CHAPTER ONE

Introduction

Background to the Study

Diarrhoea accounts for high levels of mortality in young children in developing countries like Nigeria, despite worldwide efforts to improve overall child health levels. Each year, in the developing countries of Asia, Africa and Latin America, approximately five million children under five years of age die from acute diarrhoea. About 80 per cent of these deaths are in the first two years of life (Lucas & Gilles, 2009) In the developing world as a whole, about one-third of infant and child deaths are due to diarrhoea and approximately 70 per cent of diarrhoeal deaths are caused by dehydration – the loss of large quantity of water and salts from the body, which needs water to maintain blood volume and other fluids to function properly (Gupta & Mahajan, 2005). UNICEF (2002) submitted that in Nigeria, infant mortality rates are twice as high in rural settings as they are in urban ones due to poor hygiene and poor sanitation. Of the annual 3 million infant births in Nigeria, approximately 170,000 result in deaths that are mainly due to poor knowledge and management practices of childhood diarrhoea. Several factors are likely to contribute to the very high diarrhoea morbidity and mortality rates, in children under-five years including poverty, female illiteracy, poor water supply and sanitation, poor hygiene practices and inadequate health services (Park, 2009). Malnutrition is another established risk factor for mortality among children with diarrhoea disease. This may be due to inadequate case management. The first line of management of diarrhoea, is therefore, the prevention of dehydration. This can be achieved at home using Oral Rehydration Therapy (ORT).

Diarrhoea is the disturbance of the gastrointestinal tract comprising of changes in intestinal motility and absorption, leading to increase in the volume of stools and in their consistency (Ballabriga, Hilpert & Isliker, 2000). In diarrhoea, stool contains more water than normal stool and is often called loose or watery stool. In certain cases, they may contain blood in which case the diarrhoea is called dysentery (Obionu, 2001). Any passage of three or more watery stools within a day (24 hours) is referred to as diarrhoea (Tauxe, 1997). The consistency and the volume of stool constitute how to classify diarrhoea.

World Health Organization – WHO (1993) classified diarrhoea as acute or persistent based on its duration. An episode of diarrhoea that lasts less than two weeks is acute diarrhoea, while diarrhoea that lasts more than two weeks is persistent. Morley (2000) further
classified diarrhoea according to its typology: Secretary diarrhoea, osmotic diarrhoea and exudative diarrhoea. Secretary diarrhoea results from active process in the intestinal epithelium stimulated by the presence of toxin, chemical or nutritional product in the intestinal lining. Osmotic diarrhoea is caused by the presence of the intestinal lining of osmotically active solutes that are poorly absorbed by the injection of laxatives such as magnesium sulphate or magnesium hydroxide. Exudative diarrhoea is associated with damage to the mucosa lining leading to outpouring of mucus, blood and plasma protein among other substances. However, it is important to note that the classification of diarrhoea does not influence the cause.

Diarrhoea is a symptom of infection caused by a host of bacterial, viral and parasitic organisms most of which can be spread by contaminated water. Diarrhoea in most cases is caused by three major groups of micro-organisms namely; Viruses, bacteria and protozoa or parasites (Lucas & Gilles, 2009). The main agents of diarrhoea according to them are enteroviruses (e.g. rotavirus, escherichia coli, campylobacter spp, shigella, vibrio cholera, salmonella (non typhoid), entamoeba histolytica, giardia lamblia, cryptosporidium). These are further grouped in the following ways: Viruses (e.g. Rota virus); Bacteria (e.g. shigella, escherichia coli, vibrio cholerae, salmonella non typhoid, campylobacter spp). Parasites (e.g. entamoeba histolytica, crytosporidium and giardia lamblia). All over the world, viruses especially rotavirus has been identified as the major cause of acute diarrhoea in children. Studies in Nigeria also found viruses as the major causes of diarrhoea in 60 per cent of cases with bacteria responsible for about only 3-20 per cent. Most of these pathogens are transmitted by faeco-oral route. Childhood diarrhoea within the context of this study refers to any type of loose, watery stool that occurs more frequently than usual in a child. The various causative agents vary according to the signs and symptoms manifesting from the disease.

The main consequence of diarrhoea are frequent loose or watery stools, the risk of dehydration, damage to intestine (especially when there is bloody diarrhoea) and loss of appetite with or without vomiting. However, Victoria, Bryce, Fountaine and Monasch (2000) asserted that signs of dehydration are not evident until there is acute fluid loss of approximately 4-5 per cent of body weight. The signs and symptoms of dehydration include sunken fontanelle, dry mouth and throat, fast and weak pulse, loss of skin elasticity and reduced amount of urine. This loss leads to shock and untimely death of under-five. Werner (2001) noted that dehydration takes its heaviest toll on infants and children under-five. The signs and symptoms according to Longmach, Wilkinson and Rajagopalan (2004) are passage
of frequent loose watery stools, abdominal cramps or pain, fever particularly if there is an infectious cause and bleeding. Bacteria and parasites often can produce bloody diarrhoea (dysentary). In addition, inflammatory bowel disease, polyps and colorectal cancer can cause blood and mucus in the stools, nausea and vomiting may also be present in the case of infection.

The main dangers of diarrhoea are dehydration and malnutrition (WHO, 1993). Dehydration according to WHO is most often caused by loss of a large amount of water and salt from the body, while malnutrition can be caused by an inadequate diet due to poverty, a lack of appropriate foods or incorrect beliefs about feeding, frequent infections of which diarrhoea is one of them.

Spradley and Allender (1996) stated that the most common modes of transmission of diarrhoea are contaminated food and water, dirty feeding utensils (especially feeding bottles and teats) and the faecally contaminated fingers of the infants or the mother. Infection occurs through ingesting food contaminated with adequate doses of Salmonella, and Shigella or E. Coli. The cycle begins when the infectious agent multiplies and grows in the food medium. The agent subsequently invades the host upon ingestion of the food.

There are other physical modes of transmission of diarrhoea as identified by the United Nations Children’s Fund – UNICEF (1998). These include: poor source of water supply, especially in rural areas; poor environmental sanitation leading to attitudinal problems of defecating in open spaces, pit latrine, bushes and in the streams (used for drinking and bathing). Feeding bottle is also a feature of infection (Federal Republic of Nigeria – FRN 2002). Lucas and Gilles (2009) also maintained that transmission of diarrhoea occurs by the faecal-oral route due to poor standards of personal and environmental hygiene. These conditions will determine the seriousness of infection of diarrhoea. The most important aspect of managing a child with diarrhoea are preventing or treating dehydration and maintaining good nutrition.

These preventive practices according to WHO (1993) include breast feeding, improved weaning, use of plenty of water for hygiene and clean water for drinking, hand washing, use of latrines, proper disposal of the stools of young children, use of Oral Rehydration Therapy (ORT) and Oral Rehydration Solution (ORS) and immunization against measles. Cutting (1994) stressed that drinking extra fluid in the early stages of diarrhoea is crucial in preventing dehydration and subsequent death. He also noted that the combination
of giving more fluid than usual as soon as diarrhoea starts and continuing feeding is an effective home therapy for acute diarrhoea. The knowledge and practice of these becomes necessary for the mothers in the issues of childhood diarrhoea.

Traditionally, mothers are expected to spend most of their time in the house, looking after their children and carrying out other domestic functions. It may be right and natural, therefore, that the first person to manage a diarrhoea episode at home is possibly the mother. Mothers on this basis have been identified as the most important people involved in the management of childhood diarrhoea, hence mothers are used for this study. Landy (1992) referred to them as the key persons and managers of the home. She asserted that people, especially mothers possess adequate knowledge about their baby’s health and disease prevention. Thus, they are recognized as very important persons for the smooth running of the family, including supervision of health of their children. Macleans (1998), on his own part, accorded mothers the traditional responsibility of looking after their children with regard to weaning and nursing care. This, according to him, is because of their being close to their children. This situation is similar to the relationship between mothers and their children in Ezeagu LGA. As asserted by Davely and Wilson (1981) and Bethann, Gopel, Douglas and Lynn (1992), literate mothers are better able to look after their children than non-literate ones. Thus, those who possess the appropriate knowledge are more likely to be able to take the appropriate action to protect their children especially the under five (childhood).

According to Hodges (2001) childhood is a period of rapid physical growth, including the development of the brain almost to its full adult size, and is also a critical period for the development of the cognitive functions. He further added that the key factors for child growth and development are adequate care, good health, nutrition and stimulation. Inadequate nutrition and care in the first few years of life can seriously interfere with brain development and lead to such neurological and behavioural disorders as learning disabilities (Bargley, 1996). Childhood in the context of this study means the condition or period of being a child or a young human being below the age of five. The knowledge of adequate and quality childhood care could lead to healthiness of the child in terms of prevention of early childhood diseases like diarrhoea.

Knowledge according to Winifred (1989) is accumulated facts, truth, principles and information to which human mind has access. Knowledge can be defined as the sum of conceptions, views and propositions which has been established and tested (Conforth, 1996). The Nigerian Education Research Council – NERC (1982) asserted that an educated and knowledgeable person is one who understands, among other things the basic facts concerning
health and disease and protects his or her own health and that of the community. WHO (1995) also maintained that if a person is well informed in the area of health, he or she would be able to reject practices that imperil his or her health. The individual will also be well equipped to make the right decision concerning the children and family, and will play active role in improving the society in which the person lives. In the context of this study, knowledge refers to the act of having adequate information and understanding of the concept, signs and symptoms, modes of transmission and management practices of diarrhoea by the child bearing mothers. Adequate or high level knowledge of the concepts, signs and symptoms, mode of transmission of diarrhoea is capable of guaranteeing proper management practices of diarrhoea among children.

Management according to Osinem (2008) is the co-ordination of all the resources of an organization through the process of planning, organizing, directing and controlling in order to attain organizational objectives. Koontz and Weighrich (2005) described management as the process of designing and maintaining an environment in which individuals working together in groups efficiently accomplish selected aims. Management as defined by wikipedia, the free Encyclopaedia (2007) is the art and science of getting things done through others. It can also refer to the person who performs the act of management. Management in this context involves childbearing mothers doing or producing something like proper breastfeeding, washing feeding bottles, washing plates and hands, keeping the environment clean and producing oral rehydration solution to cope with childhood diarrhoea. Ekenedo (1994) noted that there was a relationship between knowledge and management practice adopted by mothers. She concluded that better life will not come from mere acquisition of knowledge but from its practice.

