	14	(11.1)	71	(96.9)	45	(40.7)	22	(20.4)	87	(71.6)		
High	0	(1.0)	0	(1.2)	4	(10.1)	2	(4.2)	5	(2.1)	15	(7.4)		

G^2=67.94, df=10, p-value=.000<.05

Table 105 shows a cluster calculated $ɢ^2$ value of 67.94 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of fish given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed in their income

Table 106

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Chicken

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	3	(3.8)	104	(76.1)	5	(7.3)	9	(12.4)	5	(16.2)	3	(13.1)	58.50	.000
Moderate	7	(7.4)	131	(147.5)	17	(14.2)	25	(24.1)	37	(31.5)	33	(25.3)		
High	2	(.8)	4	(15.3)	1	(1.5)	5	(2.5)	9	(3.3)	5	(2.6)		

G^2=58.50, df=10, p-value=.000<.05

Table 106 shows a cluster calculated G^2 value of 58.50 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of chicken given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 107

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Beef

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	18	(16.2)	7	(14.0)	41	(32.8)	48	(39.8)	11	(12.1)	4	(14.0)	25.63	.004
Moderate	32	(31.5)	33	(27.2)	55	(63.6)	72	(77.2)	23	(23.5)	35	(27.2)		
High	1	(3.3)	4	(2.8)	7	(6.6)	5	(8.0)	4	(2.4)	5	(2.8)		

G^2=25.63, df=10, p-value=.004<.05

Table 107 shows a cluster calculated $ɢ^2$ value of 25.63 with a p-value of .004 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of beef given to the primary school children (occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given)by their parents/caregivers/guardians differed in their income.

Table 108

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Goat meat

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal ɢ^{2}	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	12	(13.4)	17	(28.0)	48	(29.9)	40	(36.9)	10	(11.5)	2	(9.2)	41.06	.000
Moderate	28	(25.9)	63	(54.3)	44	(58.0)	71	(71.6)	23	(22.2)	21	(17.9)		
High	2	(2.7)	8	(5.6)	2	(6.0)	5	(7.4)	3	(2.3)	6	(1.9)		

G^{2}=41.06, df=10, p-value=.000<.05

Table 108 shows a cluster calculated ɢ^{2} value of 41.06 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of goat meat given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 109

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Liver

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	38	(36.3)	71	(62.7)	4	(6.4)	8	(8.0)	6	(10.5)	2	(5.1)	31.34	.000
Moderate	69	(70.4)	119	(121.6)	16	(12.3)	16	(15.4)	19	(20.4)	11	(9.9)		
High	7	(7.3)	7	(12.6)	0	(1.3)	1	(1.6)	8	(2.1)	3	(1.0)		

G^2=31.43, df=10, p-value=.000<.05

Table 109 shows a cluster calculated G^2 value of 31.43 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of liver given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 110

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Kidney

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	99	(80.3)	19	(27.1)	2	(3.2)	4	(6.7)	1	(5.7)	4	(6.1)	21.66	.017
Moderate	140	(155.6)	60	(52.5)	7	(6.2)	16	(13.0)	14	(11.1)	13	(11.7)		
High	13	(16.2)	6	(5.5)	1	(.6)	1	(1.3)	3	(1.2)	2	(1.2)		

G^2=67.94, df=10, p-value=.017<.05

Table 110 shows a cluster calculated G^2 value of 21.66 with a p-value of .017 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of kidney given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 111

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Crayfish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	11	(12.7)	1	(7.3)	26	(17.8)	5	(8.3)	2	(9.2)	84	(73.6)	29.33	.001
Moderate	24	(24.7)	20	(14.2)	27	(34.6)	20	(16.0)	25	(17.9)	134	(142.6)		
High	55	(2.6)	2	(1.5)	3	(3.6)	1	(1.7)	2	(1.9)	13	(14.8)		

G^2=29.33, df=10, p-value=.001<.05

Table 111 shows a cluster calculated G^2 value of 29.33 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of crayfish given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 112

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Snail

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	58	(55.7)	57	(48.1)	3	(6.4)	8	(5.1)	1	(7.6)	2	(6.1)	30.04	.001
Moderate	105	(108.0)	91	(93.2)	15	(12.3)	6	(9.9)	19	(14.8)	14	(11.7)		
High	12	(11.2)	3	(9.7)	2	(1.3)	2	(1.0)	4	(1.5)	3	(1.2)		

χ^2=30.04, df=10, p-value=.001<.05

Table 112 shows a cluster calculated χ^2 value of 30.04 with a p-value of .001 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of snail given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their incom

Table 113

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Turkey

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	64	(46.8)	54	(49.4)	2	(6.4)	3	(7.6)	4	(9.2)	2	(9.6)	52.34	.000
Moderate	79	(90.7)	96	(95.7)	16	(12.3)	18	(14.8)	18	(17.9)	23	(18.5)		
High	4	(9.4)	5	(10.0)	2	(1.3)	3	(1.5)	7	(1.9)	5	(1.9)		

χ^2=52.34, df=10, p-value=.000<.05

Table 113 shows a cluster calculated χ^2 value of 52.34 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of turkey given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 114

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Milk

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	3	(5.4)	6	(9.6)	3	(9.9)	92	(51.6)	7	(11.1)	18	(41.4)	82.68	.000
Moderate	13	(10.5)	22	(18.5)	23	(19.1)	66	(100.0)	25	(21.6)	101	(80.2)		
High	1	(1.1)	2	(1.9)	5	(2.0)	4	(10.4)	3	(2.2)	11	(8.3)		

G^2=82.68, df=10, p-value=.000<.05

Table 114 shows a cluster calculated $ɢ^2$ value of 82.68 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of milk given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given milk by their parents/caregivers/guardians differed according to their income.

Table 115

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Yoghurt

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	17	(12.7)	10	(20.7)	0	(6.4)	71	(47.8)	27	(24.5)	4	(16.9)	64.34	.000
Moderate	21	(24.7)	53	(40.1)	17	(12.3)	76	(92.6)	43	(47.5)	40	(32.7)		
High	2	(2.6)	2	(4.2)	3	(1.3)	3	(9.6)	7	(4.9)	9	(3.4)		

G^2=64.34, df=10, p-value=.000<.05

Table 115 shows a cluster calculated G^2 value of 64.34 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of yoghurt given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 116

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Animal/animal product

Cheese

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	103	(80.6)	10	(20.7)	0	(2.2)	8	(8.6)	7	(8.0)	1	(8.9)	43.12	.000
Moderate	139	(156.2)	52	(40.1)	7	(4.3)	14	(16.7)	15	(15.4)	23	(17.3)		
High	11	(16.2)	3	(4.2)	0	(.4)	5	(1.7)	3	(1.6)	4	(1.8)		

G^2=43.12, df=10, p-value=.000<.05

Table 116 shows a cluster calculated G^2 value of 43.12 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of cheese given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 117

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fats and oil

Palm oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	1	(4.8)	0	(3.5)	35	(21.0)	6	(7.3)	4	(10.2)	83	(82.2)	57.30	.000
Moderate	12	(9.3)	11	(6.8)	31	(40.7)	17	(14.2)	19	(19.8)	160	(159.3)		
High	2	(1.0)	0	(.7)	0	(4.2)	0	(1.5)	9	(2.1)	15	(16.6)		

χ^2=57.30, df=10, p-value=.000<.05

Table 117 shows a cluster calculated χ^2 value of 57.30 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of palm oil given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income

Table 118

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fats and oil

Groundnut oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	4	(10.2)	2	(6.1)	7	(7.3)	95	(66.9)	9	(13.1)	12	(25.5)	41.45	.000
Moderate	26	(19.8)	15	(11.7)	15	(14.2)	106	(129.6)	29	(25.3)	59	(49.4)		
High	2	(2.1)	2	(1.2)	1	(1.5)	9	(13.5)	3	(2.6)	9	(5.1)		

χ^2=41.45, df=10, p-value=.000<.05

Table 118 shows a cluster calculated χ^2 value of 41.45 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of groundnut oil given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 119

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fats and oil

Margarine

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	50	(44.6)	18	(20.1)	10	(9.2)	39	(34.4)	10	(12.4)	2	(8.3)	16.19	.094
Moderate	86	(86.4)	40	(38.9)	16	(17.9)	63	(66.7)	25	(24.1)	20	(16.0)		
High	4	(9.0)	5	(4.0)	3	(1.9)	6	(6.9)	4	(2.5)	4	(1.7)		

$G^2=16.19$, df=10, p-value=.094 >.05

Table 119 shows a cluster calculated G^2 value of 16.19 with a p-value of .094 which is greater than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore accepted. This implies that the proportion of margarine given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians according to their income are the same.

Table 120

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fats and oil

Butter

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	11	(13.4)	17	(22.0)	14	(11.8)	76	(54.5)	8	(13.4)	3	(14.0)	39.65	.000
Moderate	29	(25.9)	45	(42.6)	19	(22.8)	92	(105.6)	29	(25.9)	36	(27.2)		
High	2	(2.7)	7	(4.4)	4	(2.4)	3	(11.0)	5	(2.7)	5	(2.8)		

χ^2=39.65, df=10, p-value=.000<.05

Table 120 shows a cluster calculated χ^2 value of 39.65 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of butter given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 121

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Dark green vegetable

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	3	(12.4)	3	(5.1)	80	(51.9)	23	(23.9)	8	(13.7)	12	(22.0)	45.08	.000
Moderate	32	(24.1)	12	(9.9)	77	(100.6)	47	(46.3)	31	(26.5)	51	(42.6)		
High	4	(2.5)	1	(1.0)	6	(10.5)	5	(4.8)	4	(2.8)	6	(4.4)		

G^2=45.08, df=10, p-value=.000<.05

Table 121 shows a cluster calculated G^2 value of 45.08 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of dark green vegetable given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) dark green vegetable by their parents/caregivers/guardians differed according to their income.

Table 122

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Tomatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	2	(7.6)	2	(4.8)	5	(9.9)	104	(72.3)	12	(17.2)	4	(17.2)	67.42	.000
Moderate	17	(14.8)	13	(9.3)	21	(19.1)	119	(140.1)	37	(33.3)	43	(33.3)		
High	5	(1.5)	0	(1.0)	5	(2.0)	4	(14.6)	5	(3.5)	7	(3.5)		

G^2=67.42, df=10, p-value=.000<.05

Table 122 shows a cluster calculated G^2 value of 67.42 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of tomatoes given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 123

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Okro

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	2	(7.3)	3	(8.0)	5	(8.9)	99	(74.9)	18	(18.8)	2	(11.1)	56.17	.000
Moderate	20	(14.2)	22	(15.4)	19	(17.3)	130	(145.1)	32	(36.4)	27	(21.6)		
High	1	(1.5)	0	(1.6)	4	(1.8)	6	(15.1)	9	(3.8)	6	(2.2)		

G^2=56.17, df=10, p-value=.000<.05

Table 123 shows a cluster calculated G^2 value of 56.17 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parentscaregivers/guardians was therefore rejected. This implies that the proportion of okro given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 124

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Garden egg

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	2	(4.5)	10	(18.8)	6	(8.9)	104	(73.3)	5	(12.1)	2	(11.5)	61.87	.000
Moderate	10	(8.6)	46	(36.4)	19	(17.3)	120	(142.0)	25	(23.5)	30	(22.2)		
High	2	(.9)	3	(3.8)	3	(1.8)	6	(14.8)	8	(2.4)	4	(2.3)		

G^2=61.87, df=10, p-value=.000< .05

Table 124 shows a cluster calculated G^2 value of 61.87 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of garden egg given to the primary school children (occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 125

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Cabbage

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	16	(16.9)	90	(60.5)	4	(10.5)	14	(21.3)	3	(10.5)	2	(9.2)	55.61	.000
Moderate	36	(32.7)	92	(117.3)	25	(20.4)	49	(41.4)	24	(20.4)	24	(17.9)		
High	1	(3.3)	8	(12.2)	4	(2.1)	4	(4.3)	6	(2.1)	3	(1.9)		

G^2=55.61, df=10, p-value=.000<.05

Table 125 shows a cluster calculated G^2 value of 55.61 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of cabbage given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 126

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Carrot

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	5	(8.3)	20	(21.7)	61	(44.3)	37	(32.5)	2	(11.5)	4	(10.8)	35.80	.000
Moderate	18	(16.0)	43	(42.0)	73	(85.8)	60	(63.0)	28	(22.2)	28	(21.0)		
High	3	(1.7)	5	(4.4)	5	(8.9)	5	(6.5)	6	(2.3)	2	(2.2)		

χ^2=35.80, df=10, p-value=.000<.05

Table 126 shows a cluster calculated χ^2 value of 35.80 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of carrot given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 127

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Lettuce

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	17	(23.6)	85	(59.9)	11	(11.8)	8	(18.2)	7	(10.8)	1	(4.8)	40.00	.000
Moderate	54	(45.7)	95	(116.0)	23	(22.8)	42	(35.2)	24	(21.0)	12	(9.3)		
High	3	(4.8)	8	(12.1)	3	(2.4)	7	(3.7)	3	(2.2)	2	(1.0)		

G^2=40.00, df=10, p-value=.000<.05

Table 127 shows a cluster calculated G^2 value of 40.00 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of lettuce given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 128

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Vegetables

Bitter leaf

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	17	(16.6)	9	(17.5)	6	(8.9)	18	(16.9)	77	(63.4)	2	(5.7)	23.06	.011
Moderate	33	(32.1)	39	(34.0)	20	(17.3)	30	(32.7)	115	(122.8)	13	(11.1)		
High	2	(3.3)	7	(3.5)	2	(1.8)	5	(3.4)	7	(12.8)	3	(1.2)		

G^2=23.06, df=10, p-value=.011< .05

Table 128 shows a cluster calculated G^2 value of 23.06 with a p-value of .011 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of bitter leaf given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 129