Practice, according to Hornby (2001) is a way of doing something that is common or habitual; it is a way of doing something or expected way in a particular situation. Funks and Wagnalls (2003) defined practice as any customary action or proceeding regarded as individuals habit. Sally (2004) further defined practice as an established way of doing things especially one that developed through experience and knowledge. When management relates to practice, it becomes management practice.

Bucher (1994) perceived management practice as the application of good health actions to ones daily living such as proper personal hygiene and nutrition. In this study, management practices refer to all the actions that are undertaken by mothers to avert childhood diarrhoea. There are many such management practices.
WHO (1993) identified a number of management practices and these are: breast feeding, Oral Rehydration Therapy (ORT), weaning practices, use of plenty of water for hygiene and use of clean water for drinking, hand washing, use of latrines, safe disposal of stools of young children and measles immunization. Early knowledge and practice of these in the home may increase the chances of its efficacy and likely reduce complications following diarrhoea. It is most likely that mothers who are the home-makers will make use of them in order to save their children when they are informed. Okafor (1993) opined that women are better able to understand information and follow instructions if their level of education and information should be raised. The way of determining if women possess adequate knowledge regarding childhood diarrhoea is to assess the level of knowledge they possess about the aspects of the disease.

Level of knowledge and practice can be ascertained in numerous ways. Ashur (1977) opined that a proportion of less than 40 per cent correct response should be taken as indicator of low level of knowledge, 40 – 59 per cent is considered average and 60 – 80 per cent is considered high, while over 80 per cent is regarded as very high level of knowledge. Okafor (1997) modified Ashur’s four scales of measurement into five scales by carving two levels that is, 10-20 per cent as “very low” and 21-39 per cent as “low” out of Ashur’s proportion of less than 40 per cent described as “low” level of knowledge. The Ashur’s (1977) principle was adopted in the present study to determine the knowledge and management practices of childhood diarrhea by mothers in Ezeagu L.G.A.

This study was carried out in Ezeagu L.G.A of Enugu State, with its headquarter at Aguobu Owa. The inhabitants of the area are mainly farmers, civil servants and traders. The possible sources of water supply range from the use of stream, tanker water to the occasional use of tap water. They also use rain water during rainy seasons. General environmental sanitation is poor as there are no facilities for refuse disposal. They make use of open refuse dumps to dispose of refuse – dumping them into nearby bushes, burn them or dumped by the roadside. They use pit latrines and nearby bushes for sewage disposal. However, some well-to-do families make use of water closet system. Some are literate while others are not. The sociodemographic factors that may influence this study include; education, age and parity of the women. This is because an educated mother might use health information more than the uneducated counterparts (Okafor, 1993). Their age and parity also differed and might have conferred different levels of experience which may also affect the management of childhood diarrhoea. Studies such as those of Rao, Vinod, Mishra and Rutherford (1998), which
revealed that more educated women were more likely than less educated women to manage diarrhoea in children. Ekenedo (1994) found that age and parity level might affect the rate at which childhood diarrhoea is managed. This revelation which was made by Ekenedo (1994) Sixteen years ago and confirmed by Rao et al (1998) – might have influence on mothers in Ezeagu LGA where the present study will be carried out.

The desire to effect change in behaviour for reducing the risk of future illness according to Philips (1991) should be based upon theoretical models that identify predictors of behavioural change. Several models or theories concentrate on the significance of socio-cognitive variables in preventive health. Theoretical models relevant to childhood diarrhoea knowledge and management practices among mothers in the context of the present study will include the following: health action process approach, systems management theory and self efficacy theory.

The extents to which mothers in Enugu state portray their knowledge and management practice of childhood diarrhoea do not appear to have received adequate research attention. This cannot be less true about mothers in Ezeagu LGA. Finding out these, certainly, will represent a positive step forward in the effort to promote the childhood diarrhoea knowledge and management practices. Following from these therefore, one is then inclined to ask, what is the level of knowledge possessed by mothers in Ezeagu LGA of Enugu state towards the childhood diarrhoea and what management practices do they adopt? The above in essence, represent the reason of this study.

**Statement of the Problem**

Adequate and accurate knowledge has been admitted as a prerequisite for the adoption of desirable health behaviour. WHO (1995) asserted that when a person is well-informed, the individual will be equipped to make the right decision concerning the health of the children and family and will take an active role in improving the society in which the person lives. Mothers should have adequate knowledge of the childhood diseases, among which diarrhea is one. This knowledge which they gained from the different MCH clinics should help the mothers to take adequate and accurate care of their children.

Regrettably, in spite of the knowledge gained by these mothers, childhood diarrhea is found to be the second main cause of under-five mortality the world over, in the developing countries and in Nigeria in particular. It is not unlikely that low level of knowledge of mothers in Ezeagu LGA may militate against the effective performance of diarrhea prevention practices.
It is against this background of the cases and magnitude of diarrhoeal diseases, its associated implications and complications and the need for child safety and health promotion that the researcher was motivated to ascertaining the knowledge and management practices of childhood diarrhea by mothers in Ezeagu LGA of Enugu State.

**Purpose of the Study**

The purpose of the study is to find out the knowledge and management practices of childhood diarrhea by mothers in Ezeagu LGA. Specifically, the study intends to find out:

1. level of knowledge of the concept of diarrhoea possessed by mothers in Ezeagu LGA;
2. level of knowledge of the signs and symptoms of childhood diarrhoea possessed by mothers.
3. level of knowledge of modes of spread or transmission of diarrhoea possessed by mothers.
4. level of knowledge of the dangers of childhood diarrhoea possessed by mothers in Ezeagu LGA.
5. level of knowledge of preventive measures against childhood diarrhoea possessed by mothers.
6. the management practices of childhood diarrhoea by mothers in Ezeagu LGA;
7. the difference in the knowledge of mothers about childhood diarrhoea according to level of education;
8. the difference in the management practices of mothers about childhood diarrhoea based on level of education;
9. the difference in the knowledge of mothers about childhood diarrhoea based on age;
10. the difference in management practices of mothers about childhood diarrhoea based on age;
11. the difference in the knowledge of mothers about childhood diarrhoea based on parity;
12. the difference in the management practices of mothers about childhood diarrhoea based on parity.
Research Questions

The following research questions were formulated to guide the study;

1. What is the level of knowledge possessed by mothers regarding concept of childhood diarrhoea?
2. What is the level of knowledge possessed by mothers regarding signs and symptoms of diarrhoea?
3. What is the level of knowledge possessed by mothers regarding modes of transmission of childhood diarrhoea?
4. What is the mother’s level of knowledge of the dangers of childhood diarrhoea?
5. What is the level of knowledge possessed by mothers regarding the preventive measures of childhood diarrhoea?
6. What are the management practices of mothers regarding childhood diarrhoea in Ezeagu L.G.A?
7. What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to level of education?
8. What are the differences in the diarrhoea management practices of mothers regarding diarrhoea according to level of education?
9. What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to age?
10. What are the differences in the management practices of mothers regarding childhood diarrhoea according to age?
11. What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to parity? and
12. What are the differences in the management practices of mothers regarding childhood diarrhoea according to parity?
Hypotheses

The following null hypotheses are hereby postulated for the study and will be tested at .05 level of significance.

1. There is no statistically significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to age.
2. There is no statistically significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to level of education.
3. There are no statistically significant differences in the management practices of childhood diarrhoea by mothers according to parity.
4. There is no statistically significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to parity.
5. There are no statistically significant differences in the management of childhood diarrhoea by mothers according to age.
6. There is no statistically significant difference in management practice of childhood diarrhoea by mothers according to level of education.

Significance of the Study

Information, of both local and foreign origin abounds regarding childhood diarrhoea in Nigeria. The study will ginger interest in the area of childhood health and disease in Nigeria. Mothers especially childbearing women will benefit from the result of the study as it will provide them with appropriate information on the concept, signs and symptoms, modes of transmission and the preventive measures of childhood diarrhoea. This will enable the women to make informed choices on the adoption of the management practices. Appropriate knowledge will influence them and enhance their practice. It will also help them in educating the public on the preventive measures of childhood diarrhoea. Low level of knowledge on the other hand will equally compel health policy makers to step up efforts in the area of education, seminars, workshops especially in rural areas with a view to raising the level of knowledge of the people regarding childhood diarrhoea and its management practices.

The result on the management of childhood diarrhoea by mothers will be useful to mothers and caregivers. Appropriate practice will be encouraged and allow these mothers and caregivers to carry out these practices in the already established direction. On the other hand, inappropriate practice will call for adjustment and improvement and provide enlightenment efforts to achieve better results. Specifically, the data to be generated on the management
practices of mothers may likely sensitize the mothers on the childhood diarrhoea in Ezeagu LGA to encourage identified sound practices while engineering changes in the unwholesome practices of mothers towards childhood diarrhoea.

The findings of differences in the level of knowledge and management practice according to level of education will be useful to mothers, caregivers and institutions of learning. These mothers and caregivers by level of knowledge, who had adequate knowledge and appropriate practice may be encouraged. Those with low level of knowledge and inappropriate practice may be exposed to education and enlightenment interventions by health workers that will enhance their knowledge and management practice of childhood diarrhoea.

The findings will be useful to the general public who may need appropriate information on childhood diarrhoea. Researchers will benefit from the study. They can build on the findings for further research is this area of knowledge. The data concerning this study may help to enrich the pool of data on the subject matter. Such data may also be beneficial to both Health and Education ministries in Enugu state, and may form the basis for future policy formulation and modification.

The study has identified some of the demographic factors associated with the knowledge and management practices of childhood diarrhoea. This will help health workers to know the group of mothers that needs more education on childhood diarrhoea. These adjustments will facilitate understanding and corresponding behaviour among mothers concerning childhood diarrhoea. When this happens mothers will be convinced to adopt appropriate practices in managing diarrhoea cases. The end product of this will be a morbidity and mortality decline.

Finally, scholars and reading public will benefit from the theoretical significance of the study. It will contribute to the synthesis of the relevant theories in the field of study. It seeks to explain why people think, feel, and act the way they do. The study will add to the existing literature in the field of health education and child health in particular.

Scope of the Study

The study was delimited to mothers in Ezeagu LGA. of Enugu state, which is made up of eight towns namely; Imezi owa, Aguobu owa, Mgbagbu owa, Oghe, Olo, Awha, Umanaa and Umumba. Ezeagu LGA is located some 20 kilometers south west of Enugu, the Enugu state capital in Eastern Nigeria. The study was concerned with finding out the childhood diarrhoea level of knowledge and management practices of mothers in Ezeagu
L.G.A. This will consist of the causes, modes of spread, signs and symptoms and control/preventive measures or management of childhood diarrhoea. The socio-demographic factors of age, level of education and parity and their relationship to the knowledge and management practices of mothers regarding childhood diarrhoea will also be explored.
CHAPTER TWO

Review of Related Literature

Literature, of both local and foreign origin, abounds on childhood diarrhoea. However, literature considered pertinent to this study is hereby presented under the following headings:

1. Conceptual framework
   - Childhood and diarrhoea
   - Knowledge and practice
   - Management and management practices.
   - Factors associated with knowledge and management practices of mothers.

2. Theoretical framework
   - Health action process approach
   - Systems management theory
   - Self efficacy theory


4. Summary of literature review

Conceptual Framework

Childhood and Diarrhoea.

This section presents childhood diarrhoea, knowledge and management practices of mothers. Under-five has been conceived as early childhood, a period roughly covering the first five years of life, prior to entry into school. According to Hodges (2001) childhood is a period of rapid physical growth, including the development of the brain almost to its full adult size, and is also a critical period for the development of cognitive functions. He further added that the key factors for child growth and development are adequate care, good health, nutrition and stimulation.

The importance of giving young children the quality care, nutrition and stimulation needed for their healthy growth and development has increasingly been receiving recognition, both nationally and internationally. This was prominent not only in the Convention on the Rights of a Child (CRC), but more recently in the Education For All – EFA (2000). Declaration of the Dakar World Education Forum, reaffirmed the goal of expanding and improving comprehensive early childhood care and education. Nigeria, not only endorsed this
declaration, but has given prominence to the needs of pre-school children in the new universal Basic Education (UBE) Programme announced in 1999.

One of the important features of childhood is the development of the brain. The brain is vulnerable during this initial growth spurt. Inadequate nutrition and care in the first few years of life can seriously interfere with brain development and lead to such neurological and behavioural disorders as learning disabilities (Bargley, 1996). The knowledge and practice of adequate and quality childhood care could lead to healthiness of the child in terms of prevention of early childhood diseases while lack of knowledge and poor practices increase the chances of prevalence of childhood diseases. There should be therefore, great emphasis in the importance of children getting a good start in life, for future growth and development in cognitive and psycho-social terms as well as physically.

The main concerns of mothers and other care givers with respect to feeding, hygiene in the home and the prevention, diagnosis and response to illness in young children should be adequate knowledge and quality practices. This is because, in spite of the rising rate of exclusive breast feeding, the practice is still very low in Nigeria, indicating that the great majority of mothers have little knowledge of nutritional value of breast milk or of the health risks of early exposure to other liquids and solids, leading to one of the main causes of diarrhoea in young children, which can set off a vicious cycle of illness and malnutrition (Park, 2009).

Diarrhoea disease refer to the disturbance of the gastro – intestinal tract comprising of changes in the intestinal motility and absorption, leading to an increase in the number of stools and changes in their consistency (Ballabriga, Hilpert & Ishiker, 2000). However, when the presumed or definite cause of these disturbances is infectious as expounded by Ballabriga et al (2000), it is referred to as infectious diarrhoea. FRN (2000) described diarrhoea disease manifestations as the passage of three or more watery stools in a day. Edge (1996) equally asserted that if a baby who has had steady weight gain over a period and who has been in a habit of passing one normal yellow stool a day begins to pass frequently loose and watery green stool that are of an unpleasant odour, he is probably suffering from diarrhoea disease.

Spradley and Allender (1998) also described childhood diarrhoea as food and water borne diseases whose intake by people, especially children results in symptoms relating to gastrointestinal problems. Onset of symptoms may occur within few hours of exposure or not until days and even weeks later, between exposure and organism. In a related conception, WHO (2000) described diarrhoea disease as one of the diseases leading to two out of three deaths among children and young adults in Africa and South-East Asia. The above assertion
was further confirmed by a flow chart in which diarrhoeal disease accounted for 9 per cent of deaths of children in Africa and South-East Asia. However, any passage of three or more watery stools within a day (24 hours) is referred to as diarrhoea. Childhood diarrhoea within the context of this study is any type of loose, watery stool that occurs more frequently than usual in a child. The consistency and the volume of stool constitute how to classify diarrhoea.

WHO (2000) classified diarrhoea into three clinical types which includes: Acute watery diarrhoea, dysentery and persistent diarrhoea. Acute watery diarrhoea refers to diarrhoea that begins acutely, last less than 14 days and involve passage of frequent stool without visible blood. Dysentery is diarrhoea with visible blood in the faeces, while persistent diarrhoea is the diarrhoea that begins acutely but is of usually long duration (at least 14 days). The episode may begin as watery diarrhoea or as dysentery, with frequent marked weight loss. Morley (2000) further classified diarrhoea according to its typology: Secretary diarrhoea, osmotic diarrhoea, and exudative diarrhoea. Secretary diarrhoea results from active process in the intestinal epithelium stimulated by the presence of toxin, chemical or nutritional product in the intestinal lining. Osmotic diarrhoea is caused by the presence of osmotically active solutes in the intestinal lining that are poorly absorbed by the injection of laxatives such as magnesium sulphate or magnesium hydroxide. Exudative diarrhoea is associated with damage to the mucosa lining leading to outpouring of mucus, blood and plasma protein among other substances. However, it is important to note that the classification of diarrhoea does not influence the causes.

Diarrhoea is a symptom of infection caused by a host of bacterial, viral and parasitic organisms, most of which can be spread by contaminated water. It is more common when there is a shortage of clean water for drinking, cooking and cleaning. Where aetiological agents can be found, diarrhoea in most cases is caused by three major groups of microorganisms – viruses, bacteria and protozoa or parasites (Lucas & Gilles 2009). The main agents of diarrhoea according to them are Enteroviruses (e.g. rota-virus, Escherichia Coli, Campylobacter Spp, Shigella, Vibrio Cholerae, Salmonella (non typhoid), Entamoeba histolytica, Giardia Lamblia, Cryptosporidium). These are further grouped in the following ways: Viruses (e.g. Rotavirus), Bacteria (e.g. Shigella, Escherichia Coli, Vibrio Cholerae, Salmonella (non typhoid) Campylobacter Spp) and Parasites (e.g. Entamoeba histolytica, Cryptosporidium, and Giardia Lamblia). Ewuzie (1998) indicated that gastroenteritis can be caused by bacteria and virus, E. Coli serotype and enter-virus or sometimes by irritant foods or even emotional upset. All over the world, viruses especially rotavirus have been identified as the major causes of acute diarrhoea in children. Studies in Nigeria also found virus as the
major cause of diarrhoea in 60 per cent of cases, with bacteria responsible for about only 3 – 20 per cent (Lucas & Gilles 2009). The various causative agents vary according to the signs and symptoms manifesting from the disease. 

The signs and symptoms according to Longmach, Wilkinson and Rajagopalan (2004) are passage of frequent loose watery stools, abdominal cramps or pain, fever particularly if there is an infectious cause and bleeding. Bacteria and parasites often can produce bloody diarrhoea (dysentery). In addition inflammatory bowel disease, polyps and colorectal cancer can cause blood and mucus in the stools, nausea and vomiting may also be present in the case of infection. FRN (2005) identified the signs and symptoms of diarrhoea in terms of severity of manifestations. These include mild diarrhoea, moderate diarrhoea, and severe diarrhoea. In mild diarrhoea, the child is thirsty, the mouth is dry and the child passes less urine and weight loss. In moderate diarrhoea, the child at this stage shows signs of sunken fontanelle, sunken eyes, rapid deep breathing and loss of skin elasticity. In severe diarrhoea, the child shows signs of rapid weight loss and weak pulse, cold limbs (shock or coma).

The main consequences of diarrhoea are frequent loose or watery stools, the risk of dehydration, damage to intestine (especially when there is bloody diarrhoea) and loss of appetite with or without vomiting. However, Victoria et al (2000) asserted that signs of dehydration are not evident until there is acute fluid loss of approximately 4 – 5 per cent of body weight. The signs and symptoms of dehydration include sunken fontanelle, dry mouth, and throat, fast and weak pulse, loss of skin elasticity and reduced amount of urine. The under-five who presents with these signs and symptoms has lost enormous fluid and electrolyte from the body. This loss leads to shock and untimely death of the under five. Werner (2001) noted that dehydration takes its heaviest toll on infants and children (the underfive).

Spradley and Allender (1996) stated that diarrhoea is transmitted by contaminated food, and water, dirty feeding utensils (especially feeding bottles and teats) and the faecally contaminated fingers of the infants or the mother. Infection occurs through ingesting food contaminated with adequate doses of Salmonella, Shigella or E. Coli. The cycle begins when the infectious agent multiplies and grows in the food medium. The agent subsequently invades the host upon ingestion of the food. Udoh et al (1995) submitted that the disease is transmitted by direct contact with an infected person or indirectly by contact with articles freshly soiled with discharges of such infected persons.
There are other physical modes of transmission of diarrhoea as identified by the United Nations Children’s Fund – UNICEF (1998) and they include: Poor source of water supply, especially in rural areas; poor environmental sanitation leading to attitudinal problems of defecating in open spaces, pit latrines, bushes and in streams (used for drinking and bathing). The implication of the above transmission results in an outbreak of water borne diseases such as diarrhoea disease, which usually touch on the whole community. Diarrhoea diseases are usually the result of drinking dirty or contaminated water or eating food prepared with unwashed hands or in an unhygienic environment. Also the feeding bottle is a feature of infection (FGN, 2000). Ene (2004) further asserted that the most important pattern of transmission of the causative agents (bacteria, viruses, and Cysts of Protozoa) is the passage of infective material from human faeces into the mouth of a new host and is known as “faeco-oral” or “intestino-oral” transmission. He further explained that contaminated water, food and hands are the main sources of faeco-oral transmission. Lucas and Gilles (2009) also maintained that transmission of diarrhoea occurs by faeco-oral route due to poor standards of personal and environmental hygiene. These conditions will determine the seriousness of infection of diarrhoea.