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Mango

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	0	(1.0)	11	(16.9)	35	(23.6)	20	(25.2)	6	(10.2)	57	(52.2)	20.93	.022
Moderate	2	(1.9)	38	(32.7)	35	(45.7)	55	(48.8)	23	(19.8)	97	(101.2)		
High	1	(.2)	4	(3.4)	4	(4.8)	4	(4.8)	3	(2.1)	10	(10.5)		

G^2=20.93, df=10, p-value=.022< .05

Table 129 shows a cluster calculated G^2 value of 20.93 with a p-value of .022 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of mango given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 130

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Guava

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	3	(5.7)	103	(78.0)	4	(5.4)	13	(15.3)	4	(11.1)	2	(13.4)	48.09	.000
Moderate	11	(11.1)	135	(151.2)	12	(10.5)	30	(29.6)	26	(21.6)	36	(25.9)		
High	4	(1.2)	7	(15.7)	1	(1.1)	5	(3.1)	5	(2.2)	4	(2.7)		

G^2=48.09, df=10, p-value=.000< .05

Table 130 shows a cluster calculated $ɢ^2$ value of 48.09 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of guava given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 131

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Avocado pear

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	13	(15.9)	89	(67.2)	2	(7.6)	19	(18.5)	3	(10.2)	3	(9.6)	44.46	.000
Moderate	30	(30.9)	117	(130.2)	19	(14.8)	37	(35.8)	24	(19.8)	23	(18.5)		
High	7	(3.2)	5	(13.5)	3	(1.5)	2	(3.7)	5	(2.1)	4	(1.9)		

G^2=44.46, df=10, p-value=.000< .05

Table 131 shows a cluster calculated G^2 value of 44.46 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of avocado pear given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 132

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Orange

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	4	(4.1)	5	(12.4)	4	(11.1)	85	(52.6)	9	(10.8)	22	(37.9)	58.76	.000
Moderate	8	(8.0)	29	(24.1)	29	(21.6)	77	(101.9)	21	(21.0)	86	(73.5)		
High	1	(.8)	5	(2.5)	2	(2.2)	3	(10.6)	4	(2.2)	11	(7.6)		

G^2=58.76, df=10, p-value=.000<.05

Table 132 shows a cluster calculated $ɢ^2$ value of 58.76 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of orange given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 133

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Pine-apple

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	7	(7.6)	8	(15.3)	3	(6.1)	89	(61.8)	15	(16.6)	7	(21.7)	45.79	.000
Moderate	16	(14.8)	36	(29.6)	14	(11.7)	100	(119.8)	31	(32.1)	53	(42.0)		
High	1	(1.5)	4	(3.1)	2	(1.2)	5	(12.5)	6	(3.3)	8	(4.4)		

χ^2=45.79, df=10, p-value=.000< .05

Table 133 shows a cluster calculated χ^2 value of 45.79 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of pine-apple given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 134

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Water melon

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	5	(5.7)	17	(18.2)	4	(12.7)	86	(58.9)	11	(13.4)	6	(20.1)	46.08	.000
Moderate	11	(11.1)	36	(35.2)	32	(24.7)	94	(114.2)	27	(25.9)	50	(38.9)		
High	2	(1.2)	4	(3.7)	4	(2.6)	5	(11.9)	4	(2.7)	7	(4.0)		

G^2=46.08, df=10, p-value=.000< .05

Table 134 shows a cluster calculated G^2 value of 46.08 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of water melon given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 135

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Pawpaw

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	2	(3.2)	10	(15.3)	5	(7.6)	99	(72.0)	10	(15.6)	3	(15.3)	49.93	.000
Moderate	8	(6.2)	36	(29.6)	15	(14.8)	120	(139.5)	34	(30.2)	37	(29.6)		
High	0	(.6)	2	(3.1)	4	(1.5)	7	(14.5)	5	(3.1)	8	(3.1)		

G^2=49.93, df=10, p-value=.000< .05

Table 135 shows a cluster calculated G^2 value of 49.93 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of pawpaw given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Table 136

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Income of Parents/caregivers/guardians.

Fruits

Banana

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
Low	1	(2.2)	15	(19.1)	8	(13.1)	87	(64.0)	14	(13.4)	4	(17.2)	37.48	.000
Moderate	5	(4.3)	43	(37.0)	29	(25.3)	106	(124.1)	24	(25.9)	43	(33.3)		
High	1	(.4)	2	(3.9)	4	(2.6)	8	(12.9)	4	(2.7)	7	(3.5)		

G^2=37.48, df=10, p-value=.000< .05

Table 136 shows a cluster calculated G^2 value of 37.48 with a p-value of .000 which is less than .05 level of significance at 10 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and income of parents/caregivers/guardians was therefore rejected. This implies that the proportion of banana given to the primary school children (occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given) by their parents/caregivers/guardians differed according to their income.

Hypothesis twelve.

There is no significant difference in food given to the psc based on the number of children in the family of primary school children. The data testing this hypothesis are contained in Table 137-190

Table 137

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Garri

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	7	(7.1)	16	(13.3)	59	(61.2)	102	(91.1)	39	(34.5)	95	(110.7)	21.98	.001
7 to 12	2	(1.9)	1	(3.7)	19	(16.8)	14	(24.9)	5	(9.5)	46	(30.3)		

G^2=21.98, df=5, p-value=.001< .05

Table 137 shows a cluster calculated G^2 value of 21.98 with a p-value of .001 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child according to the number of children in the family was therefore rejected. This implies that the proportion of garri given to the primary school children occasionally, 4-6times a week,2-3times a week, once a week, daily and those that were never given garri by their parents/caregivers/guardians,differed according to the number of children in the family(parity) .

Table 138

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Plantain

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	12	(10.2)	119	(126.4)	17	(19.6)	80	(75.4)	72	(67.5)	18	(18.8)	8.01	.156
7 to 12	1	(2.8)	42	(34.6)	8	(5.4)	16	(20.6)	14	(20.6)	6	(5.2)		

$G^2=8.01$, df=5, p-value=.156 > .05

Table 138 shows a cluster calculated G^2 value of 8.01 with a p-value of .156 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of plantain given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given plantain by their parents/caregivers/guardians according to the number in the family (parity) are the same.

Table 139

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Yam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	12	(10.2)	22	(20.4)	86	(86.4)	102	(91.9)	38	(36.1)	58	(73.0)	22.09	.001
7 to 12	1	(2.8)	4	(5.6)	24	(23.6)	15	(25.1)	8	(9.9)	35	(20.0)		

G^2=22.09, df=5, p-value=.001 < .05

Table 139 shows a cluster calculated G^2 value of 22.09 with a p-value of .001 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of yam given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given yam by their parents/caregivers/guardians differed according to number in the family (parity).

Table 140

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Cocoyam

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	98	(85.6)	120	(132.7)	13	(15.7)	30	(25.1)	54	(52.6)	3	(6.3)	28.76	.000
7 to 12	11	(23.4)	49	(36.3)	7	(4.3)	2	(6.9)	13	(14.4)	5	(1.7)		

G^2=28.76, df=5, p-value=.000 < .05

Table 140 shows a cluster calculated G^2 value of 28.76 with a p-value of .000 hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of cocoyam given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given cocoyam by their parents/caregivers/guardians differed according to number of children in the family (parity).

Table 141

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Fufu

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	64	(55.0)	57	(52.6)	60	(58.9)	47	(44.8)	34	(33.0)	56	(73.8)	29.39	.000
7 to 12	6	(15.0)	10	(14.4)	15	(16.1)	10	(12.2)	8	(9.0)	38	(20.2)		

G^2=29.39, df=5, p-value=.000 < .05

Table 141 shows a cluster calculated G^2 value of 29.39 with a p-value of .000 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of fufu given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given fufu by their parents/caregivers/guardians differed according to number of children in the family (parity).

Table 142

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Roots and tubers

Potatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	20	(22.0)	130	(139.0)	42	(40.0)	60	(55.7)	43	(40.0)	23	(21.2)	7.22	.205
7 to 12	6	(6.0)	47	(38.0)	9	(11.0)	11	(15.3)	8	(11.0)	4	(5.8)		

G^2=7.22, df=5, p-value=.205 > .05

Table 142 shows a cluster calculated G^2 value of 7.22 with a p-value of .205 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of potatoes given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given potatoes by their parents/caregivers/guardians according to number of children in the family (parity) are the same.

Table 143

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Corn flakes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	141	(157.8)	60	(52.6)	10	(11.8)	36	(33.8)	34	(29.1)	37	(33.0)	21.33	.001
7 to 12	60	(43.2)	7	(14.4)	5	(3.2)	7	(9.2)	3	(7.9)	5	(9.0)		

G^2=21.33, df=5, p-value=.001 < .05

Table 143 shows a cluster calculated G^2 value of 21.33 with a p-value of .001 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of cornflakes given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given cornflakes by their parents/caregivers/guardians differed according to number of children (parity).

Table 144

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Golden morn

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	136	(142.1)	71	(73.8)	9	(11.0)	43	(40.8)	33	(27.5)	26	(22.8)	11.23	.047
7 to 12	45	(38.9)	23	(20.2)	5	(3.0)	9	(11.2)	2	(7.5)	3	(6.2)		

G^2=11.23, df=5, p-value=.047 < .05

Table 144 shows a cluster calculated G^2 value of 11.23 with a p-value of .047 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of golden morn given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given golden morn by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 145

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Cerelac

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	222	(225.3)	34	(31.4)	9	(11.8)	24	(20.4)	15	(16.5)	14	(12.6)	8.60	.126
7 to 12	65	(61.7)	6	(8.6)	6	(3.2)	2	(5.6)	6	(4.5)	2	(3.4)		

G^2=8.60, df=5, p-value=.126 > .05

Table 145 shows a cluster calculated G^2 value of 8.60 with a p-value of .126 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of cerelac given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given cerelac by their parents/caregivers/guardians differed according to number of children in the family (parity).

Table 146

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Frisocream

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	229	(232.4)	36	(33.0)	6	(7.1)	16	(15.7)	18	(18.8)	13	(11.0)	4.18	.524
7 to 12	67	(63.6)	6	(9.0)	3	(1.9)	4	(4.3)	6	(5.2)	1	(3.0)		

G^2=4.18, df=5, p-value=.524 > .05

Table 146 shows a cluster calculated G^2 value of 4.18 with a p-value of .524 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of frisocream given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given frisocream by their parents/caregivers/guardians according to number of children in the family (parity) are the same.

Table 147

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Maize(pap)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	29	(27.5)	26	(22.8)	23	(25.9)	159	(164.9)	42	(40.8)	39	(36.1)	6.25	.283
7 to 12	6	(7.5)	3	(6.2)	10	(7.1)	51	(45.1)	10	(11.2)	7	(9.9)		

G^2=6.25, df=5, p-value=.283 > .05

Table 147 shows a cluster calculated G^2 value of 6.25 with a p-value of .283 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of maize(pap) given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given maize(pap) by their parents/caregivers/guardians according to number of children in the family(parity) are the same.

Table 148

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family

Cereal and products

Millet(Jero)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	220	(219.1)	34	(34.5)	11	(12.6)	22	(22.0)	19	(19.6)	12	(10.2)	2.52	.773
7 to 12	59	(59.9)	10	(9.5)	5	(3.4)	6	(6.0)	6	(5.4)	1	(2.8)		

G^2=5.52, df=5, p-value=.773 > .05

Table 148 shows a cluster calculated G^2 value of 2.52 with a p-value of .773 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of millet(jero) given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given millet(jero) by their parents/caregivers/guardians according the number of children in the family(parity) are the same.

Table 149

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Sorghum(Dawa)

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	98	(94.2)	114	(123.3)	13	(12.6)	47	(47.1)	31	(28.3)	15	(12.6)	7.46	.189
7 to 12	22	(25.8)	43	(33.7)	3	(3.4)	13	(12.9)	5	(7.7)	1	(3.4)		

G^2=7.46, df=5, p-value=.189 > .05

Table 149 shows a cluster calculated G^2 value of 7.46 with a p-value of .189 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of sorghum given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given sorghum by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 150

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Wheat and wheat product

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	126	(125.6)	117	(117.8)	16	(17.3)	29	(30.6)	15	(14.1)	15	(12.6)	3.32	.652
7 to 12	34	(34.4)	33	(32.2)	6	(4.7)	10	(8.4)	3	(3.9)	1	(3.4)		

G^2=3.32, df=5, p-value=.652 > .05

Table 150 shows a cluster calculated G^2 value of 3.32 with a p-value of .652 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of wheat and wheat product given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given wheat and wheat product by their parents/caregivers/guardians according to the number of children in the family(parity).

Table 151

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Semovita

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	56	(52.6)	150	(156.3)	17	(21.2)	41	(36.9)	27	(24.3)	27	(26.7)	9.54	.089
7 to 12	11	(14.4)	49	(42.7)	10	(5.8)	6	(10.1)	4	(6.7)	7	(7.3)		

G^2=9.54, df=5, p-value=.089 > .05

Table 151 shows a cluster calculated G^2 value of 9.54 with a p-value of .089 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of semovita given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given semovita by their parents/caregivers/guardians according to the number of children in the family(parity), are the same.

Table 152

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Cereal and products

Indomie

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	16	(14.1)	36	(33.8)	43	(49.5)	74	(73.0)	29	(29.8)	120	(117.8)	6.14	.293
7 to 12	2	(3.9)	7	(9.2)	20	(13.5)	19	(20.0)	9	(8.2)	30	(32.2)		

G^2=6.14, df=5, p-value=.293 > .05

Table 152 shows a cluster calculated G^2 value of 6.14 with a p-value of .293 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of indomie given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given indomie by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 153

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Cereal and products

Spaghetti

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	27	(27.5)	44	(39.3)	19	(19.6)	90	(86.4)	109	(118.6)	29	(26.7)	8.02	.155
7 to 12	8	(7.5)	6	(10.7)	6	(5.4)	20	(23.6)	42	(32.4)	5	(7.3)		

G^2=8.02, df=5, p-value=.155 > .05

Table 153 shows a cluster calculated G^2 value of 8.02 with a p-value of .155 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of spaghetti given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given spaghetti by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 154

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Nuts and Legumes

Groundnut

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	7	(6.3)	32	(29.1)	75	(90.3)	98	(95.8)	48	(42.4)	58	(54.2)	18.77	.002
7 to 12	1	(1.7)	5	(7.9)	40	(24.7)	24	(26.2)	6	(11.6)	11	(14.8)		

G^2=18.77, df=5, p-value=.002 < .05

Table 154 shows a cluster calculated G^2 value of 18.77 with a p-value of .002 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of groundnut given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given groundnut by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 155

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Nuts and Legumes

Beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	9	(7.1)	13	(11.0)	21	(22.0)	96	(95.0)	151	(153.9)	28	(29.1)	4.85	.434
7 to 12	0	(1.9)	1	(3.0)	7	(6.0)	25	(26.0)	45	(42.1)	9	(7.9)		

G^2=4.85, df=5, p-value=.434 > .05

Table 155 shows a cluster calculated G^2 value of 4.85 with a p-value of .434 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of beans given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given beans by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 156

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Nuts and Legumes

Soy beans

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	79	(74.6)	115	(128.0)	7	(6.3)	36	(36.1)	43	(40.0)	38	(33.0)	12.31	.031
7 to 12	16	(20.4)	48	(35.0)	1	(1.7)	10	(9.9)	8	(11.0)	4	(9.0)		

G^2=12.31, df=5, p-value=.031 < .05

Table 156 shows a cluster calculated G^2 value of 12.31 with a p-value of .031 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of soy beans given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given soy beans by their parents/caregivers/guardians differed according to yhe number of children in the family (parity).

Table 157

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family Nuts and Legumes

Moi-moi

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	11	(10.2)	38	(36.9)	14	(15.7)	44	(47.9)	180	(179.0)	31	(28.3)	4.03	.545
7 to 12	2	(2.8)	9	(10.1)	6	(4.3)	17	(13.1)	48	(49.0)	5	(7.7)		

G^2=4.03, df=5, p-value=.545 > .05

Table 157 shows a cluster calculated G^2 value of 4.03 with a p-value of .545 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of moi-moi given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given moi-moi by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 158

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Nuts and Legumes

Bean cake

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	41	(41.6)	31	(26.7)	19	(21.2)	165	(170.4)	35	(35.3)	27	(22.8)	8.80	.117
7 to 12	12	(11.4)	3	(7.3)	8	(5.8)	52	(46.6)	10	(9.7)	2	(6.2)		

G^2=8.80, df=5, p-value=.117 > .05

Table 158 shows a cluster calculated G^2 value of 8.80 with a p-value of .117 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of bean cake given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given bean cake by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 159

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Fish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	13	(11.8)	15	(14.1)	110	(123.3)	60	(51.8)	29	(25.9)	91	(91.1)	15.21	.009
7 to 12	2	(3.2)	3	(3.9)	47	(33.7)	6	(14.2)	4	(7.1)	25	(24.9)		

χ^2=15.21, df=5, p-value=.009 < .05

Table 159 shows a cluster calculated χ^2 value of 15.21 with a p-value of .009 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of fish given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given fish by their parents/caregivers/guardians differed according the number of children in the family(parity).

Table 160

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food given to PSC Based on the Number of Children in the family. Animal/animal product

Chicken

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	10	(9.4)	184	(187.7)	19	(18.1)	26	(30.6)	44	(40.0)	35	(32.2)	6.93	.226
7 to 12	2	(2.6)	55	(51.3)	4	(4.9)	13	(8.4)	7	(11.0)	6	(8.8)		

$G^2=6.93$, df=5, p-value=.226 > .05

Table 160 shows a cluster calculated G^2 value of 6.93 with a p-value of .226 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of chicken given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given chicken by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 161

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Beef

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	44	(40.0)	35	(34.5)	73	(80.9)	99	(98.1)	31	(29.8)	36	(34.5)	5.95	.312
7 to 12	7	(11.0)	9	(9.5)	30	(22.1)	26	(26.9)	7	(8.2)	8	(9.5)		

G^2=5.95, df=5, p-value=.312 > .05

Table 161 shows a cluster calculated G^2 value of 5.95 with a p-value of .312 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of beef given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given beef by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 162

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Goat meat

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	35	(33.0)	73	(69.1)	71	(73.8)	86	(91.1)	28	(28.3)	25	(22.8)	4.45	.487
7 to 12	7	(9.0)	15	(18.9)	23	(20.2)	30	(24.9)	8	(7.7)	4	(6.2)		

G^2=4.45, df=5, p-value=.487 > .05

Table 162 shows a cluster calculated G^2 value of 4.45 with a p-value of .487 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of goat meat given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given goat meat by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 163

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Animal/animal product

Liver

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	92	(89.5)	144	(154.7)	17	(15.7)	21	(19.6)	29	(25.9)	15	(12.6)	8.61	.125
7 to 12	22	(24.5)	53	(42.3)	3	(4.3)	4	(5.4)	4	(7.1)	1	(3.4)		

G^2=8.61, df=5, p-value=.125 > .05

Table 163 shows a cluster calculated G^2 value of 8.61 with a p-value of .125 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of liver given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given liver by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 164

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Kidney

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	194	(197.9)	62	(66.7)	10	(7.9)	17	(16.5)	17	(14.1)	18	(14.9)	10.40	.065
7 to 12	58	(54.1)	23	(18.3)	0	(2.1)	4	(4.5)	1	(3.9)	1	(4.1)		

G^2=10.40, df=5, p-value=.065 > .05

Table 164 shows a cluster calculated G^2 value of 10.40 with a p-value of .065 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of kidney given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given kidney by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 165

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Crayfish

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	36	(31.4)	21	(18.1)	33	(44.0)	18	(20.4)	26	(22.8)	184	(181.4)	21.74	.001
7 to 12	4	(8.6)	2	(4.9)	23	(12.0)	8	(5.6)	3	(6.2)	47	(49.6)		

G^2=21.74, df=5, p-value=.001 > .05

Table 165 shows a cluster calculated G^2 value of 21.74 with a p-value of .001 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of crayfish given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given crayfish by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 166

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Snail

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	145	(137.4)	114	(118.6)	13	(15.7)	11	(12.6)	17	(18.8)	18	(14.9)	9.65	.086
7 to 12	30	(37.6)	37	(32.4)	7	(4.3)	5	(3.4)	7	(5.2)	1	(4.1)		

G^2=9.65, df=5, p-value=.086 > .05

Table 166 shows a cluster calculated G^2 value of 9.65 with a p-value of .086 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of snail given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given snail by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 167

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Turkey

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	114	(115.4)	125	(121.7)	14	(15.7)	16	(18.8)	24	(22.8)	25	(23.6)	4.08	.538
7 to 12	33	(31.6)	30	(33.3)	6	(4.3)	8	(5.2)	5	(6.2)	5	(6.4)		

G^2=4.-08, df=5, p-value=.538 > .05

Table 167 shows a cluster calculated G^2 value of 4.08 with a p-value of .538 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of turkey given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given turkey by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 168

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Milk

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	16	(13.3)	26	(23.6)	23	(24.3)	117	(127.2)	25	(27.5)	111	(102.1)	12.46	.029
7 to 12	1	(3.7)	4	(6.4)	8	(6.7)	45	(34.8)	10	(7.5)	19	(27.9)		

G^2=12.46, df=5, p-value=.029 > .05

Table 168 shows a cluster calculated G^2 value of 12.46 with a p-value of .029 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of milk given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given milk by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 169

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Yoghurt

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	35	(31.4)	53	(51.0)	17	(15.7)	111	(117.8)	54	(60.5)	48	(41.6)	12.35	.030
7 to 12	5	(8.6)	12	(14.0)	3	(4.3)	39	(32.2)	23	(16.5)	5	(11.4)		

G^2=12.35, df=5, p-value=.030 > .05

Table 169 shows a cluster calculated G^2 value of 12.35 with a p-value of .030 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of yoghurt given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given yoghurt by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 170

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Animal/animal product

Cheese

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	193	(198.7)	52	(51.0)	7	(5.5)	21	(21.2)	19	(19.6)	26	(22.0)	6.26	.281
7 to 12	60	(54.3)	13	(14.0)	0	(1.5)	6	(5.8)	6	(5.4)	2	(6.0)		

G^2=6.26, df=5, p-value=.281 > .05

Table 170 shows a cluster calculated G^2 value of 6.26 with a p-value of .281 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of cheese given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given cheese by their parents/caregivers/guardians according to the number of children in the family are the same.

Table 171

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Fats and oil

Palm oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	13	(11.8)	10	(8.6)	41	(51.8)	17	(18.1)	27	(25.1)	210	(202.6)	14.32	.014
7 to 12	2	(3.2)	1	(2.4)	25	(14.2)	6	(4.9)	5	(6.9)	48	(55.4)		

G^2=14.32, df=5, p-value=.014 > .05

Table 171 shows a cluster calculated $ɢ^2$ value of 14.32 with a p-value of .014 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of palm oil given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given palm oil by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 172

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fats and oil

Groundnut oil

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal χ^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	28	(25.1)	18	(14.9)	18	(18.1)	153	(164.9)	35	(32.2)	66	(62.8)	10.38	.065
7 to 12	4	(6.9)	1	(4.1)	5	(4.9)	57	(45.1)	6	(8.8)	14	(17.2)		

χ^2=10.38, df=5, p-value=.065 > .05

Table 172 shows a cluster calculated χ^2 value of 10.38 with a p-value of .065 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of groundnut oil given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given groundnut oil by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 173

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Fats and oil

Margarine

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	101	(109.9)	51	(49.5)	23	(22.8)	83	(84.8)	35	(30.6)	25	(20.4)	11.49	.042
7 to 12	39	(30.1)	12	(13.5)	6	(6.2)	25	(23.2)	4	(8.4)	1	(5.6)		

G^2=11.49, df=5, p-value=.042 > .05

Table 173 shows a cluster calculated G^2 value of 11.49 with a p-value of .042 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of margarine given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given margarine by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 174

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fats and oil

Butter

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	37	(33.0)	59	(54.2)	25	(29.1)	124	(134.3)	33	(33.0)	40	(34.5)	14.57	.012
7 to 12	5	(9.0)	10	(14.8)	12	(7.9)	47	(36.7)	9	(9.0)	4	(9.5)		

G^2=14.57, df=5, p-value=.012 > .05

Table 174 shows a cluster calculated G^2 value of 14.57 with a p-value of .012 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of butter given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given butter by their parents/caregivers/guardians differed according to the number of children in the family(parity).

Table 175

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Dark green vegetable

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	34	(30.6)	15	(12.6)	118	(128.0)	59	(58.9)	35	(33.8)	57	(54.2)	8.46	.133
7 to 12	5	(8.4)	1	(3.4)	45	(53.0)	16	(16.1)	8	(9.2)	12	(14.8)		

G^2=8.46, df=5, p-value=.133 > .05

Table 175 shows a cluster calculated G^2 value of 8.46 with a p-value of .133 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of dark green vegetable given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given dark green vegetable by their parents/caregivers/guardians according to the number of children in the family(parity) are the same.

Table 176

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Vegetable

Tomatoes

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	23	(18.8)	14	(11.8)	22	(24.3)	171	(178.2)	44	(42.4)	44	(42.4)	9.20	.102
7 to 12	1	(5.2)	1	(3.2)	9	(6.7)	56	(48.8)	10	(11.6)	10	(11.6)		

G^2=9.20, df=5, p-value=.102 > .05

Table 176 shows a cluster calculated G^2 value of 9.20 with a p-value of .102 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of tonatoes given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given tomatoes by their parents/caregivers/guardians according to the number of children in the family(parity) are the same.

Table 177

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Okro

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	21	(18.1)	20	(19.6)	21	(22.0)	182	(184.5)	46	(46.3)	28	(27.5)	2.68	.749
7 to 12	2	(4.9)	5	(5.4)	7	(6.0)	53	(50.5)	13	(12.7)	7	(7.5)		

G^2=2.68, df=5, p-value=.749 > .05

Table 177 shows a cluster calculated G^2 value of 2.68 with a p-value of .749 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of okro given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given okro by their parents/caregivers/guardians according to the number of children in the family(parity) are the same.

Table 178

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Garden egg

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	13	(11.0)	49	(46.3)	19	(22.0)	175	(180.6)	32	(29.8)	30	(28.3)	6.34	.274
7 to 12	1	(3.0)	10	(12.7)	9	(6.0)	55	(49.4)	6	(8.2)	6	(7.7)		

G^2=6.34, df=5, p-value=.274 > .05

Table 178 shows a cluster calculated G^2 value of 6.34 with a p-value of .274 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of garden egg given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given garden egg by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 179

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Cabbage

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	44	(41.6)	137	(149.2)	26	(25.9)	55	(52.6)	29	(25.9)	27	(22.8)	11.15	.049
7 to 12	9	(11.4)	53	(40.8)	7	(7.1)	12	(14.4)	4	(7.1)	2	(6.2)		

G^2=11.15, df=5, p-value=.049 > .05

Table 179 shows a cluster calculated G^2 value of 11.15 with a p-value of .049 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of cabbage given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given cabbage by their parents/caregivers/guardians differed according to the number of children in the family (parity)

Table 180

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Carrot

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	19	(20.4)	58	(53.4)	95	(109.1)	85	(80.1)	30	(28.3)	31	(26.7)	15.96	.007
7 to 12	7	(5.6)	10	(14.6)	44	(29.9)	17	(21.9)	6	(7.7)	3	(7.3)		

$ɢ^2$=15.96, df=5, p-value=.007 < .05

Table 180 shows a cluster calculated $ɢ^2$ value of 15.96 with a p-value of .007 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of carrot given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given carrot by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 181

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Vegetable

Lettuce

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	63	(58.1)	141	(147.6)	29	(29.1)	45	(44.8)	27	(26.7)	13	(11.8)	3.91	.562
7 to 12	11	(15.9)	47	(40.4)	8	(7.9)	12	(12.2)	7	(7.3)	2	(3.2)		

G^2=3.91, df=5, p-value=.562 > .05

Table 181 shows a cluster calculated G^2 value of 3.91 with a p-value of .562 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of lettuce given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given lettuce by their parents/caregivers/guardians according to number of children in the family (parity) are the same.