The main dangers of diarrhoea are dehydration and malnutrition. (WHO, 1993). Dehydration according to WHO is most often caused by loss of a large amount of water and salt from the body. Roy, (2009) explained dehydration as the loss of water from the body, always associated with disturbance of salt metabolism; and symptoms include extreme thirst, weight loss and fever, babies who have diarrhoea and are vomiting are at special risk. Malnutrition is further explained as any disorder of nutrition, whether it is due to dietary deficiency called under nutrition, or to excess, called over nutrition. Malnutrition can be caused by insufficient food intake, and unbalanced diet, or a defect in the way the body uses the food it receives. Park (2009) asserted that scarcity of suitable foods, lack of purchasing power of the family as well as traditional beliefs and taboos about what the body should eat, often lead to an insufficient balanced diet, resulting in malnutrition. Malnutrition in this study can be caused by an inadequate diet due to poverty, a lack of appropriate foods or incorrect beliefs about feeding, frequent infections of which diarrhoea is one of them. The most important aspects of managing a child with diarrhoea are preventing or treating dehydration and maintaining good nutrition.

The preventive practices according to WHO – include breast feeding, improved weaning, use of plenty of water for hygiene and clean water for drinking, hand washing, use of latrines, proper disposal of the stools of young children and immunization against measles:
Exclusive breast feeding during the first 4 – 6 months greatly reduces the risk of severe or fatal diarrhoea and the risk of other serious infectious is also reduced. Ene (2004) also asserted that breast feeding of all infants should be encouraged, since breastfed babies are not susceptible to diarrhoeal disease. Park (2009) affirmed that breast milk contains antimicrobial factors such as macrophages, lymphocytes, secretary IgA, anti-streptococcal factor, lysozyme and lactoferrin which provide considerable protection not only against diarrhoeal diseases, but also against respiratory infections in the first months of life.

Park (2009) reported that since 1993 WHO’S efforts to improve infant and young child nutrition have focused on promoting breast feeding. He further explained that breast feeding could prevent deaths of at least one million children a year, and this led to the creation of “baby-friendly hospital initiative” (BFHI) promoted by WHO and UNICEF. Breast feeding alone sustains a baby for the first 6 months after which weaning foods are required.

Weaning according to Gibbons, and Griffiths (1997) is the period during which the infant gradually progresses from milk diet to a diet entirely made up of foods usually consumed by the family. WHO (1998) defined weaning as the process by which an infant gradually becomes accustomed to an adult diet. Anyakoha (2007) explained weaning as the process of gradually introducing a child to other foods apart from milk. During weaning, supplementary foods other than milk are introduced in order to meet the child’s increased nutritional demands. This should begin when the baby is 6 months because the mother’s milk alone is not sufficient to sustain growth beyond six months. These supplementary foods should be rich in protein and other nutrients like cow’s milk, fruit juice, soft cooked rice and vegetables (Obionu, 2001). The child’s diet should be prepared immediately they are ready to take, to avoid prolong storing and in a clean environment. Weaning, if not done properly, is often followed by diarrhoea, and other recurrent and persistent infections which may be fatal. A knowledge of weaning foods and practices is an important aspect of preventive and social paediatrics. WHO (1993) asserted that mothers should be taught ways of preparing, giving and storing weaning foods that minimize the risk of bacterial contamination, and these include: washing hands before preparing weaning foods, preparing food in a clean place, cooking or boiling the food well, preparing the food immediately before it will be eaten, covering food that is kept, feeding the baby with clean spoon and washing uncooked food in clean water before feeding it to the baby.
Cameron and Hofvander (1998) opined that most infectious agents that cause diarrhoea are transmitted by faecal – oral route, and this includes transmission by contaminated drinking water or contaminated food and from person to person. They further explained that a plentiful supply of water helps to encourage hygienic practices, such as hand washing, cleaning of eating utensils and cleaning of latrines; these practices can interrupt the spread of infectious agents that cause diarrhoea. Water should be collected from the cleanest available source and stored in clean containers to be emptied and raised. It is more important that the water supply be abundant and clean. Clean water is essential however, for drinking and for preparing food.

Proper hand washing according to Partnership for Transforming Health Systems – PATHS (2005) is among the universal hygienic precautions that should be adopted by women to prevent occurrence of diseases. Proper hand washing entails use of clean water and soap to ensure total elimination of germs underneath the nails that may have access to the child’s food. Hand washing is especially effective for preventing the spread of Shigella, which is the most important cause of diarrhoea. Hands should be washed carefully after defecation, before handling food and before eating. All the aforementioned hygienic precautions are likely to reduce the risk of infection and improve the health status of the child bearing mothers and their children (PATHS, 2005)

PATHS (2005) maintained that human faeces should be disposed of in a way that prevent them from coming into contact with hands or contaminating a water source. This could be achieved through the regular use of a well – maintained latrine. The proper use of latrines can reduce the risk of diarrhoea. Proper disposal of faeces of human beings is important because stools that are disposed indiscriminately create hazardous conditions like transmission of disease. Because of this, the use of clean functioning latrines should be encouraged and their cleaning emphasized.

Young children are frequently infected with enteric pathogens and their stools are important source of infection for others especially children with diarrhoea (WHO, 1998). Therefore, hygienic disposal of the faeces of all young children is an important aspect of diarrhoea prevention. The WHO further stated that the stool of young children should be collected quickly, wrapped in a leaf or newspaper and buried or put into the latrine; or helping a young child to defecate into an easily cleaned container, which should then be put into a latrine and the container washed out or a child who has defecated should be cleaned properly, the child’s hands washed and the person who has cleaned the child should also wash his or her hands thoroughly (WHO, 1998).
Werner (2001) noted that children who have measles or have had the disease, have a substantially increased risk of developing severe or fatal diarrhoea or dysentery, she further stated that the increased risk lasts up to 6 months after measles episode. Because of the strong relationship between measles and serious diarrhoea, and the effectiveness of measles vaccine, immunization against measles is a very cost-effective measure for reducing the morbidity and mortality associated with diarrhoea, (Werner, 2001). Prevention, they say is better than cure. Therefore, children should be immunized against measles soon after nine months of age. Measles vaccine given at the recommended age can prevent up to 25 per cent of diarrhoea associated deaths in children under five years of age. (WHO, 1998).

The management of acute diarrhoea in infants and young children is mainly concerned with preventing and treating dehydration by giving appropriate fluids, and with maintaining growth by proper feeding (PATHS, 2005). Home management or treatment is an essential part of the correct management of acute diarrhoea because diarrhoea begins at home. Mothers should be able to carry out home treatment before seeking medical care. The three rules according to WHO (1998) for home management of diarrhoea are giving the child more fluids than usual to prevent dehydration, giving the child plenty of food to prevent malnutrition and taking the child to the health worker if he or she is not getting better. The fluid include Oral Rehydration Therapy (ORT) or Salt Sugar Solution (SSS) and Oral Rehydration Solution (ORS) fluids and other fluids like breast milk, rice water and pap. Victoria, Bryce, Fountaine and Monasch (2000) defined ORT as the use of Oral Rehydration solution, a recommended home fluid or increased intake of liquids during a bout of diarrhoea. They noted that ORT consists of the oral administration of Sodium, a carbohydrate and water. According to Obionu (2001) ORT is a very effective way of combating mortality due to acute diarrhoea, which is capable of causing dehydration and shock in a very short time in a child. Oral Rehydration Therapy from the foregoing may mean making use of home made fluids such as pap, salt sugar solution (SSS), rice water, breast milk (etc) or Oral Rehydration solution in managing a bout of diarrhoea.

ORS is WHO/UNICEF (1993) standard formula noted to be the best way to replace water and salt lost during diarrhoea. WHO (1993) stated that it provides exactly the right balance of glucose and salt. ORS is prepared by dissolving ready-made packet of the salt into a litter of water which is equivalent to one beer bottle or two bottles of Coca-cola. The solution so made is discarded after twenty four hours to avoid contamination. It is estimated by WHO (1994) that two-thirds of the world population can obtain ORS packets close to their homes as more than 60 countries including Nigeria, produce ORS packets. Where ORS is not
available however, other recommended home fluids should be used to prevent dehydration. Fluid recommended in addition to breast milk according to Victoria et al (2000) includes SSS.

SSS is the home version of ORS, involving the use of common salt, white sugar and water. The content is 3g (half of level standard or 5ml teaspoon of salt), five cubes of sugar or 10 level teaspoon of granulated sugar mixed in a litter of clean water or its equivalent of one beer bottle or two bottles of coca-cola. Cutting (1994) stressed that the water for preparing salt sugar solution must be clean but not necessarily boiled. According to Ekenedo (1994), this method is advocated by Nigerian Government and is one most commonly taught by health educators to mothers attending antenatal clinics. The reason for this might be that the ingredients can easily be found in the home and may also be cost effective and acceptable.

The other method is the food salt Solution (FSS). WHO (1993) noted that food salt solution could provide an alternative to salt sugar solution. WHO noted that the solution could be looked on as drinks, which are familiar, easy to prepare and acceptable for giving to children with diarrhoea. Such drinks according to WHO, include food based fluids, which contain cooked starch and protein such as cereal soup, porridges and pap. Continuing, WHO pointed out that the addition of salt (up to 3g) would increase the effectiveness and also promote sodium absorption more effectively than SSS. This is because WHO observed that FSS contains more carrier molecules (glucose and amino acids derived from starch and protein) necessary for water absorption in the gut. Materials for this method most likely may be found in the home.

Another method of ORT as recommended by WHO (1990) is Weak Cereal Solution (WCS) to promote drinks, which are familiar and commonly available, but which contain no added salt and relatively little starch or protein. This includes weak cereal solution such as rice water, water in which other cereals have been cooked and plain water. According to WHO, this method should be considered when the use of food based fluids containing salt is not feasible.