Table 182

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family.

Vegetable

Bitter leaf

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal $ɢ^2$	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	40	(40.8)	50	(43.2)	19	(22.0)	45	(41.6)	148	(156.3)	16	(14.1)	11.43	.043
7 to 12	12	(11.2)	5	(11.8)	9	(6.0)	8	(11.4)	51	(42.7)	2	(3.9)		

G^2=11.43, df=5, p-value=.043 > .05

Table 182 shows a cluster calculated $ɢ^2$ value of 11.43 with a p-value of .043 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of bitter leaf given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given bitter leaf by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 183

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Mango

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	3	(2.4)	48	(41.6)	44	(58.1)	62	(62.0)	25	(25.1)	136	(128.8)	23.21	.000
7 to 12	0	(.6)	5	(11.4)	30	(15.9)	17	(17.0)	7	(6.9)	28	(35.2)		

G^2=23.21, df=5, p-value=.000 < .05

Table 183 shows a cluster calculated G^2 value of 23.21 with a p-value of .000 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of mango given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given mango by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 184

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Guava

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	16	(14.1)	187	(192.4)	10	(13.3)	36	(37.7)	31	(27.5)	38	(33.0)	11.77	.038
7 to 12	2	(3.9)	58	(52.6)	7	(3.7)	12	(10.3)	4	(7.5)	4	(9.0)		

G^2=11.77, df=5, p-value=.038 > .05

Table 184 shows a cluster calculated G^2 value of 11.77 with a p-value of .038 which is less than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore rejected. This implies that the proportion of guava given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given guava by their parents/caregivers/guardians differed according to the number of children in the family (parity).

Table 185

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Avocado pear

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	40	(39.3)	165	(165.7)	18	(18.8)	40	(45.5)	29	(25.1)	27	(23.6)	8.58	.127
7 to 12	10	(10.7)	47	(45.3)	6	(5.2)	18	(12.5)	3	(6.9)	3	(6.4)		

$G^2=8.58$, df=5, p-value=.127 > .05

Table 185 shows a cluster calculated G^2 value of 8.58 with a p-value of .127 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of avocado pear given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given avocado pear by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 186

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Orange

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	11	(10.2)	33	(30.6)	27	(27.5)	117	(129.6)	29	(26.7)	101	(93.4)	10.63	.059
7 to 12	2	(2.8)	6	(8.4)	8	(7.5)	48	(35.4)	5	(7.3)	18	(25.6)		

G^2=10.63, df=5, p-value=.059 > .05

Table 186 shows a cluster calculated G^2 value of 10.63 with a p-value of .059 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of orange given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given orange by their parents/caregivers/guardians according to the number of children in the family(parity) are the same.

Table 187

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Pina-apple

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	17	(18.8)	38	(37.7)	15	(14.9)	148	(152.3)	39	(40.8)	61	(53.4)	6.85	.232
7 to 12	7	(5.2)	10	(10.3)	4	(4.1)	46	(41.7)	13	(11.2)	7	(14.6)		

G^2=6.85, df=5, p-value=.232 > .05

Table 187 shows a cluster calculated G^2 value of 6.85 with a p-value of .232 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of pineapple given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given pineapple by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 188

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Water melon

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	17	(14.1)	46	(44.8)	29	(31.4)	139	(145.3)	33	(33.0)	54	(49.5)	6.92	.227
7 to 12	1	(3.9)	11	(12.2)	11	(8.6)	46	(39.7)	9	(9.0)	9	(13.5)		

G^2=6.92, df=5, p-value=.227 > .05

Table 188 shows a cluster calculated G^2 value of 6.92 with a p-value of .227 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of water melon given to the primary school children occasionally,4-6times a week,2-3times a week, once a week, daily and those that were never given water melon by their parents/caregivers/guardians according to th number of children in the family(parity are the same.

Table 189

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Pawpaw

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	9	(7.9)	40	(37.7)	18	(18.8)	167	(177.5)	44	(38.5)	40	(37.7)	8.84	.116
7 to 12	1	(2.1)	8	(10.3)	6	(5.2)	59	(48.5)	5	(10.5)	8	(10.3)		

G^2=8.84, df=5, p-value=.116 > .05

Table 189 shows a cluster calculated G^2 value of 8.84 with a p-value of .116 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of pawpaw given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given pawpaw by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Table 190

Result of Chi-Square Analysis Testing the Null Hypothesis of no Difference in the Proportion of Food Given to PSC Based on the Number of Children in the family. Fruits

Banana

Descriptive parameter	Never		Occasionally		4-6timesk		2-3times/wk		Once/wk		Daily		Cal G^2	p-value
	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)	O	(E)		
1 to 6	6	(5.5)	49	(47.1)	30	(32.2)	155	(157.8)	32	(33.0)	46	(42.4)	3.06	.691
7 to 12	1	(1.5)	11	(12.9)	11	(8.8)	46	(43.2)	10	(9.0)	8	(11.8)		

G^2=3.06, df=5, p-value=.691 > .05

Table 190 shows a cluster calculated G^2 value of 3.06 with a p-value of .691 which is greater than .05 level of significance at 5 degrees of freedom. The null hypothesis of no significance difference in the food given to the child and number of children in the family was therefore accepted. This implies that the proportion of banana given to the primary school children occasionally, 4-6times a week, 2-3times a week, once a week, daily and those that were never given banana by their parents/caregivers/guardians according to the number of children in the family (parity) are the same.

Summary of Major Findings

Based on the analysis of data, the major findings of the study are hereby summarized below.

1. Majority of PSC was normal (80.0%) with regards to height-for-age (stunting) (Table 1.)
2. Majority of PSC was normal (93.6%) regarding weight-for-height (wasting) (Table 2.)
3. Majority of PSC was normal (93.1%) with regard to weight-for-age (underweight) (Table 3.)
4. Majority of male PSC was normal (83.2%) regarding height-for-age (stunting) according to gender. (Table 4.)
5. Majority of female PSC was normal (94.5%) as regards weight-for-height (wasting) according to gender. (Table 5.)
6. Majority of female PSC was normal (93.6%) regarding weight-for-age (underweight) according to gender. (Table 6.)
7. Majority of rural PSC was normal (89.6%) regarding height-for-age (stunting) according to location. (Table 7.)
8. Majority of rural PSC was normal (95.7%) regarding weight-for-height (wasting) according to location (Table 8.)
9. Majority of rural PSC was normal (95.1%) regarding weight-for-age (underweight) according to location. (Table 9.)
10. Majority of PSC of age group 6.0-6.9 to 9.0-9.9 years was normal (84.4%) regarding height-for-age (stunting) (Table 10.)
11. Majority of PSC of age group 6.0-6.9 to 9.0-9.9 years was normal (94.6%) with regard to weight-for-height. (wasting) (Table 11.)
12. Majority of PSC of age group 6.0-6.9 to 9.0-9.9 years and age group 10.0-10.9 to 13.0-13.9 years was normal (93.2%) regarding weight-for-age(underweight).(Table 12.)
13. Higher proportions of root and tuber foods (garri = daily (34.8%), plantain = occasionally (39.8%), yam = 2-3times/wk (28.9%), cocoyam = occasionally

(41.7%), fufu = daily (23.2%) and potatoes = occasionally (43.7%).were given to PSC. (Table 13.)

14. Higher proportions of cereal and products foods(corn flakes = never (49.6%),goldenmorn=never(44.7%),cerelac=never(70.9%),frisocream = never (73.1%), maize(pap) = 2-3times/wk (51.9%), millet(jero) = never(68.9%), sorghum = occasionally (38.8%),wheat and wheat product = never(39.5%), semovita = occasionally(49.1%), indomie = daily(37.0%) and spaghetti = once/wk (37.3%) were given to PSC. (Table 14.)
15. Higher proportions of nuts and legumes foods (groundnut = 2-3times/wk (30.1%), beans = once/wk (48.4%), soybeans = occasionally (40.2%), moi-moi = once/wk (56.3%) and bean cake = 2-3times/wk (53.6%) were given to PSC (Table 15.)
16. Higher proportions of animal and animal products foods (fish = 4-6times/wk(38.8%),chicken = never(59.0%),beef = 2-3times/wk(30.9%),goat meat = 2-3times/wk(28.6%),liver = occasionally(48.6%), kidney = never (62.2%),crayfish = daily(57.0%), snail = never(43.2%),turkey = occasionally (38.3%),milk = 2-3times/wk(40.0%),yoghurt = 2-3times/wk(37.0%), and cheese = never(62.5%) were given to PSC (Table 16.)
17. Higher proportions of fats and oil foods (palm oil = daily (63.7%), groundnut oil = 2-3times/wk (51.9%), margarine=never (34.6%) and butter = 2-3times/wk (42.2%) were given to PSC (Table 17.)
18. Higher proportions of vegetable foods (dark green vegetable = 4-6times/wk (40.2%),tomatoes = 2-3times/wk(56.0%),okro = 2-3times/wk(58.0%),garden egg = 2-3times/wk(56.8%),cabbage = occasionally (46.9%),carrot = 4-6times/wk(34.3%),lettuce = occasionally(46.4%) and bitter leaf = once/wk (49.1%) were given to PSC (Table 18.)
19. Higher proportions of fruits (mango = daily(40.5%),guava = occasionally(60.5%), avocado pear = occasionally(52.1%),orange = 2-3times/wk(40.7%),pineapple = 2-3times/wk(47.9%),water melon = 2-3times

(45.7%),pawpaw = 2-3times/wk(55.8%) and banana = 2-3times/wk (49.6%) were given to PSC (Table 19.)

20. Height-for-age (stunting) was the same for both male and female PSC with (p-value =.198 > .05) (Table 20.)
21. Weight-for-height (wasting) was the same for both male and female PSC with (p-value = .578 > .05) (Table 21.)
22. Weight-for-age (underweight) was the same for both male and female PSC with (p-value = .424 > .05) (Table 22.)
23. Height-for-age (stunting) differed significantly between urban and rural PSC with (p-value = .000 < .05) (Table 23.)
24. Weight-for-height (wasting) was the same for both urban and rural PSC with (p-value =.355 > .05) (Table 24.)
25. Weight-for-age (underweight) was the same for both urban and rural PSC with (p-value =.155 > .05) (Table 25.)
26. Height-for-age(stunting) differed significantly between PSC of age group 10.0-10.9 to13.0-13.9 years and 6.0-6.9 to 9.0-9.9years with (p-value =.026 < .05) (Table 26.)
27. Weight-for-height (wasting) was the same for both age group 10.0-10.9 to13.0-13.9years and 6.0-6.9 to 9.0-9.9years PSC with (p-value = .766 > .05) (Table 27.)
28. Weight-for-age(underweight) was the same for both age group 6.0-6.9 to 9.0-9.9years and 10.0-10.9 to13.0-13.9years PSC with (p-value = .836 > .05) (Table 28.)
29. The food (garri) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05) (Table 29.)
30. The food (plantain) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .004 < .05) (Table 30.)

31. The food (yam) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05) (Table 31.)
32. The food (cocoa yam) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05) (Table 32.)
33. The food (fufu) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05) (Table 33.)
34. The food (potatoes) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05) (Table 34.)
35. The proportion of food (cornflakes) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 35.)
36. The proportion of food (golden morn) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 36.)
37. The proportion of food (cerelac) given to PSC was the same according to Level of Education of Parents/Caregivers/Guardians with (p-value = .344 > .05). (Table 37.)
38. The proportion of food (frisocream) given to PSC was the same according to Level of Education of Parents/Caregivers/Guardians with (p-value = .063 > .05) (Table 38.)
39. The proportion of food (maize (pap)) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .002 < .05). (Table 39.)
40. The proportion of food (millet (jero)) given to PSC was the same according to Level of Education of Parents/Caregivers/Guardians with (p-value = .078 > .05). (Table 40.)

41. The proportion of food (sorghum (dawa) given to PSC was the same according to Level of Education of Parents/Caregivers/Guardians with (p-value = .010 > .05). (Table 41.)
42. The proportion of food (wheat and wheat products) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .002 < .05). (Table 42.)
43. The proportion of food (semovita) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05). (Table 43.)
44. The proportion of food (indomie) given to PSC was the same according to Level of Education of Parents/Caregivers/Guardians with (p-value = .190 > .05). (Table 44.)
45. The proportion of food (spaghetti) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 45.)
46. The proportion of food (groundnut) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 46.)
47. The proportion of food (beans) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 47.)
48. The proportion of food (soybeans) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .007 < .05). (Table 48.)
49. The proportion of food (moi-moi) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .015 < .05). (Table 49.)
50. The proportion of food (bean cake) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 50.)

51. The proportion of food (fish) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05). (Table 51.)
52. The proportion of food (chicken) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 52.)
53. The proportion of food (beef) given to PSC differed significantly according to Level of Education of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 53.)
54. The proportion of food (goat meat) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 54.)
55. The proportion of food (liver) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .034 < .05). (Table 55.)
56. The proportion of food (kidney) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .018 < .05). (Table 56.)
57. The proportion of food (crayfish) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 57.)
58. The proportion of food (snail) given to PSC was the same according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.234 > .05). (Table 58.)
59. The proportion of food (turkey) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .042 < .05). (Table 59.)
60. The proportion of food (milk) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 60.)

61. The proportion of food (yoghurt) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .004 < .05). (Table 61.)
62. The proportion of food (cheese) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .003 < .05). (Table 62.)
63. The proportion of food (palm oil) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value =.000 < .05). (Table 63.)
64. The proportion of food (groundnut oil) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 64.)
65. The proportion of food (margarine) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 65.)
66. The proportion of food (butter) given toPSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 66.)
67. The proportion of food (dark green vegetable) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05).(Table 67.)
68. The proportion of food (tomatoes) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 68.)
69. The proportion of food (okro) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 69.)
70. The proportion of food (garden egg) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 70.)

71. The proportion of food (cabbage) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 71.)
72. The proportion of food (carrot) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 72.)
73. The proportion of food (lettuce) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 73.)
74. The proportion of food (bitter leaf) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 74.)
75. The proportion of food (mango) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 75.)
76. The proportion of food (guava) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05).(Table 76.)
77. The proportion of food (avocado pear) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .006 < .05). (Table 77.)
78. The proportion of food (orange) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 78.)
79. The proportion of food (pine-apple) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 79.)
80. The proportion of food (water melon) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 80.)

81. The proportion of food (pawpaw) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 81.)
82. The proportion of food (banana) given to PSC differed significantly according to the Level of Education of Parents/Caregivers/Guardians with (p-value = .008< .05). (Table 82.)
83. The proportion of food (garri) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 83.)
84. The proportion of food (plantain) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 84.)
85. The proportion of food (yam) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 85.)
86. The proportion of food (cocoyam) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 86.)
87. The proportion of food (fufu) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 87.)
88. The proportion of food (potatoes) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 88.)
89. The proportion of food (cornflakes) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 89.)
90. The proportion of food (golden morn) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 90.)

91. The proportion of food (cerelac) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 91.)
92. The proportion of food (frisocream) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 92.)
93. The proportion of food (maize (pap)) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 93.)
94. The proportion of food (millet (jero)) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .002 < .05). (Table 94.)
95. The proportion of food (sorghum (dawa)) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .012 < .05). (Table 95.)
96. The proportion of food (wheat and wheat product) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 96.)
97. The proportion of food (semovita) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 97.)
98. The proportion of food (indomie) given to PSC was the same based on the income of Parents/Caregivers/Guardians with (p-value = .413 < .05). (Table 98.)
99. The proportion of food (spaghetti) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 99.)
100. The proportion of food (groundnut) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 100.)

101. The proportion of food (beans) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .003 < .05). (Table 101.)

102. The proportion of food (soy beans) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 102.)

103. The proportion of food (moi-moi) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 103.)

104. The proportion of food (bean cake) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 104.)

105. The proportion of food (fish) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 105.)

106. The proportion of food (chicken) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 106.)

107. The proportion of food (beef) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .004 < .05). (Table 107.)

108. The proportion of food (goat meat) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 108.)

109. The proportion of food (liver) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 109.)

110. The proportion of food (kidney) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .017 < .05). (Table 110.)

111. The proportion of food (crayfish) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 111.)
112. The proportion of food (snail) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .001 < .05). (Table 112.)
113. The proportion of food (turkey) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 113.)
114. The proportion of food (milk) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 114.)
115. The proportion of food (yoghurt) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 115.)
116. The proportion of food (cheese) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 116.)
117. The proportion of food (palm oil) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 117.)
118. The proportion of food (groundnut oil) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 118.)
119. The proportion of food (margarine) given to PSC was the same based on the income of Parents/Caregivers/Guardians with (p-value = .094 < .05). (Table 119.)
120. The proportion of food (butter) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 120.)

121. The proportion of food (dark green vegetable) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .003 < .05). (Table 121.)
122. The proportion of food (tomatoes) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 122.)
123. The proportion of food (okro) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 123.)
124. The proportion of food (garden egg) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 124.)
125. The proportion of food (cabbage) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 125.)
126. The proportion of food (carrot) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 126.)
127. The proportion of food (lettuce) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 127.)
128. The proportion of food (bitter leaf) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .011 < .05). (Table 128.)
129. The proportion of food (mango) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .022 < .05). (Table 129.)
130. The proportion of food (guava) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 130.)

131. The proportion of food (avocado pear) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 131.)
132. The proportion of food (orange) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 132.)
133. The proportion of food (pine-apple) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 133.)
134. The proportion of food (water melon) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 134.)
135. The proportion of food (pawpaw) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 135.)
136. The proportion of food (banana) given to PSC differed significantly based on the income of Parents/Caregivers/Guardians with (p-value = .000 < .05). (Table 136.)
137. The proportion of food (garri) given to PSC differed significantly based on the number of children in the family with (p-value = .001 < .05). (Table 137.)
138. The proportion of food (plantain) given to PSC was the same based on the number of children in the family with (p-value = .156 > .05). (Table 138.)
139. The proportion of food (yam) given to PSC differed significantly based on the number of children in the family with (p-value = .001 < .05). (Table 139.)
140. The proportion of food (cocoyam) given to PSC differed significantly based on the number of children in the family with (p-value = .000 < .05). (Table 140.)
141. The proportion of food (fufu) given to PSC differed significantly based on the number of children in the family with (p-value = .000 < .05). (Table 141.)
142. The proportion of food (potatoes) given to PSC was the same based on the number of children in the family with (p-value = .205 > .05). (Table 142.)

143. The proportion of food (cornflakes) given to PSC differed significantly based on the number of children in the family with (p-value = .001 < .05). (Table 143.)
144. The proportion of food (golden morn) given to PSC differed significantly based on the number of children in the family with (p-value = .047 < .05). (Table 144.)
145. The proportion of food (cerelac) given to PSC was the same based on the number of children in the family with (p-value = .126 > .05). (Table 145.)
146. The proportion of food (frisocream) given to PSC was the same based on the number of children in the family with (p-value = .524 > .05). (Table 146.)
147. The proportion of food (maize (pap)) given to PSC was the same based on the number of children in the family with (p-value = .283 > .05). (Table 147.)
148. The proportion of food (millet (jero)) given to PSC was the same based on the number of children in the family with (p-value = .773 > .05). (Table 148.)
149. The proportion of food (sorghum (dawa)) given to PSC was the same based on the number of children in the family with (p-value = .189 > .05). (Table 149.)
150. The proportion of food (wheat and wheat product) given to PSC was the same based on the number of children in the family with (p-value = .652 >.05). (Table 150.)
151. The proportion of food (semovita) given to PSC was the same based on the number of children in the family with (p-value = .089 > .05). (Table 151.)
152. The proportion of food (indomie) given to PSC was the same based on the number of children in the family with (p-value = .293 > .05). (Table 152.)
153. The proportion of food (spaghetti) given to PSC was the same based on the number of children in the family with (p-value = .155 > .05). (Table 153.)
154. The proportion of food (groundnut) given to PSC differed significantly based on the number of children in the family with (p-value = .002 < .05). (Table 154.)
155. The proportion of food (beans) given to PSC was the same based on the number of children in the family with (p-value = .434 > .05). (Table 155.)
156. The proportion of food (soy beans) given to PSC differed significantly based on the number of children in the family with (p-value = .031 < .05). (Table 156.)

157. The proportion of food (moi-moi) given to PSC was the same based on the number of children in the family with (p-value = .545 > .05). (Table 157.)
158. The proportion of food (bean cake) given to PSC was the same based on the number of children in the family with (p-value = .117 > .05). (Table 158.)
159. The proportion of food (fish) given to PSC differed significantly based on the number of children in the family with (p-value = .009 <.05). (Table 159.)
160. The proportion of food (chicken) given to PSC was the same based on the number of children in the family with (p-value = .226 > .05). (Table 160.)
161. The proportion of food (beef) given to PSC was the same based on the number of children in the family with (p-value = .312 > .05). (Table 161.)
162. The proportion of food (goat meat) given to PSC was the same based on the number of children in the family with (p-value = .487 > .05). (Table 162.)
163. The proportion of food (liver) given to PSC was the same based on the number of children in the family with (p-value = .125 > .05). (Table 163.)
164. The proportion of food (kidney) given to PSC was the same based on the number of children in the family with (p-value = .065 > .05). (Table 164.)
165. The proportion of food (crayfish) given to PSC differed significantly based on the number of children in the family with (p-value = .001 < .05). (Table 165.)
166. The proportion of food (snail) given to PSC was the same based on the number of children in the family with (p-value = .089 > .05). (Table 166.)
167. The proportion of food (turkey) given to PSC was the same based on the number of children in the family with (p-value = .538 > .05). (Table 167.)
168. The proportion of food (milk) given to PSC differed significantly based on the number of children in the family with (p-value = .029 < .05). (Table 168.)
169. The proportion of food (yoghurt) given to PSC differed significantly based on the number of children in the family with (p-value = .030 < .05). (Table 169.)
170. The proportion of food (cheese) given to PSC was the same based on the number of children in the family with (p-value = .281 > .05). (Table 170.)
171. The proportion of food (palm oil) given to PSC differed significantly based on the number of children in the family with (p-value = .014 < .05). (Table 171.)

172. The proportion of food (groundnut oil) given to PSC was the same based on the number of children in the family with (p-value = .065 > .05). (Table 172.)
173. The proportion of food (margarine) given to PSC differed significantly based on the number of children in the family with (p-value = .042 < .05). (Table 173.)
174. The proportion of food (butter) given to PSC differed significantly based on the number of children in the family with (p-value = .012 < .05). (Table 174.)
175. The proportion of food (dark green vegetable) given to PSC was the same based on the number of children in the family with (p-value = .133 > .05). (Table 175.)
176. The proportion of food (tomatoes) given to PSC was the same based on the number of children in the family with (p-value = .102 > .05). (Table 176.)
177. The proportion of food (okro) given to PSC was the same based on the number of children in the family with (p-value = .749 > .05). (Table 177.)
178. The proportion of food (garden egg) given to PSC was the same based on the number of children in the family with (p-value = .274 > .05). (Table 178.)
179. The proportion of food (cabbage) given to PSC differed significantly based on the number of children in the family with (p-value = .049 < .05). (Table 179.)
180. The proportion of food (carrot) given to PSC differed significantly based on the number of children in the family with (p-value = .007 <.05). (Table 180.)
181. The proportion of food (lettuce) given to PSC was the same based on the number of children in the family with (p-value = .562 > .05). (Table 181.)
182. The proportion of food (bitter leaf) given to PSC differed significantly based on the number of children in the family with (p-value = .043 < .05). (Table 182.)
183. The proportion of food (mango) given to PSC differed significantly based on the number of children in the family with (p-value = .000 < .05). (Table 183.)
184. The proportion of food (guava) given to PSC differed significantly based on the number of children in the family with (p-value = .038 < .05). (Table 184.)
185. The proportion of food (avocado pear) given to PSC was the same based on the number of children in the family with (p-value = .127 > .05). (Table 185.)

186. The proportion of food (orange) given to PSC was the same based on the number of children in the family with (p-value = .059 > .05). (Table 186.)
187. The proportion of food (pineapple) given to PSC was the same based on the number of children in the family with (p-value = .232 > .05). (Table 187.)
188. The proportion of food (water melon) given to PSC was the same based on the number of children in the family with (p-value = .227 > .05). (Table 188.)
189. The proportion of food (pawpaw) given to PSC was the same based on the number of children in the family with (p-value = .116 > .05). (Table 189.)
190. The proportion of food (banana) given to PSC was the same based on the number of children in the family with (p-value = .691 > .05). (Table 190.)

Discussion

The findings of the study are hereby discussed under the following headings;

1. Nutritional status of primary school children
2. Nutritional status of primary school children according to gender, location and age group
3. The proportion of food given to primary school children according to gender, location, age group.
4. The proportion of food given to primary school children according level of education, income of parents/guardian/caregiver and number of children in the family.

Nutritional status of primary school children.

The finding of the study in Table 1 reveals that majority of PSC was normal(80.0%) with regard to height-for-age(stunting).The findings in Table 2 also shows that majority of PSC was normal(93.6%) regarding weight-for-height(wasting),while Table 3 show that majority of PSC was normal(93.1%) with regard to weight-for-age(underweight).These findings were surprising.

These findings agree with that of Anuarzain, et al (2005) who conducted a research on nutritional status of school children which revealed that (1.2%) was underweight,(16.3%) was overweight,(6.3%) was obese and (76.3%) was normal.The implication of these findings were that majority of primary school children were normal.Probably malnutrition has been reduced drastically.The teachers should use their good offices and continue to educate and guide the school children on adequate diet to avoid reverts of their nutritional status

Nutritional status of primary school children according to gender, location and age group.

The findings in table 4 revealed that majority of male PSC was normal (83.2%) regarding height-for-age (stunting).Table 5 showed that majority of female PSC was normal (94.5%) as regards weight-for-height(wasting).Table 6 reveals that majority of female PSC was normal (93.6%) regarding weight-for-age (underweight) according to gender.These findings were surprising.It is in agreement with the findings of Meme, et al.(2010) who reported that nutritional status of girls was better than that of boys,although the difference was not statistically significant.From personal observation,male children grow taller than the female children and female children grows taller and at a point maintain their height and weight.The implication of these findings were that majority of male and female PSC were normal.The parents and teachers should continue to guide the male and female primary school children on the intake of food nutrients to maintain their height and weight.

The result in table 7 shows that majority of rural PSC was normal (89.6%) regarding height-for-age (stunting). Table 8 showed that majority of rural PSC was normal (95.7%) regarding weight-for-height (wasting). Table 9 revealed that majority of rural PSC was normal (95.1%) regarding weight-for-age (underweight) according to location.The results was suprising.These was in line with Oninla, et al.(2006) that mean nutritional indices (weight-for-age,weight-for-height and height-for-age) were found to be significantly lower among the rural pupils than urban pupils($p<0.001$ in each case).From personal observation,school children from urban area seems not to the same in height and weight of their urban primary school children.The implication was that primary school children in rural area were normal.Parents and teachers should persist to guide the rural primary school children to maintain their nutritional status.