Cutting (1994) stressed that drinking extra fluid in the early stages of diarrhoea is crucial in preventing dehydration and subsequent death. He also noted that the combination of giving more fluid than usual as soon as diarrhoea starts and continuing feeding is an effective home therapy for acute diarrhoea. Ene (2004) maintained that breast feeding and ORT should be used on children with diarrhoea, since it is highly effective in preventing death from dehydration and reduction of diarrhoea in new born babies.
WHO (2003) document specifically expressed two recent advances managing diarrhoeal disease – newly formulated Oral Rehydration Salt (ORS) containing lower concentration of glucose and salt, and success in using zinc supplementation. Zinc is one of the micro nutrients our bodies require in small amounts in order to stay healthy. Roy and Tomkins (1994) enumerated the importance of zinc which include: Zinc is needed by children to grow and develop normally, as well as to fight infections and repair damaged tissue; zinc is also necessary for the lining of the intestine to function well; it plays a special role in enabling the body to use vitamin A. Another key micronutrient which increases children’s ability to fight infection, and has also been found recently to be crucial in enabling malnourished children to recover from diarrhoea. The best sources of zinc are meat, fish, breast milk, cereals. Zinc supplementation in combination with ORT has been shown to significantly reduce the duration and severity of acute and persistent diarrhoea and to increase survival in a number of randomized control trials (Park 2009).

Knowledge and Practice.

It is pertinent to note that adequate knowledge of the concepts, causative agents, manifestation, mode of transmission, preventive measures and management of childhood diarrhoea discussed above is a major step in the identification of the diseases and their prevention and management practices. Knowledge of the disease could be acquired in the school, in the case of those who are literate, or through health talks given while attending antenatal clinics. This knowledge is desirable among mothers including those of Ezeagu LGA, where the present study will be conducted, because as pointed out earlier, mothers have been traditionally recognized to be responsible for the health care of their children and other members of the family.

The more one learns to use the knowledge he or she has and the knowledge he or she is steadily accumulating from scientific investigation, the greater facility he will have in understanding and solving his problems (Oberteufer, 1980). This can be linked to childhood diarrhoea knowledge with respect to its application in developing desired attitude or attitude change, making informed choices for solving problems of health care. Knowledge is critical to man’s quality of life because everything we do depends on knowledge. Though knowledge alone may not be enough to ensure modified behaviour, Oberteufer (1980) maintained that human’s capacity to understand and solve own problems is enhanced by his or her ability to judiciously use the knowledge obtained from various sources.
Conforth (1966) defined knowledge as the sum of conceptions, views and propositions which have been established and tested. Horn (1979), conceived knowledge as the accumulated facts, truths, principles and information to which the human mind has access. He emphasized that knowledge is the outcome of specified rigorous enquiry, which originated within the frame work of human experience. He concluded that knowledge could be seen as the product of the operation of man’s intellect, either within or apart from human experience. Omoregbe (1998) refers to knowledge as the awareness of factors associated with something. This means that for a person to be knowledgeable of something, he or she must be aware of the property of the object, event or situation. Knowledge means the information, understanding and skills that one gains through education or experience (Hornby, 2001).

Kant (2000) stated that we need sense – perception as well as reason to produce knowledge. He made this clear by projecting the three things that are involved in the act of sense – perception that give rises to knowledge namely; the object perceived, the sense organ with which it is perceived, and the ego or consciousness or, the subject that interprets what is perceived and gives it a meaning.

Mouskin and Miller (1990) stated that it is essential to determine both the extent and quality of knowledge that a person has about a particular issue. This, according to them, is because knowledge is instrumental in accepting or resisting any change. Mba (2001) argued that one of man’s greatest enemies is ignorance. He maintained that knowledge will give one necessary power and put one in the appropriate frame of mind for positive attitude and practice.

Knowledge can be classified into empirical knowledge, inferential knowledge, intuitive knowledge and priori knowledge. Empirical knowledge is the knowledge acquired through sense – perception, that is, through any of the five senses (Omeregbe, 1998). Inferential knowledge is the type of knowledge that is acquired by inference. The intuitive knowledge is knowledge gained by an immediate contact of the mind with the object without going through the process of reasoning (Omeregbe, 1998). Kant (2000) described priori knowledge as knowledge acquired prior to experience and independently of experience. In other words, it is knowledge acquired without experience. Following the above description of knowledge, the present study will focus on empirical knowledge since childbearing mothers may acquire knowledge of childhood diarrhoea through their senses as gateways of knowledge.
The hierarchy of Bloom’s Taxonomy of educational objectives as asserted by Opara (1993) revealed that knowledge is acquired and utilized from simple to a more complex form. This involves knowledge of facts, understanding of information, its application to solve daily life problems, analysis and synthesis of facts, and final evaluation of the result. According to him, dealing with health behaviour from the perspective of knowledge and how it influences behaviour is a multidimensional problem because of the various alternatives that exist in the knowledge component.

Knowledge according to Winifred (1989) is accumulated facts, truths, principles and information to which human mind has access. Knowledge can be defined as the sum of conceptions, views and prepositions which has been established and tested (Conforth, 1996). In the context of this study, knowledge refers to the act of having adequate information and understanding of the concept, signs and symptoms, modes of transmission and management practices of diarrhoea by the child bearing mothers. In the context of this study, childhood diarrhoea knowledge refers to the act of having adequate information and understanding of the concepts, signs and symptoms, modes of spread, preventive measures and management practices of diarrhoea among children (under-five).

Nweke (2000) specified that the level of knowledge might be determined by any of the following methods: observation schedules, interviews, questionnaire, checklist, anecdotal records and rating scales. He also stated that tests of various sorts might be used either for diagnostic purposes or for measuring achievement. Observation schedules, according to him, involve watching people, events, situations or phenomena, and obtaining first hand information in relation to a particular aspect of such people, event, situation or phenomena.

Brown, Oke and Brown (1996) submitted that questionnaire could be used to obtain information on the feeling and perception of a group of people toward things or their level of knowledge in certain issues. They further explained that questionnaire for any survey may be designed to take the form of checklist, open or closed ended response type. Best (1997) asserted that the open response types are the most flexible of the objective item types and can be used to assess the level of knowledge and the use of skills of comprehension and application. He further stated that the alternative response item, such as “True and False” item could be used effectively to appraise knowledge regarding a particular aspect of a problem. However, this will not be applicable to the present study.

Akuezuilo (2000) noted that the questionnaire might consist of categories of questions or items, which may include, closed or structured and open or unstructured response types.
He further explained that each category of questions might be used alone or in combination with others, depending on the nature of the problem and the characteristics of subjects being studied. He also pointed out that the personal presence of the researcher does not influence the response in the use of questionnaire and the researcher is able to gather data from widely scattered sample. This quality gave it an advantage over the other techniques described and thus, made it the preferred technique for the present study.

Level of knowledge can be measured in a number of ways such as the application of the principle enunciated by Ashur (1977) as criteria for describing level of knowledge. These will be utilized for providing answer to the principle research questions posed in the study, in this regard, a proportion of less than 40 per cent will be considered low level of knowledge; 40 – 50 per cent will be considered average or medium level and while 60 – 80 per cent will be considered high level of knowledge; above 80 per cent will be considered very high level of knowledge. For the purpose of this research, the above standardized proportions were utilized in determining the level of knowledge of mothers regarding childhood diarrhoea in Ezeagu LGA.

The Nigerian Education Research council (NERC) (1982) asserted that an educated and knowledgeable person is one who understands, among other things the basic facts concerning health and disease and protects his own health and that of the community. WHO (1995) also maintained that if a person is well informed in the area of health, he or she would be able to reject practices that imperil his or her health. The individual will also be well equipped to make the right decision concerning the children and family, and will play active role in improving the society in which the person lives. Adequate or high level knowledge of the concepts, signs and symptoms, modes of transmission of diarrhoea is capable of guaranteeing proper management practice of diarrhoea among children.

Management and management practice.

Management according to Osinem (2008) is described as the co-ordination of all the resources of an organization through the process of planning, organizing, directing and controlling in order to attain organizational objectives. Koontz and Weightrich (2005) described management as the process of designing and maintaining an environment in which individuals working together in groups efficiently accomplish selected aims. Hornby (2005) further explained management as the act or skill of dealing with people or situations in a successful way. Management as defined by wikipedia, the free Encyclopaedia (2007) is the act and science of getting things done through others. It can also refer to the person who
performs the act of management. Nnadi (2010) further defined management as man with exceptional ability to achieve outstanding result through controlling men who perform tasks for due compensation to satisfy their individual objectives. Management in this context, involves succeeding in doing or producing something like proper breastfeeding washing cooking and eating utensils, keeping the environment clean and producing oral rehydration solution to cope or manage with childhood diarrhoea by childbearing mothers in Ezeagu LGA. Ekenedo (1994) noted that there was a relationship between knowledge and management practice adopted by mothers. She concluded that better life will not come from more acquisition of knowledge but from its practices.

Practice, another concept in this study is described by Borne (1996) as performance, thinking, feeling and behaving normally towards something or somebody in the environment. Practice, according to Hornby (2005) simply means performance. It is the way of doing something that is common. Neisten (1998) defined practice as the process of carrying out an idea or plan. It is an established way of doing something. He further stated that the goal of health is positive health practice and not mere health knowledge. Funks and Wagnalls (2003) define practice as any customary action or proceeding regarded as individuals habit. Sally (2004) further defined practice as an established way of doing things especially one that developed through experiences and knowledge. Practice has to do with actions taken by the individual mother, which automatically makes an impact on her health, family health and other social communities. When management relates to practice, it becomes management practice.

Bucher (1994) perceived management practice as the application of good health actions to ones daily living such as proper personal hygiene and nutrition. UNICEF (2002) submitted that in Nigeria, infant mortality rates are twice as high in rural settings as they are in urban ones due to poor hygiene and sanitation. Of the annual three million infant births in Nigeria, approximately 170, 000 result in death that is mainly due to poor knowledge and management of childhood diarrhoea. In this study, management practice refers to all the actions that are undertaken by mothers to avert childhood diarrhoea. Childhood diarrhoea practices can be measured.