Data in table 10 shows that majority of PSCof age group 6.0-6.9 to 9.0-9.9 years was normal (84.4%) regarding height-for-age(stunting).Table 11 revealed that majority of PSC, age group 6.0-6.9 to 9.0-9.9 years was normal(94.6%) with regard to weight-for-height(wasting). Table 12 revealed that majority of PSC of both age group 6.0-6.9 to 9.0-9.9 years and 10.0-10.9 to 13.0-13.9 years was normal (93.2%) as regards to weight-for-age (underweight).These were expected and was not in consonant with the finding of Oldewage and Egal(2010) on nutritional knowledge and nutritional status of primary school children in Qwa Qwa that the mean age of respondents was 11.2 years and they had deficient intakes of all the nutrients and about(53.1%) did not meet the estimated nutritional status.From personal observation.I found out that some parents are paying more attention as regard adequate diet given to the PSC of this age group(6.0-6.9 to9.0-9.9 years). The implication was that primary school children of age group 6.0-6.9 to 9.0-9.9years were normal. The parents/caregivers/guardians should steer these children in maintaining their nutritional status.

The proportion of food given to primary school children and differences in nutritional status according to gender, location and age group.

Table 13 revealed that higher proportions of root and tubers food were given to PSC, potatoes; occasionally (43.7%). Table 14 also revealed that higher proportions of cereal and cereal products food were given to PSC,maize(pap); 2-3times per week (51.9%).Table 15 shows that higher proportions of nuts and legume food were given to PSC, moi-moi; once per week (56.3%).

Table 16 revealed that higher proportions of animal and animal products food were given to PSC, chicken; occasionally (59.0%). Table 17 also revealed that higher proportions of fats and oil foods were given to PSC, palm oil; daily (63.7%).Table 18 showed that higher proportions of vegetable food were given to PSC, okro; 2-3times per week (58.0%). Table 19 also revealed that higher proportions of fruits were given to PSC, guava;occasionally(60.5%).The findings of study in (Table 13- 19) was suprising,perhaps was what led to their normal nutritional status.Kings and Burgess (1992) asserted that good nutrition requires a satisfactory diet capable of supporting

PSC in a state of good health and normal nutritional status.From observation some primary school children come to school with lunch pack full of junk foods like candy,gum,fried fast food and carbonated beverages that was thought,could cause malnutrition.This need commendation and continous teaching and implementation of nutrition education among primary school children in Enugu South Local Government Area.

The findings in Table 20 showed that height-for-age (stunting) was the same for both male and female PSC. The findings in Table 21 indicated that weight-for-height (wasting) was the same for both male and female PSC.The findings in Table 22 also revealed that weight-for-age (underweight) was the same for both male and female PSC.This was not expected. It contradicts the findings of Neelu et al. (2010) on nutritional status of primary school in Meerut.Wasting was found in (46.3% girls and 43.2% boys) of children and stunting was found (46.0% girls and 41.8% boys).This was in line with my observation that there are variation in height and weight between male and female school children.The implication was that both gender were malnourished.The parents/caregivers/guardians should give adequate diet to male and female PSC as to attain and maintain their normal nutritional status.

The findings in Table 23 showed that height-for-age(stunting) differed significantly between urban and rural primary school children.This was not surprise.The findings in Table 24 indicated that weight-for-height(wasting) was the same for both urban and rural primary school children.The findings in Table 25 shows that weight-for-age(underweight) was the same for both urban and rural primary school children.These findings were not expected and therefore suprising because it was not in agreement with Oninla et al (2006) who found out that underweight,wasting and stunting were (70.5%,17.8% &35.8%)respectively among PSC in the rural area while in the urban area they were(52.2%,15.9% & 19.8%)respectively.From my observation many of the PSC in the rural area have short stature and moderately thin compared to the urban PSC.The implication was that rural PSC were stunted,both rural and urban PSC were wasted and underweight.Therefore, eradication of malnutrition should be given high priority in the implementation of the ongoing primary health care programmes both in rural and urban location.

The findings in Table 26 indicated that height-for-age(stunting) differed significantly between PSC of age group 10.0-10.9 to 13.0-13.9years and 6.0-6.9 to9.0-9.9years.It was not surprising.The findings in Table 27 revealed that weight-for-height(wasting) was the same for both age groups of PSC.The findings in Table 28 also shows that weight-for-age(underweight) was the same for both age groups of PSC.This was surprising because it was not in agreement with Medhi et al (2006) who found out that prevalence of wasting,stunting and underweight was(21.2%,47.4% &51.7%) respectively among the children in the age group of 6-8 years; prevalence of stunting and underweight was (53.6% and 53.9%) respectively among the children in the age group of 9-14 years.I observed that between the age of 6-9 years children tends to grow rapidly and fatter compared to age of 10-13 years. The implication was that both age groups were wasted and underweight.These needs continous teaching and implementation of nutrition education among primary school children (6-13years) in Enugu South Local Government Area.

The proportion of food given to primary school children according level of education, income of parents/guardian/caregiver and number of children in the family.

The findings in Table 29 shows that the food (garri) given to the PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 30 showed that the food (plantain) given to the PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 31 showed that the food (yam) given to PSC differed significantly according to level of education of parents/caregivers/guardians.

The findings in Table 32 showed that the food (cocoyam) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 33 showed that the food (fufu) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 34 showed that the food (potatoes) given to PSC differed significantly according to level of education of parents/caregivers/guardians.These was expected and therefore not surprise.This agrees with the opinion of Mclaren et al(2011) that the more knowledge about nutrition the parents/caregiver/guardian have the better the nutritional status of their children.From my observation some parents who had no formal education feed their children with a particular food nutrients such as cassava,garri,yam without considering the quality of the food.The implication is that the children would become stunted.Effort should be directed towards the improvement of dietatry knowledge of parents/caregivers/guardians since it was hoped that it would have a positive impact of nutritional status of school children.

The findings in Table 35 revealed that the proportion food (cornflakes) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 36 showed that the proportion of food (golden morn) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 37 showed that the proportion of food (cerelac) given to PSC was the same according to level of education of parents/caregivers/guardians.Table 38 showed that the proportion of food (frisocream) given to PSC are the same according to level of education of parents/caregivers/guardians.The findings in Table 39 showed that the proportion of food (maize (pap) given to PSC differed significantly with according to level of education of parents/caregivers/guardians.The findings in Table 40 showed that the proportion of food (millet (jero) given to PSC was the same according to level of education of parents/caregivers/guardians.

The findings in Table 41 showed that the proportion of food (sorghum (dawa) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 42 showed that the proportion of food (wheat and wheat product) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 43 showed that the proportion of food (semovita) given to PSC differed significantly according to level of education of parents/caregivers/guardians.While the findings in Table 44 showed that the proportion of food (indomie) given to PSC are the same according to level of education of parents/caregivers/guardians.

The findings in Table 45 showed that the proportion of food (spaghetti) given to PSC differed significantly according to level of education of parents/caregivers/guardians.(Tables35, 36, 39, 42, 43&45) was not surprised while (Tables 37, 38, 40, &41) was not expected.It supports the findings of Mukherjee et al(2008) who found that prevalence of stunting(13.8%),wasting(6.79%) and undernutrition was as a result of motherôs educational level.I found out that some of these cereal food are preferred much more to others among these children which could cause wasting.Nutrition and health interventions are needed to eradicate this risk.

The findings in Table 46 showed that the proportion of food (groundnut) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 47 showed that the proportion of food (beans) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 48 reveals that the proportion of food (soyabeans) given to PSC differed significantly according to level of education of parents/caregivers/guardians.While the findings in Table 49 shows that the proportion of food (moi-moi) given to PSC differed significantly according to level of education of parents/caregivers/guardians.

The findings in Table 50 showed that the proportion of food (bean cake) given to PSC differed significantly according to level of education of parents/caregivers/guardians. (Tables46-50) was expected.This was in consonant with the result of Joshi et al (2011) who found out that there was highly significant association ($p<0.05$) of literacy and child nutrition.I observed that level of education of parents/caregivers/guardian was a factor on the proportions of nut and legumes food that were given to PSC that supposedly lead to underweight, stunting and wasting among some of these PSC. The solution would be nutrition education among the parents/caregivers/guardians.

The findings in Table 51 indicated that the proportion of food (fish) given to PSC differed significantly according to level of education of parents/caregivers/guardians. The findings in Table 52 revealed that the proportion of food (chicken) given to PSC differed significantly according to level of education of parents/caregivers/guardians. The findings in Table 53 shows that the proportion of food (beef) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 54 showed that the proportion of food (goat meat) given to PSC differed significantly with according to level of education of parents/caregivers/guardian.The findings in Table 55 showed that the proportion of food (liver) given to PSC differed significantly with according to level of education of parents/caregivers/guardians.

The findings in Table 56 indicated that the proportion of food (kidney) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 57 reveals that the proportion of food (crayfish) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 58 showed that the proportion of food (snail) given to PSC was the same according to level of education of parents/caregivers/guardians.While the findings in Table 59 shows that the proportion of food (turkey) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 60 revealed that the proportion of food (milk) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 61 showed that the proportion of food (yoghurt) given to PSC differed significantly with according to level of education of parents/caregivers/guardians.

The findings in Table 62 showed that the proportion of food (cheese) given to PSC differed significantly according to level of education of parents/caregivers/guardians.(Tables 51-62 except 58) was expected.These agrees with the findings of Akinsola(2006) that the major problem was the insufficient knowledge of how to plan and choose good food and when the diet is deficient in any diet for a long period disease can occur.I observed that as a result of ignorance some parents neglect the importance of certain animal and animal products food to groth of PSC.The implication is stunting among these children.The possible solution is nutrition education among the parents/caregivers/guardians.

The findings in Table 63 showed that the proportion of food (palm oil) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 64 showed that the proportion of food (groundnut oil) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 65 shows that the proportion of food (margarine) given to PSC differed significantly according to level of education of parents/caregivers/guardians.

The findings in Table 66 revealed that the proportion of food (butter) given to PSC differed significantly according to level of education of parents/caregivers/guardians. (Tables 63-66) was not a surprise. This was in line with the findings of Mbago and Namfua (1992) from a study of selected low-income urban areas in Tanzania that showed that mothers with secondary education were about 2.2 and 3.4 times more likely to have adequately nourished normal children than those with 5 to 8 and 0 to 4 years of schooling, respectively. Educational attainment is generally associated with improved socio-economic status and the implication is malnourished children. Improvement of the socio-economic status of the principal child caretakers, who are mostly mothers, could go a long way towards improving the nutritional status of children.

The findings in Table 67 showed that the proportion of food (dark green vegetable) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 68 indicated that the proportion of food (tomatoes) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 69 revealed that the proportion of food (okro) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 70 shows that the proportion of food (garden egg) given to PSC differed significantly with according to level of education of parents/caregivers/guardians.The findings in Table 71 reveals that the proportion of food (cabbage) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 72 showed that the proportion of food (carrot) given to PSC differed significantly according to level of education of parents/caregivers/guardians.

The findings in Table 73 indicates that the proportion of food (lettuce) given to PSC differed significantl according to level of education of parents/caregivers/guardians.While the findings in Table 74 shows that the proportion of food (bitter leaf) given to PSC differed significantly according to level of education of parents/caregivers/guardians. (Tables 67-74) was expected. These was in line with the findings of Ijarotimi et al (2007) that motherþs education is an asset for the childþs proper growth.Maternal education has been consistently shown to be critically important for child health, nutrition, and survival.Evidence from various countries indicates that knowledge and practices are key pathways. Educated women are likely to be more aware of nutrition, hygiene and health care. Notably, an African study found that recovery from malnutrition had a stronger association with the motherþs education.I observed that illiteracy had made some parents over look the importance of vegetable to childrenþs growth the implication is wasting.Hence the need for nutrition education among the parents/caregivers/guardians.

The finding in Table 75 revealed that the proportion of food (mango) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 76 indicated that the proportion of food (guava) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 77 showed that the proportion of food (avocado pear) given to PSC differed significantly according to level of education of parents/caregivers/guardians.The findings in Table 78 shows that the proportion of food (orange) given to PSC differed significantly according to level of education of parents/caregivers/guardians.Also the findings in Table 79 reveals that the proportion of food (pineapple) given to PSC differed significantly according to level of education of parents/caregivers/guardians.While the findings in Table 80 showed that the proportion of food (water melon) given to PSC differed significantly according to level of education of parents/caregivers/guardians.

The findings in Table 81 showed that the proportion of food (pawpaw) given to PSC differed significantly according to level of education of parents/caregivers/guardians.While the findings in Table 82 shows that the proportion of food (banana) given to PSC differed significantly according to level of education of parents/caregivers/guardians.(Tables 75-82) was not surprised.It was in line with the findings of Wardlaw and Kessel (2002) that the major nutrition-related problems of primary school children was identified as lack of parent education.The implication are stunting and wasting of children.Solutions offered included:nutrition education for parents,nutrition programs in school,advertising healthy food and teachers education.

The findings in Table 83 showed that the proportion of food (garri) given to PSC differed significantly based on the income of parents/caregivers/guardians.Table 84 revealed the proportion of food (plantain) given to PSC differed significantly based on the income of parents/caregivers/guardians.The findings in Table 85 reveals that the proportion of food (yam) given to PSC differed significantly based on the income of parents/caregivers/guardians.The findings in Table 86 indicated that the proportion of food (cocoyam) given to PSC differed significantly based on the income of parents/caregivers/guardians.Also the findings in Table 87 revealed that the proportion of food (fufu) given to PSC differed significantly based on the income of parents/caregivers/guardians.

The findings in Table 88 shows that the proportion of food (potatoes) given to PSC differed significantly based on the income of parents/caregivers/guardians.(Tables 83-88) These agrees with the findings of Cur et al(2006) that stunting,underweight and wasting were found as (5.7%,4.6% and 1.0%) respectively and there was significant relationships with family monthly income.From experience parents may have knowledge of adequate diet but insufficient income poses a challenge,the implication are stunting,wasting and underweight of school children.Perhaps an environment which is conducive to better health and nutritional status,would pave way for that.

The findings inTable 89 revealed that the proportion of food (cornflakes) given to PSC differed significantly based on the income of parents/caregivers/guardians.The findings in Table 90 indicated that the proportion of food (golden morn) given to PSC differed significantly based on the income of parents/caregivers/guardians.The findings in Table 91 reveals that the proportion of food (cerelac) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 92 showed that the proportion of food (frisocream) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 93 shows that the proportion of food (maize (pap) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 94 reveals that the proportion of food (millet (jero) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 95 revealed that the proportion of food (sorghum (dawa) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findings in Table 96 revealed that the proportion of food (wheat and wheat product) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 97 shows that the proportion of food (semovita) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 98 revealed that the proportion of food (indomie) given to PSC was the same based on the income of parents/caregiver/guardians.While the findings in Table 99 indicated that the proportion of food (spaghetti) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in (Tables 89-99 except 98) was expected and was in line with the findings of Lucas and Gill(2003) that household food shortages may be temporary,seasonal or persistent and caused by low income.From experience family income poses a serious challenge to adequate diet.Which may be a factor leading to underweight, stunting and wasting.Effective interventions can be implemented to alleviate and consequently to eliminate the nutritional problems among these children.

The findings in Table 100 indicated that the proportion of food (groundnut) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 101 revealed that the proportion of food (beans) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 102 showed that the proportion of food (soybeans) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findings in Table 103 indicated that the proportion of food (moi-moi) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 104 reveals that the proportion food (bean cake) given to PSC differed significantly based on the income of parents/caregiver/guardians.The results in (Tables100-104) was not surprise.Similar results have been reported by Kumkum (2007).The result showed that there was a massive variation in prevalence rates of under-nutrtion between low and high income groups.Normal children were more in well-to-do families than in those with poor socio economic status.The implication are stunting, wasting and underweight of PSC.Effective interventions can be implemented to alleviate and consequently to eliminate the health and nutritional problems among these children.

The findings in 105 revealed that the proportion of food (fish) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 106 showed that the proportion of food (chicken) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findings in Table 107 indicated that the proportion of food (beef) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 108 reveals that the proportion of food (goatmeat) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 109 showed that the proportion of food (liver) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 110 indicated that the proportion of food (kidney) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 111 revealed that the proportion of food (crayfish) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findings in Table 112 reveals that the proportion of food (snail) given to PSC differed significantlybased on the income of parents/caregiver/guardians.The findings in Table

113 shows that the proportion of food (turkey) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 114 revealed that the proportion of food (milk) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 115 indicated that the proportion of food (yoghurt) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 116 revealed that the proportion of food (cheese) given to PSC differed significantly based on the income of parents/caregiver/guardians.(Tables 105-116) was expected,It was in line with Qureshi(2010) who opined that in some families money is used for the necessities of life other than food,for this reason the cash available for food may be reduced.From experience family income may be diverted to unforeseen emergencies other than food.These could predisposed some of the children to stunting,wasting and underweight.Hence the need for nutrition assistance for the children of those parents/caregiver/guardians.

The findings in Table 117 indicated that the proportion of food (palm oil) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 118 revealed that the proportion of food (groundnut oil) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 119 showed that the proportion of food (margarine) given to PSC was the same based on the income of parents/caregiver/guardians.While the findings in Table 120 revealed that the proportion of food (butter) given to PSC differed significantly based on the income of parents/caregiver/guardians.(Tables 117-120 except 119) were not surprised.This finding agrees with other findings on the prevalence of stunting among school children from low income households in less developed countries which indicate that shortness-for-age (stunting) is a common nutritional problem among these school children of low income household (Shariff *et al.*, 2000).From experience and observation children could go to school without eating any food due to lack of money to buy food, consequently would lead to stunting, wasting and underweight of some PSC. There is need for the ministry of education and ministry of health to adopt a more intensive approach to address nutrition issues and assistance to the children.

The findings in Table 121 showed that the proportion of food (darkgreen vegetable) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 122 revealed that the proportion of food (tomatoes) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findings in Table 123 indicated that the proportion of food (okro) given to PSC differed significantly with based on the income of parents/caregiver/guardians.The findings in Table 124 reveals that the proportion of food (garden egg) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 125 indicated that the proportion of food (cabbage) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 126 revealed that the proportion of food (carrot) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 127 reveals that the proportion of food (lettuce) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 128 showed that the proportion of food (bitter leaf) given to PSC differed significantly with based on the income of parents/caregiver/guardians.Data from (Tables 121-128) was expected.It corresponds with the findings of Ajao, Ojofeitimi, Adebayo, Fatusi and Afolabi(2010) that the higher prevalence of malnutrition in this study could result from the fact that the sample was drawn from a population of Nigeria with low economic resources. The one variable pertaining to food insecurity found to be significantly ($p<0.05$) associated with child stunting have children eating less than they desired because of insufficient finances.From experience and interaction with the children, they eat junks to quench hunger due to insufficient money, that could predisposed some children to wasting and stunting.Effective nutrition intervention would be welcomed in this case.

The findings in Table 129 revealed that the proportion of food (mango) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 130 indicated that the proportion of food (guava) given to PSC differed significantly based on the income of parents/caregiver/guardians.While the findngs in Table 131 showed that the proportion of food (avocado pear) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 132 revealed that the proportion of food (orange) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 133 indicated that the proportion of food (pine-apple) given to PSC differed significantly based on the income of parents/caregiver/guardians.The findings in Table 134 revealed that the proportion of food (water melon) given to PSC differed significantly based on the income of parents/caregiver/guardians.Also the findings in Table 135 reveals that the proportion of food (pawpaw) given to PSC differed significantly based on the income of parents/caregiver/guardians.

The findings in Table 136 showed that the proportion of food (banana) given to PSC differed significantly based on the income of parents/caregiver/guardians. (Tables 129-136) was not a surprise.It was in consonant with Ahmed, Bhuyan, Barua, Shaheen, Margett and Jackson (1991),that income of parents/caregivers/guardians was a contributing factor to the nutritional status of children, thereby,stunting,wasting and underweight occurs,which could be dealt with an effective nutrition intervention.

The findings in Table 137 revealed that the proportion of food (garri) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 138 indicated that the proportion of food (plantain) given to PSC was the same based on the number of children in the family.While the findings in Table 139 showed that the proportion of food (yam) given to PSC differed significantly based on the number of children in the family.The findings in Table 140 revealed that the proportion of food (cocoyam) given to PSC differed significantly based on the number of children in the family.

The findings in Table 141 reveals that the proportion of food (fufu) given to PSC differed significantly based on the number of children in the family.The findings in Table 142 showed that the proportion of food (potatoes) given to PSC was the same children in the family.Data from (Tables 137-142 except 138 and 142) was expected.This was in line with (Nabeela et.al 2010) that malnutrition is caused by a number of intertwining factors that form a web of causation and enhance each otherǿs effect. It is largely the by-product of large family size.I observed that in a large family with insufficient food survival of the fittest is obtainable,the implication is malnutrition.This would be trashed by effective economic, social and political changes, improvement in food production, and nutrition education program especially for school children.Also maintain those who are normal

The findings in Table 143 revealed that the proportion of food (cornflakes) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 144 showed that the proportion of food (golden morn) given to PSC differed significantly based on the number of children in the family.While the findings in Table 145 indicated that the proportion of food (cerelac) given to PSC was the same with based on the number of children in the family.The findings in Table 146 reveals that the proportion of food (frisocream) given to PSC was the same based on the number of children in the family.Also the findings in Table 147 shows that the proportion of food (maize (pap) given to PSC was the same based on the number of children in the family.While the findings in Table 148 revealed that the proportion of food (millet (jero) given to PSC was the same based on the number of children in the family.

The findings in Table 149 indicated that the proportion of food (sorghum (dawa) given to PSC was the same based on the number of children in the family. The findings in Table 150 reveals that the proportion of food (wheat and wheat product) given to PSC was the same based on the number of children in the family.Also the findings in Table 151 indicated that the proportion of food (semovita) given to PSC was the same based on the number of children in the family.

The findings in Table 152 showed that the proportion of food (indomie) given to PSC was the same based on the number of children in the family.While the findings in Table 153 revealed that the proportion of food (spaghetti) given to PSC was the same based on the number of children in the family. (Tables 143-153 except 143 and

144) was not a surprise although two tables was surprising.This agrees with the findings of Mukherjee et al (2008) who found that the prevalence of stunting (13.8%), wasting (6.79%) and undernutrition (9.87%) were significantly associated with with family size.I observed that there are struggle for food in large family size except those family that have enough money to meet the food demand,the outcome is undernutrition.The family size should be restricted and maintain positive nutritional status for the children on the other side to avoid reverts to a worse state.

The findings in Table 154 revealed that the proportion of food (groundnut) given to PSC was differed significantly based on the number of children in the family. Also the findings in Table 155 showed that the proportion of food (beans) given to PSC was the same based on the number of children in the family.While the findings in Table 156 reveals that the proportion of food (soy beans) given to PSC differed significantly with based on the number of children in the family.

The findings in Table 157 indicated that the proportion of food (moi-moi) given to PSC was the same based on the number of children in the family.Also the findings in Table 158 revealed that the proportion of food (bean cake) given to PSC was the same based on the number of children in the family.(Tables 155-158 except 154) It was not surprising.This agrees with Ijarotimi and Ijadunola (2007),that inadequate feeding and repeated illness are the immediate causes of the nutritional problem, which can be exacerbated by some combination of large family size. Hence the need for number of children restriction.

The findings in Table 159 revealed that the proportion of food (fish) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 160 indicated that the proportion of food (chicken) given to PSC was the same based on the number of children in the family.The findings in Table 161 revealed that the proportion of food (beef) given to PSC was the same based on the number of children in the family.

The findings in Table 162 indicated that the proportion of food (goat meat) given to PSC was the same based on the number of children in the family.Also the findings in Table 163 showed that the proportion of food (liver) given to PSC was the same based on the number of children in the family.While the findings in Table 164 revealed that the proportion of food (kidney) given to PSC was the same based on the number of children in the family.The findings in Table 165 reveals that the proportion of food (crayfish) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 166 indicates that the proportion of food (snail) given to PSC was the same based on the number of children in the family.

The findings in Table 167 showed that the proportion of food (turkey) given to PSC was the same based on the number of children in the family.The findngs in Table 168 revealed that the proportion of food (milk) given to PSC differed significantly based on the number of children in the family.The findings in Table 169 indicates that the proportion of food (yoghurt) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 170 revealed that the proportion of food (cheese) given to PSC was the same based on the number of children in the family. (Tables 159-170 was not surprise except 159,165168, & 169 was not expected).These consents with the findings of Adebayo (2012), that the results of the study indicated that about 60.9% had family size of 5and 8 members. Only 24.5% were food secure. Coping strategies employed include borrowing money, relying on less preferred and less expensive food. The constraints faced includes, poor access to credit (84.5%), and lack of input (81.8%). The study concludes that large family size has negative impact on house food security.Infact my observstion was that insufficient income against large number of children in the family had led to malnutrition.The study recommended that government and non government agency should intensified effort on importance of family planning and advocate small family size.

The findings in Table 171 revealed that the proportion of food (palm oil) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 172 indicated that the proportion of food (groundnut oil) given to PSC was the same based on the number of children in the family.While the findings in Table 173 showed that the proportion of food (margarine) given to PSC differed significantly based on the number of children in the family.

The findings in Table 174 revealed that the proportion of food (butter) given to PSC differed significantly based on the number of children in the family. (Tables 171-174 except 172) was expected.This agrees with Ijarotimi and Ijadunola (2007) that Studies have shown that the food available to larger families per head was frequently lower than that available to smaller families and this difference was reflected in the growth rate. Deficiency of unsaturated fatty acids may have a negative impact on school performance. In a randomised controlled trial, six months of treatment with fatty acid supplements among 102 dyslexic school aged children significantly improved reading age on standardised tests of single word reading.I found out that large family size poses a great challenge on PSC nutritional status.Family planning could be a way out.

The findings in Table 175 indicated that the proportion of food (dark green vegetable) given to PSC was the same based on the number of children in the family. Also the findings in Table 176 revealed that the proportion of food (tomatoes) given to PSC was the same based on the number of children in the family.While the findings in Table 177 showed that the proportion of food (okro) given to PSC was the same based on the number of children in the family.The findings in Table 178 revealed that the proportion of food (garden egg) given to PSC was the same based on the number of children in the family.While the findings in Table 179 indicated that the proportion of food (cabbage) given to PSC differed significantly based on the number of children in the family. The findings in Table 180 discovered the proportion of food (carrot) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 181 revealed that the proportion of food (lettuce) given to PSC was the same based on the number of children in the family.The findings in Table 182 indicated that the proportion of food (bitter leaf) given to PSC differd significantly based on the number of children in the family. (Tables 175-182) was not a surprise except 179,180 &182 was not expected).I discovered that large family size brings food shortage thereby attracts stunting, wasting and underweight.This need commendation, perhaps advice the family whose children were influenced.

The findings in Table 183 revealed that the proportion of food (mango) given to PSC differed significantly based on the number of children in the family.Also the findings in Table 184 showed that the proportion of food (guava) given to PSC differed significantly based on the number of children in the family.While the findings in Table 185 revealed that the proportion of food (avocado pear) given to PSC was the same based on the number of children in the family.The findings in Table 186 indicated that the proportion of food (orange) given to PSC was the same based on the number of children in the family.

The findings in Table 187 showed that the proportion of food (pine-apple) given to PSC was the same based on the number of children in the family.The findings in Table 188 revealed that the proportion of food (water melon) given to PSC was the same based on the number of children in the family.Also the findings in Table 189 showed that the proportion of food (pawpaw) given to PSC was the same based on the number of children in the family.The findings in Table 190 revealed that the proportion of food (banana) given to PSC was the same based on the number of children in the family. (Tables 183-190 was not surprise but 183 &184 was interesting).It agrees with the findings of Fatima(2011) who found that there were significant differences ($p< 0.05$) between urban and rural school children in family size. These finding agree with Mierzejewska (1995) who stated that the smaller the family size the better the nutritional status.From observation adequate diet was a challenge to large family size and leads to undernutrition.This was commendable, perhaps advice on family planning to parents.