Practice can be measured by using responses like “Yes” to a practice that has taken place or “No” to an action or behaviour that the individual does not adopt while “not sure” will be used for neutral responses (Ifegbesan, 2010). This “Yes”, “No” or “Not Sure” scales as emphasized by Ifegbesan (2010) will therefore be used to measure the practice of mothers towards childhood diarrhoea in Ezeagu LGA of Enugu State.
Factors associated with knowledge and management practices of mothers.

Numerous factors according to Parades (1992), affect when and where families seek help and why they may not use modern health services. For instance, he pointed out that cultural beliefs and attitudes affect how a family perceives a child’s illness and the treatment options available to them. Malantinema (1994) affirmed that cultural attitudes and beliefs affect use of health services by a given population, and might also affect the management practice of mothers regarding childhood diarrhoea.

Population Report (1985) showed that age, parity, educational level, location and employment had major influence on utilization of health services. According to the report, there was high use rate amongst women aged 30 – 39 years and least among women age below 30 years. The use rate was also high among women with 2 to 3 children, better – educated women and among urban women. Some of these factors might also be implicated in the knowledge and management of childhood diarrhoea by childbearing mothers. Experience is said to be the only teacher; it might be expected that educated women and women with more than a child may have high level knowledge and will manage childhood diarrhoea more due to their experience. Ikorok (2003) also affirmed that mothers educational status influence their perceive effectiveness and options adopted. Other factors she claimed were availability of traditional healer, church, self-medication, cost and ignorance.

Afolabi, Ekanem, Sodeinde and Randle (1995) reported that age and educational status significantly influence mothers’ health seeking behaviour but not treatment. World Health Organization (1993) revealed that physical access, consumer barrier, lack of information and motivation, conflicting beliefs or poor social system contributed to the poor practices of health services in Nigeria. It is also pertinent to know that some of those factors may have significant influence on the management of childhood diarrhoea by mothers.

Roy (1990) reporting the factors affecting the use of ORT in India, claimed that many people did not know the cause of diarrhoea. They often believe teething was responsible. It was also their belief that giving a child more drinks would increase diarrhoea. In Brazil, Zoysa (1992) reported that mothers out of ignorance, perceived diarrhoea as a variety of folk maladies, evil eye, fright disease, spirit intrusion, intestinal heat or sunken fontanelle and as a result did not use ORT. In studies conducted in Nigeria, UNICEF (1993) revealed that in Cross-River State, the under utilization of ORT was due to ignorance and lack of faith in the solution.
Khnor (2002) reported that in South Africa, effective management of childhood diarrhoea was limited due to misunderstanding or misconceptions on the part of the caregivers. The reasons given by health workers included lack of time to explain the management practices especially the preparation of ORT to mothers. In a Health Strategy consultative meeting organized jointly by the International Peoples’ Health Network held in Penany in the late 1994, Khnor reported that ORT usage had declined significantly in many countries. In the ORT programme, he observed that emphasis was led on selling manufactured packets of ORS to people rather than teaching them how to use inexpensive family prepared home fluids. Jelliffe and Jelliffe (1996) asserted that the beliefs concerning the cause of diarrhoea vary widely in different cultures. They explained that diarrhoea may be considered to result from normal developmental events in young children (e.g. teething, crawling) or from eating certain foods, perhaps because of the special properties of those foods (e.g. hot or cold foods). Other supposed causes of diarrhoea includes: magic, e.g. the effects of the ‘evil eye’ or bewitchment; special cultural beliefs or worm. (Jelliffe & Jelliffe, 1996).

![Diagrammatic representation of the conceptual framework](image-url)

- **Childhood diarrhoea**
  - Knowledge
    - Concepts
    - Causative agents
    - Signs and symptoms
    - Modes of spread
  - Management Practices e.g. ORT,
    - Promotion of breastfeeding,
    - Improving weaning practices
    - Improving water supply and sanitation
    - Promoting personal and domestic hygiene
    - Measles immunization
    - Zinc supplementation

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**Diagrammatic representation of the conceptual framework**
Theoretical Framework

Theories play essential role in Health Education research and are common health educator’s most useful tools as they tackle health challenges. Babbie (2003) defined theory as a systematic explanation for the observations that relate to a particular aspect of life. Many theories in health education and health promotion seek answers to the fundamental questions for why people behave the way they do. More specifically, theories are used to try to understand and predict how and why people change their unfavourable behaviour to favourable ones.

The desire to effect change in behaviour for reducing the risk of future illness according to Philips (1991) should be based upon theoretical models that identify predicators of behavioural change. Several model or theories concentrate on the significance of socio-cognitive variables in preventive health. Theoretical models relevant to childhood diarrhoea knowledge and management practices among mothers in the context of the present study will include the following: Health action process approach (Schwarzer, 1992), Systems management theory (Lonsdale, 1964) and Self efficacy theory (Bandura, 1986).

Health action process approach.

The health action process approach propounded by Schwarzer (1992) contends that different factors are at work when a person is deciding which health action(s) to adopt – a period of time he calls the motivation phase (decision-making phase). This decision is operative during the action (volition) phase. The model further states that the most important predictors of intentions are risk perception outcome expectancies and self-efficacy. One outstanding thing about this theory is that it postulates that actions are not only a function of intentions and cognitive control but also are influenced by perceived and actual environment (Wallston & Armstrong, 2002).

This theory appears to support one of the aims of this study, that is, to determine the level of knowledge of the signs of danger in emergency cases of childhood diarrhoea by mothers. The mothers may or may not perceive the outcome of their behaviours in cases of emergency like dehydration. Delays to seek management practices may emanate from the environment such as relations, friends or traditional birth attendants, hence the significance influence impinge on mothers by environment may hinder health behaviour or adequate management practices.
**Systems management theory.**

The systems theory of management propounded by Lonsdale (1964) has remained outstanding in management research. According to him, an organization is a system with different units and all the units must be functional if the goals of the organization are to achieved. In other words, every unit is independent on each other for the effective functioning of the organization. Lonsdale conceptualized a system as a collection of parts of a system is removed, the nature of the system is removed, the nature of the system is changed as well. He exemplified this with a functioning car with all the components in order. If the carburetor is removed, it is no longer a working car, and would not render the services of a car. He therefore proposed a holistic approach to management of organization (system theory of management).

This theory has received support of many renowned researchers (Kelly 1978, Nwachukwu 1998, Burke, 1994 and Meyer & Allen, 1997). For example Nwachukwu, (1998) stressed that for a system to function effectively; the subsystems must function effectively to achieve the goals of the system. The sub-systems are inter-dependent. When any of them fails to function effectively, the entire system experiences a severe setback.

In the case of diarrhoeal management, every unit involved in keeping the child healthy has to be functional. For example, proper washing of hands, drinking safe water, proper breastfeeding, proper disposal of feaces and adequate preparation and use of ORS has to be done and made effective for the child especially during diarrhoeal episode. The present study therefore adopted this theory to clearly bring out the components of the management practices of mothers as a unit to achieve success in childhood diarrhoea.

**Self efficacy theory.**

Regarding practice, self-efficacy theory is adopted. This theory holds the belief that one is able to control one’s practice of a particular behaviour (Bandura, 1986). Schwarzer (1992) and Owie (2003) asserted that self-efficacy refers to one’s belief that one can successfully execute a particular action. Taylor (2003) opined that people are more likely to engage in certain practice when they believe that they are capable of executing those practices successfully. In ordinary terms, self-efficacy could be looked at as self confidence towards action. In analyzing this, individuals tend to choose activities they will be successful in doing, and tend to put more effort to the activity and behaviour they consider they could
achieve successfully. A person may believe, for example, that he or she can stop particular contra-indicated health behaviour.

Self-efficacy is very effective, because of its influence on certain effective behaviour control. In application, if mothers are to adopt the correct management of diarrhoea disease and if they do it regularly and successfully, it will then imply that they have high efficacy. On the basis of this, therefore, the theory of self-efficacy will be the theory of anchor in ascertaining the management of childhood diarrhoea by mothers. In summary therefore, health action process approach, systems management theory and the theory of self-efficacy are the theories of anchor for this study.

Diagrammatic expression of the theoretical framework
Empirical Studies on Knowledge and Management Practices of Mothers

This section is concerned with the review of empirical studies conducted in the areas of knowledge and management practices of childhood diarrhea by mothers.

Nepal National Planning Commission in collaboration with UNICEF (2006) carried out a study on Diarrhoea, water and Sanitation as Nepal Multiple Indication Surveillance. The objective was to find out how much food and fluid were given during diarrhoea and the number of households that use ORS. A descriptive survey design was used for the study. A study sample of 17,227 households, collected through clusters comprising communities of around 120 households. The instrument for data collection of this study that was carried out between February and April 2006 were focus group discussion, questionnaire and key information interview. The data was analysed using frequency counts and percentages. The findings showed that half of the people believed that more food should be given and one third believed less fluid should be given. Some gave no fluids. Some of the weakness of the research was that, it did not inquire about the socio-economic status of the people studied, and the age group mostly affected.

Martinez, Meneses, Bernard and Pelto (2006) studied the selection of culturally sound fluid management of infantile diarrhoea. A descriptive survey research design was adopted for the study. A study sample of 142 mothers from 12 villages of rural Mexico was obtained through random sampling. The instrument for data collection was questionnaire and oral interview. For data analysis, percentages were used. The findings showed that teas were used by 90% of the mothers interviewed, rice based beverages which included rice water and rice gruel were used by 77% of them. Another 19% said they would accept using rice beverages if advised to do so. A key difference was that teas were mainly used as a treatment to stop diarrhoea while rice-based gruels were used as a palliative to soothe the child. Rice based beverages were selected to be further tested as a likely rehydration solution as mothers reported using them longer than tea during diarrhoea episode. The study established the fact that mothers have some knowledge regarding home management of diarrhoea by using home based fluid but it failed to include other caregivers and what was the next line of management if the diarrhoea failed to stop.