CHAPTER FIVE

Summary, Conclusions and Recommendation

Summary

The purpose of the study was to find out the nutritional status of primary school children in Enugu South Local Government Area of Enugu State. To achieve the purpose of the study, fifteen research questions were posed and twelve hypotheses were postulated to guide the study. Literature pertinent to the study was reviewed. The study utilized a cross-sectional survey research-designed questionnaire. The population for the study was 8,870. Data was collected from 405 primary school children and used for the study. Frequencies and percentages were used to answer the research question. The hypotheses were verified using chi-square, statistics at .05 level of significance.

Findings that emanated from the study were summarized below.

1. Majority of PSC was normal with regard to height-for-age (stunting) of PSC (80.0%), weight-for-height (wasting) of PSC (93.6%) and weight-for-age (underweight) of PSC (93.1%). (Table 1, 2&3.)
2. Majority of male PSC was normal (83.2%) regarding height-for-age (stunting), female PSC was normal (94.5%) as regards weight-for-height (wasting) and female PSC was normal (93.6%) regarding weight-for-age (underweight). (Table 4, 5 and 6.)
3. Majority of rural PSC was normal (89.6%) regarding height-for-age (stunting), (95.7%) regarding weight-for-height (wasting) and (95.1%) regarding weight-for-age (underweight). (Table7, 8 & 9.)
4. Majority of PSC of age group 6.0-6.9 to 9.0-9.9 years was normal (84.4%) regarding height-for-age(stunting),(94.6%) regarding weight-for-height(wasting) and majority of PSC of age group 6.0-6.9 to 9.0-9.9 years and age group 10.0-10.9 to 13.0-13.9 years was normal (93.2%) regarding weight-for-age(underweight). (Table 10, 11 &12.)
5. Higher proportions of root and tuber foods (garri = daily (34.8%), plantain = occasionally (39.8%), yam = 2-3times/wk (28.9%), cocoyam = occasionally

(41.7%), fufu = daily (23.2%) and potatoes = occasionally (43.7%).were given to PSC, Higher proportions of cereal and products foods(corn flakes = never (49.6%),goldenmorn=never(44.7%),cerelac=never(70.9%),frisocream = never (73.1%), maize(pap) = 2-3times/wk (51.9%), millet(jero) = never(68.9%), sorghum = occasionally (38.8%),wheat and wheat product = never(39.5%), semovita = occasionally(49.1%), indomie = daily(37.0%) and spaghetti = once/wk (37.3%) were given to PSC,Higher proportions of nuts and legumes foods(groundnut = 2-3times/wk (30.1%), beans = once/wk(48.4%),soybeans = occasionally(40.2%),moi-moi = once/wk(56.3%) and bean cake = 2-3times/wk(53.6%) were given to PSC,Higher proportions of animal and animal products foods (fish = 4-6times/wk(38.8%),chicken = never(59.0%),beef = 2-3times/wk(30.9%),goat meat = 2-3times/wk(28.6%),liver = occasionally(48.6%), kidney = never (62.2%),crayfish = daily(57.0%), snail = never(43.2%),turkey = occasionally (38.3%),milk = 2-3times/wk(40.0%),yoghurt = 2-3times/wk(37.0%), and cheese = never(62.5%) were given to PSC.

Higher proportions of fats and oil foods (palm oil = daily (63.7%), groundnut oil = 2-3times/wk (51.9%), margarine=never (34.6%) and butter = 2-3times/wk (42.2%) were given to PSC,Higher proportions of vegetable foods (dark green vegetable = 4-6times/wk (40.2%),tomatoes = 2-3times/wk(56.0%),okro = 2-3times/wk(58.0%),garden egg = 2-3times/wk(56.8%),cabbage = occasionally (46.9%),carrot = 4-6times/wk(34.3%),lettuce = occasionally(46.4%) and bitter leaf = once/wk (49.1%) were given to PSC and proportions of fruits (mango = daily(40.5%),guava = occasionally(60.5%), avocado pear = occasionally(52.1%),orange = 2-3times/wk(40.7%),pineapple = 2-3times/wk(47.9%),water melon = 2-3times (45.7%),pawpaw = 2-3times/wk(55.8%) and banana = 2-3times/wk (49.6%) were given to PSC (Table 13,14,15,16,17,18& 19.)

6. Height-for-age (Stunting), weight-for-height (wasting) and weight-for-age (underweight) was the same for both male and female PSC with (p-value=.198, .578 &.424 > .05) respectively. (Tables 20, 21&22).
7. Height-for-age (Stunting) differed significantly between urban and rural PSC with (p-value=.000<.05) while weight-for-height (wasting) andweight-for-age (underweight) was the same for urban and rural PSC with (p-value=.355 & .155 >.05) respectively. (Tables 23, 24 &25).
8. Height-for-age (Stunting) differed significantly between PSC of age group 10.0-10.9to13.0-13.9years and 6.0-6.9 to 9.0-9.9years with (p-value=.026 < .05) while weight-for-height (wasting) andweight-for-age (underweight) was the same for both age group with (p-value=.766 & .836 > .05) respectively. (Tables 26, 27 & 28).
9. The food given to PSC differed significantly while some was the same according to level of education of parents/caregivers/guardians (Tables 29 -82).
10. The food given to PSC differed significantly while some was the same based on the income of parente/caregivers/guardians.(Tables 83-136).
11. The food given to PSC was the same while some differed significantly based on the number of children in the family.(Tables 137-190)

Conclusions

Based on the major findings and discussions of the current study, it was concluded that the presentation was guided by the tasks the answers to the major research questions explored and the twelve hypotheses that were tested. Highlights of the findings are as follows:

1. Majority of PSC nutritional status were normal.This answered Research Questions 1to5.
2. Majority of male and female PSC was normal.This answered Research Questions 6 to 8.
3. Majority of rural PSC was normal.Answering Research Questions 9 to 11.

4. Majority of PSC of age group 6.0-6.9 to 9.0-9.9 years was normal. This answered Research Questions 12 to 14.
5. Higher proportions of root and tuber foods was given to PSC occasionally, cereal and products foods given to PSC occasionally was higher, nuts and legumes given to PSC once per week was higher, animal and animal products given to PSC occasionally was higher, fats and oil given to PSC 2-3times per week was higher, vegetable given to psc 2-3times per week was higher and fruits given to PSC 2-3 times per week was higher.Answered Research Question 15.
6. Height-for-age(stunting),weight-for-height(wasting)andweight-for-age(underweight)was the same for both male and female PSC.This verified hypotheses 1 to 3
7. Height-for-age (stunting) differed significantly between urban and rural PSC with (p-value=.000<.05) while weight-for-height (wasting) andweight-for-age (underweight) was the same for urban and rural PSC with (p-value=.355 & .155 >.05) respectively.This verified hypotheses 4 to 6.
8. Height-for-age (stunting) differed significantly between PSC of age group 10.0-10.9to13.0-13.9years and 6.0-6.9 to 9.0-9.9years with (p-value=.026 < .05) whileweight-for-height (wasting) andweight-for-age (underweight) was the same for both age group with (p-value=.766 & .836 > .05) respectively.This verified hypotheses 7 to 9.
9. The food given to PSC differed significantly while some was the same according to level of education of parents/caregivers/guardians.This verified hypothesis 10.
10. The food given to PSC differed significantly while some was the same based on the income of parente/caregivers/guardians.This verified hypothesis 11.
11. The food given to PSC was the same while some differed significantly based on the number of children in the family.This verified hypothesis 12.

Recommendations

Based on the major findings, discussions and conclusions, thereof, it was recommended as follows:

1. That appropriate counseling on nutritional intake should be given to primary school children,parents/caregiver/guardians to avoid revert of their nutritional status.
2. Prevention of malnutrition was recommended to be given a higher priority in the implementation of primary health care programme with particular attention paid to the urban population.
3. The study recommended that government and non government agency should intensified effort on importance of family planning and advocate small family size.
4. There is need for the Ministry of Education and Ministry of Health to adopt a more intensive approach to address nutrition issues as they concern children.

Suggestion for further studies

Further studies should be carried out on:

1) Nutritional status and intelligence quotient of primary school children in other parts of Nigeria.

2) Identifying the prevalence of malnutrition among children of government and private schools in other parts of Nigeria.

Limitations of the study

The study was constrained by a number of problems. Prominent among them were:

1. Time frame for this study was too short which was why the researcher sampled out only five primary schools out of 26 primary schools from the Local Government Area which generalization for the whole was drawn.
2. Financial constrain was another hurdle that also affected this study. This was because much finance was required for the acquisition of current and relevant materials from the internet. The much the researcher presented was the the researcher could afford at the time of presenting this report.

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Appendices

Appendix A: Official Introductory Letter of Investigator

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

UNIVERSITY OF NIGERIA NSUKKA

Ref. No.: UN/FE/HPE/S.19

To whom it may Concern

Information on Project/Field Work

The bearer Okoh, Ifeoma Onyinye with Reg. No PG/M.Ed/09/50879 is a post graduate student of the Department of Health and Physical Education, University of Nigeria Nsukka; she is presently carrying out a study on NUTRITIONAL STATUS PRIMARY SCHOOL CHILDREN IN ENUGU SOUTH LOCAL GOVERNMENT AREA, ENUGU STATE as part of the requirements for the award of Master of Education (M.Ed) in Public Health Education.

This is to request your kind cooperation to enable her have access to information and provide her with other forms of assistance that may be required.

Thank you for your co-operation.

(Head of Department)

Appendix B

Department of Health and Physical Education
University of Nigeria
Nsukka
--------- 2011

Dear Respondent,

I am a graduate student of the University of Nigeria, Nsukka. I am currently carrying out an investigation of nutritional status of primary school children in Enugu South Local Government Area of Enugu State.

You are therefore requested to give your honest responses to the questions below. The information you will give will not be used for any other purpose except the one stated above. No name is required in this copy of the questionnaire. Your maximum co-operation will be highly appreciated.

Okoh, Ifeoma .O.

Appendix C

Questionnaire

An investigation of nutritional status of primary school children in Enugu South Local Government Area. The information is for academic purpose and will be confidential please indicate by a tick [√] in the boxes provided below against the options as they best apply to you

Section A: Bio- Data

1. **Gender of the child:** Male [ ] Female [ ]
2. **Actual age (years: months):**6.0-6.9 to 9.0-9.9 [ ] 10.0-10.9 to13.0-13.9 [ ]
3. **Location:** Urban area [ ] Rural area [ ]
4. **Level of education of parent/care giver/guardian:** primary school [ ] secondary school [] Tertiary institution [ ] no formal education [ ]
5. **Income of parent/caregiver/guardian:** low [ ] moderate [ ] high [ ]
6. **Number of children in the family:** 1 to 6 [ ] 7 to 12 [ ]

Section B: Nutritional Status Indices

Height and weight attainment of primary school children (To be taken by the researcher)

Anthropometry:

7. Height (cm)
8. Weight (kg)

Section C: FOOD FREQUENCY

9. What food is given to this child (please parents/caregiver/guardian tick [√] where appropriately

List of food items	Daily	Once/wk	2-3 times/wk	4-6 times/wk	Occasionally	Never
Root and tubers 1. Garri						
2. Plantain						
3. Yam						
4. Cocoyam						
5. fufu						
6. Potatoes						
Others specify						
Cereal and products						
1. Corn flakes						
2. Golden morn						
3. Cerelac						
4. Frisocream						
5. Maize (Pap)						
6. Millet (Jero)						
7. Sorghum (Dawa)						
8. Wheat and wheat product						
9. Semovita						
10. Indomie						

11. Spaghetti						
Others specify						
Nuts and Legumes						
1. Groundnut						
2. Beans						
3. Soy beans						
4. Moi-moi						
5. Bean cake						
Others specify						
Animal/animal product						
1. Fish						
2. Chicken						
3. Beef						
4. Goat meat						
5. Liver						
6. Kidney						
7. Crayfish						
8. Snail						
9. Turkey						
10. Milk						
11.Yoghurt						
12.Cheese						
Others specify						
Fats and oil						
1. Palm oil						
2. Groundnut oil						
3. Margarine						
4. Butter						
Others specify						
Vegetables						
1. Dark green vegetable						
2. Tomatoes						
3. Okro						
4. Garden egg						
5. Cabbage						
6. Carrot						
7. Lettuce						
8. Bitter leaf						
Others specify						
Fruits						
1. Mango						
2. Guava						
3. Avocado pear						
4. Orange						
5. Pine-apple						
6. Water melon						
7. Pawpaw						
8. Banana						

Any others specify						

Appendix D

Names of Primary School in Enugu South Local Government Area.

1. Achara Layout Primary School 1
2. Achara Layout Primary School 2
3. Achara Layout Primary school 3
4. Achara Layout Primary School 4
5. Community School Amechi 1
6. Community Primary School 1 Amechi
7. Community Primary School 2 Amechi
8. Igbarian Street Primary School 1
9. Igbariam Street Primary School 2
10. Igbariam Street Primary School 3
11. Community Primary School-Ndiagu Amechi
12. Niger Close Primary School 1
13. Niger Close Primary School 2
14. Community Primary School Obeagu 1
15. Community School Obeagu main
16. Robinson Street Primary School 1
17. Robinson Street Primary School 2
18. Community School Ugwuaji
19. Community Primary School Ugwuaji
20. Uwani River Primary School
21. Zik Avenue Primary School 1
22. Zik Avenue Primary School 2
23. Zik Avenue Primary School 3
24. Zik Avenue Primary School 4
25. Eke Aku Model Primary School Obeagu
26. Maryland Primary School