A study was conducted by Oni (2005) on diarrhoea disease morbidity in Ilorin, Kwara State. The objective of the study was to examine the treatment and knowledge of mothers of the risk factors associated with diarrhoea. A sample of 351 households was selected through
random sampling. The methods of data collection were oral interview and questionnaire and percentages were used as method of data analysis. The findings showed that mothers’ total lack of knowledge about diarrhoea was noted as a major factor that influenced their management strategies. ORT was only used during 15% of the days that children had diarrhoea. Antibiotics were, however, used on over half the days when children had diarrhoea. It was noted that among the households using antibiotics, over half bought them without seeking medical advice. This brought to the forefront, the wrong belief on the management strategy of diarrhoea by mothers.

In a related study, McLennan (2004) examined the children at risk of childhood diarrhoea, in a poor pre-urban community in Dominican Republic. A randomized sampling technique was adopted and 582 caregivers of children aged five years and less were used for the study. The method of data collection was structured questionnaire while percentages was used as the method of data analysis. In the study, 46% of the caregivers reported that one or more children had had diarrhoea during the month prior to the interview while 81% reported that one of their children had had diarrhoea, 58.4% gave rehydration solution during the episode of diarrhoea, 33.7% took the child to a doctor, 23.9% gave juice and 18.7% used medications. The caregivers recommended multiple dietary restrictions in response to childhood diarrhoea; over 90% stopped the use of oil rich food, 3% stopped breast feeding, one third stopped rice and beans. About 90% correctly identified that 1 litre of water was required to prepare ORS (a package), 8% could not remember, 1% reported using more than 1 litre while another 1% used less than a litre. To an open question, 47.9% responded that the function of ORS was rehydration and replacement, 24% indicated that it directly stops diarrhoea, 24% reported that it helped the nutritional state of the child or prevent malnutrition. About 77% have used ORS. The most common impediment to the use of ORS included that diarrhoea was not felt to be so watery or loose to require ORS, refusal of the child to drink ORS and lack of money. Twenty one per cent reported that they had used a home made SSS. Other treatments, 83% reported use of coconut oil, 75% used herbal tea, 73% used antibiotics while 31% reported that they bought drugs without prescription for childhood diarrhoea. Majority gave prolonged diarrhoea (3 or more days) as reasons for seeking medical help.

Dialogue on Diarrhoea Issues (2004), conducted a survey on the attitude of mothers to diarrhoea. The attitude of mothers to diarrhoea. The objective was to evaluate the attitude of mothers to diarrhoea and its management in six states. A randomized sample of 6,000 mothers in six states of India (Bultar Pradesh, Rajasthan, Orissa, Baryan, Naharashta and
Tamil Nadu) were used. The instrument for data collection was the questionnaire and structured interview. Percentages were used as the method of data analysis. Results showed that practice of increasing the amount of fluid given during diarrhoea was low. In 78% of the cases, the fluids used was not based on ORS (ORS was only used in 12% of the cases). Most mothers continued to breast feed and a small number continued semi-solid feeding. Only a third of the mothers knew that dehydration was the dangerous effect of diarrhoea and were able to name three or more symptoms of dehydration. Medical consultation took place only in 65% of the cases. However, majority consulted untrained hands. Less than 10% consulted government health facilities. The survey further showed a clear need for better training of health personnel and for improved health education. Mother’s desire to stop diarrhoea was noticed as the major determinant factor to her approach to the problem. The study pointed out a reduction in the number of cases with improved education, access to safe drinking water, better housing, sanitation facilities and personal hygiene of mothers.

In 2003, a study was conducted in the village of Al-Jib in the Ramallah district of Palestine by Abu Hijleh to investigate mother’s knowledge, and practice regarding diarrhoea management. Thirty randomly selected households were used and mothers who have children of five years of age or less and had diarrhoea at least once since birth were interviewed. Percentages were used as method of data analysis. The result showed that 87% of mothers believed that teething, extreme climate hygiene and bottle feeding are the main causes of diarrhoea, 10% of mothers wash their hands every time before breast feeding, 66% wash the bottle every time before use. 80% consider their child having diarrhoea when both watery and loose stools are passed more than five times a day. 80% manage diarrhoea at home. In case of treatment at home, 47% used rice water, 16.6% used fried potato, 13.3% used transitional herbs, 13.3% used yoghurt, 13.3% used gaseous beverages, 10% used lemon and sugar, 10% used weak tea, 3.3% used water in which some barley was soaked and 1.6% used starch with water. None of these mothers prepared ORS in the satisfactory manner though satisfactory is not defined. 70% of the mothers learnt about ORS from television and radio, and 30% from health workers. All mothers used drugs as treatment for diarrhoea if recommended by a doctor. The author recommended a health education programme for mothers an management of diarrhoea at home.

Igboeli (2003) conducted a study on the evaluation of training of mothers on the preparation of Salt Sugar Solution in Njilkoka Local Government Area of Anambra State. A multi-stage random sampling technique was used to draw a sample of 250 mothers in Njikoka LGA. The method of data collection was the use of oral interview and questionnaire. The
A descriptive research design was used for the study. Method of data analysis was percentages. The result showed that while 92% respondents knew the recipe for SSS, only 59.4% could describe the methods of preparation. About 93% health personnel taught respondents how to prepare SSS. The main locus for training was health (91.6%), preferred method of teaching SSS as lecture/demonstration. 78% of mothers reported that they had practiced the preparation of SSS, only 32.6% of the practice was supervised, while 83.3% women experienced no problems with preparing SSS, 19.7% had difficulties.

Fontaine (2000) carried out a study on the preparation of Salt Sugar Solution in Bangladesh. More than 13 million mothers in Bangladesh were used as the sample for the study. An educational programme was mounted and field trial was used as the method of data collection. He reported that since rice was more available in rural homes (95%) than any type of sugar (30%) and rice gruel was a widely accepted food during illness, a field trial was conducted in three areas (total population, 68,345) to compare the acceptability and use of rice based ORT with that of sugar based ORT. The result showed that although the mothers unanimously agreed that the rice-based solutions stopped the diarrhoea more quickly, they used the sugar based solution twice often (in 40% of severe watery episodes) as the rice-based solution (in 18%). Reason given was that the rice ORT was much more time consuming and difficult to prepare.

Ejima (1998) studied the correlates of utilization of maternal and child health services in Ankpa Local Government Area of Kogi State. A sample of 600 women in Ankpa LGA were selected through the multi-stage sampling technique. A descriptive survey research design was adopted for the study. The instrument for data collection was the correlates of MCH services questionnaire (CUMSQ). Data was analyzed using frequency. The results showed that parity was a correlate of utilization of under five health services with women without birth experience under-utilizing the service. The result further showed that parity and level of educational attainment were correlates of utilization of antenatal health service with women with low parity and those with no formal education under – utilizing the services. The result also showed that religion, level of educational attainment, occupation and parity were correlates of utilization of postnatal services with older women (39 – 45 years of age), traditional worshippers, those with no birth experience under – utilizing the services.

A detailed study on the beliefs of rural mothers about diarrhoea by Rao, Vinod, Mishra and Rether Ford (1998) was carried out in Orissa. A random sampling of 1000 mothers attending rural referral hospital in Daspalla was used. A descriptive survey design was adopted for the study. The instrument for data collection was structured interviewe.
Method of data analysis was percentages. The results obtained showed that 65% at the mothers thought it was caused by casting of ‘evil eye’; 44% of the women believed it was due to indigestion; 10% believed it was due to ‘hot’ foods such as mango and egg; 8% believed in teething phenomenon and 35% felt it was due to food eaten by breast feeding mothers. 136 mothers blamed their own breast milk for causing diarrhoea. Also the incorrect ideas of mothers were reflected in the manner they managed cases. Cereal food and milk were restricted by 95% of the mothers because they feared it will cause indigestion and even worsen diarrhoea. The findings of this study highlighted the need for well planned intensive health education programmes based on the findings in order to correct wrong beliefs and educate mothers on the factors associated with diarrhoeal disease.

Akpede, Omotara, Webb, and Igene (1997) conducted a survey on the awareness and knowledge of ORT and preparation abilities of salt sugar solution (SSS), using a sample of 260 mothers in rural and urban areas of North Eastern Nigeria using random sampling technique. In order to obtain the required data and information, the study that conducted between March 1993 and April 1994 adopted the instruments like focus group discussion and formal and informal interview. Percentages were used as the method of data analysis. In the survey, 77% of the Kanuri mothers and 84% of the Bura mothers were aware of ORT/SSS: Some intra–regional variations were observed. About 64% of Kanuri mothers and 29% of Bura mothers expected ORT to stop diarrhoea. At least 25% of mothers were unable to properly prepare SSS and the materials and ingredients required for its preparation. These results point to the need to reconsider the content and method of disseminating health education messages in ORT promotion.

Strivasta and Ramsel (1996) conducted a study on the utilization of health services. The objective of the study was to determine the association between education and utilization of health measures. The sample for the study was 30 villages of Kheda District, Gujarat through random sampling. An educational programme was mounted where data were collected. Method of data analysis was the use of percentages. The results showed that there was an improvement of utilization of health services from 48% attendance to 73%. They suggested that the improvement might be as a result of the educational programme mounted. This might imply that women who are educated do better in the management practice of childhood diarrhoea than their uneducated counterparts.

Roy (1995) conducted a study in two villages in Indonesia on the management practice of childhood diarrhoea. A descriptive survey design was adopted for the study. The instrument for data collection was the structured questionnaire. A study sample of 2,250
mothers with children under-five was used; this was done through random sampling. Method of data analysis was percentages. Results showed that the practice of increasing fluid during diarrhoea was discouragingly low. According to the report, mothers did not understand that fluids are needed during diarrhoea. The report also claimed that many mothers know about ORS, but instead of using it at home, they will want to see a doctor whatever their financial or educational status.

A survey of knowledge and practice of mothers in the rural communities of two villages in Sudan regarding diarrhoea disease in children was conducted using focus group discussion and structured interview by Ahmed, Eltom, Karrar and Gilbril (1994). A sample study of 239 mothers with children under-five years was used. For data analysis, percentages was used. The study showed that mothers could define and describe diarrhoea, however awareness about the aetiology and the importance of germs in its causation was low. The majority of mothers attributed diarrhoea to teething, milk of pregnant women, hot food and salty water, less than 40% of mothers identify symptom and signs of “dehydration”, and the need for consultation. Only 20% could relate danger signs to severe dehydration. The ORS use rate was very low (2.1 – 43%). Although awareness about ORS was high (100%), only 25% prepared and used it correctly. However, home – made fluids including rice water, custard, pap and tabaladi juice were used by 45% of the mothers. About 45% of illiterate mothers stop breast feeding and food during diarrhoea, compared to 30% of literate mothers. Withholding of breast feeding and indiscriminate use of drugs and herbs in 30%. The study did not include the drug use rate and reasons for self referral.

Summary of Literature Review

From the foregoing literature review, various authors gave varied definitions of the key concepts used in this study. These are knowledge and management practice. Following from the definitions, the researcher defined knowledge as adequate information and understanding possessed by mothers in Ezeagu LGA as it concerns the concepts, causes, signs and symptoms of childhood diarrhoea. Literature also showed that this disease can be prevented or controlled using different methods, which include personal hygiene, environmental hygiene, active immunization, good nutrition and possession of appropriate knowledge enhances the potency of the preventive measures.

The term knowledge was seen to be a pre-requisite for any health action. It was shown that a knowledgeable person understands the basic facts concerning health and disease and also can protect his or her health and those of the dependants. Practice was conceptualized as
the choice and adoption of the management of childhood diarrhoea by mothers, in order to avail themselves of the life of their children.

The review presents the substance of some various models, which have been developed to operationalize knowledge and practice of childhood diarrhoea by mothers. These three models offer some theoretical frameworks to be utilized in research on mother’s knowledge and practice of childhood diarrhoea. These models also focused on importance of socio-cognitive variables in preventive and curative health. Among these are the health action process (HAP), the systems theory of management and self efficacy theory (SET).

The literature reviewed showed some socio-demographic factors associated with knowledge and management practices of mothers regarding childhood diarrhoea. These factors include age, level of education and parity. According to available literature, most of the studies were carried out abroad and in Nigeria. Of the studies in Nigeria, none of such studies as could be seen in literature has been conducted among mothers in Ezeagu LGA of Enugu State to fill this gap. This trend justifies the present study which aims at investigating the knowledge and management practices of childhood diarrhea by mothers in Ezeagu LGA of Enugu state.
CHAPTER THREE
Methods

This chapter describes the research design, area of study, population for the study, sample and sampling techniques. It also presents the instrument for data collection, validity and reliability of the instrument, method of data collection and data analysis.

Research Design

In order to accomplish the purpose of the present study, the survey research design was used. Gay (1981) described survey research design as being useful for studying a variety of problems involving data collection for either testing hypotheses or answering pertinent research questions concerning the present status of subjects under study. He further stated that this design permits the description of conditions as they exist in their natural settings. Eboh (1998) asserted that a survey designs covers the physical characteristics of people, behaviour as well as their knowledge, attitudes, beliefs and opinions and practices that occurred or are occurring in the population.

The survey research design therefore was considered most appropriate for the present study as it has effectively been utilized in related studies by Raw, Mishra and Rutherford (1998) and Langston and Hill (2004). The successful application of the design by the aforementioned investigators in their respective studies suggests a possible success in its use for the present study.

Area of Study

The study location, Ezeagu LGA is one of the seventeen Local Government Areas of Enugu State. Ezeagu is located some 20 kilometers south west of Enugu, the Enugu state capital in Eastern Nigeria. It is bounded on the north by Uzo-Uwani Local Government Area, on the west by the Awka-North LGA. in Anambra state and on the east and south by parts of Udi L.G.A. Ezeagu LGA is made up of eight communities which include Imezi Owa, Agu obu owa, Mgbagbu Owa, Oghe, Olo, Awha, Umana and Umumba.

The inhabitants of the area are mainly farmers while some few hands are engaged in civil service and trading business. The possible source of water supply range from the use of stream, tanker water to the occasional use of tap water. They also use rain water during rainy season. General environmental sanitation is poor as there are no facilities for refuse disposal. They make use of open refuse dumps such as dumping them into nearby bushes, burn them or dumping by the roadside. They use pit latrines and nearby bushes for sewage disposal.
However, some well-to-do families make use of water closet system. These features make it possible for the spread of diarrhoea among children in Ezeagu LGA.

**Population for the Study**

The population for the study comprised of 3000 registered mothers who attended maternal and child health clinics (MCH) in Ezeagu Health Centres (Udi Health District Board, 2009) which Ezeagu is an integral part. All the MCH clinics located in Ezeagu are made up of three health zonal facilities, namely, Ezeagu North, Ezeagu South and Ezeagu Central (office of statistics, ENSEC).

**Sample and Sampling Techniques**

A sample of 300 mothers representing ten per cent of the study population was utilized for the study. This is in line with Nwana’s (1991) rule of the thumb which states that when the population is a few thousands, 10% of the population will be used. The multi-stage sampling procedure was employed to draw the sample for the study.

In the first stage, stratified random sampling was used to stratify communities into three quarters that make up the Local Government aArea. The second stage involved the use of simple random sampling technique of balloting without replacement to select two health districts. The two health districts have 25 existing MCH clinics (see Appendix A). In the third stage, simple random sampling technique of balloting without replacement was employed to select 12 mothers from each of the 25 MCH clinics. The decision to select 12 respondents from each selected MCH is to ensure equal representation of the mothers for the study. At the end of the sampling procedure 300 respondents was selected and utilized for the study.

**Instrument for Data Collection**

The instrument for data collection was the researcher – designed questionnaire on Diarrhoea Knowledge and Management Practices (DIK.AMP) Questionnaire. (see Appendix B). The questionnaire was divided into three sections, Section A consisted of three items demanding the bio-data (age, level of education and parity status) of the respondents. Section B comprised of twenty one multiple choice questions for testing the respondents’ knowledge of the concept of childhood diarrhea, causes of childhood diarrhoea, signs and symptoms of childhood diarrhoea, modes of transmission, dangers and preventive measures of childhood diarrhea. While section C comprised of the ten items on practice, all assigned dichotomous response options of “Yes” or “No”. The respondents were required to respond “Yes” or “No”
to each statement of the practice. The “Yes” for a practice that has taken place, “No” for an action or behaviour that the individual do not practice.

**Validity of the instrument.**

The validity of the instrument was obtained through the judgment of five experts in the Department of Health and Physical Education, University of Nigeria, Nsukka. Five copies of the questionnaire were given to five experts in the Department of Health and Physical Education, and one in the department of Science Education, University of Nigeria, Nsukka. Their main task was to make careful judgments of the questionnaire and ascertain that the content of the instrument covers the objectives of the study. They were required to check for appropriateness of each item in terms of suitability of the questionnaire items in the instrument and make necessary corrections. Their criticisms and suggestions was used to produce the final version of the instrument for data collection.

**Reliability of the instrument.**

Split-half method was used to establish the reliability of the instrument. Split-half method of assessing the reliability of an instrument was done by dividing the items into two equivalent halves and correlating the scores in one part with the scores in the other part (Frankfort-Nachmias & Nachmias, 2006). The items were splitted into even and odd numbers. The relationship of two halves was computed using Spearman-Brown prophecy formula. Osuala (1982) asserted that Spearman-Brown formula is used to measure the strength of association between pairs of variables measured in ordinal scale. Ogbazi and Okpala (1994) stated that in a reliability test, if the correlation co-efficient index obtained is up to .60 and above, the instrument is considered reliable. The correlation co-efficient that was obtained was up to .60 and above, the DIKAMP questionnaire was considered reliable for the study.

**Method of Data Collection**

In order to gain access to and co-operation from the respondents, a letter of introduction from the Head, Department of Health and Physical Education (HPE), University of Nigeria, Nsukka was obtained by the investigator introducing her and explaining the purpose of the study. The researcher presented the letter to the medical Directors or Chief Nursing officers of all the sampled MCH clinics. The copies of the questionnaire were administered to the respondents in their respective MCH clinics with three research assistants who were briefed on the content and administration of the instrument. The aim was to collect
completed copies back from the respondents and keep the respondents under supervision to ensure they supply independent responses and also assist the illiterate respondents in the reading and writing down their opinions for them. Out of the 300 copies of the questionnaire distributed, 284 copies were returned, this represented 94.7 percent return rate.

**Method of Data Analysis**

The returned questionnaires were properly cross-checked for adequacy of information. Copies that do not have adequate responses were discarded. The responses were coded on computer coding sheets, thereafter the Statistical Package for the Social Sciences (SPSS) Batch System was employed in data analysis. Percentages and mean were used in analyzing their responses regarding knowledge of childhood diarrhea. The data were analyzed on an item–by-item basis to indicate the response frequencies and percentages of respondents according to age, level of education, and parity.

Percentages using an index of Ashur’s (1977) criteria were used for describing level of knowledge and this was utilized for answering the research questions. By this criterion, below 40 per cent score of the respondents was considered low level of knowledge; 40 – 59 per cent was considered average level, a score of 60 – 80 percent was considered high level, while above 80 per cent was considered very high level of knowledge. The research questions were answered using these criteria.

With regard to practice, percentages were used to determine whether the respondents practice each of the items under practice sub-scale. The “Yes” and “No” scale emphasized by Ifegbesan (2010) was used to answer the research questions enquiring into the management practices of mothers. Hypotheses one, two and four were tested using ANOVA while hypotheses three, five and six were tested by means of Chi-square statistic at .05 level of significance at the appropriate degree of freedom.
CHAPTER FOUR
Results and Discussions

This chapter presents and discusses the results of the study on the knowledge and management practices of childhood diarrhea by mothers in Ezeagu LGA of Enugu State, Nigeria. Three hundred copies of the questionnaire were distributed and all were collected back making one hundred per cent return rate. Out of this number, sixteen were discarded due to lack of completeness of information. The remaining two hundred and eighty four (284) copies were used for analysis.

Results

The results of this study are organized and presented in two parts thus: Data answering the research questions and data testing the null hypothesis.

Research Question One.

What is the level of knowledge possessed by mothers regarding childhood diarrhoea? Data answering this research question are contained in Table 1 below

| Level of Knowledge Possessed by Mothers Regarding Childhood Diarrhoea (KCD) (N=284) |
|---|---|---|
| N | $\bar{x}$ (%) | Decision |
| KCD | 284 | 71.21 | High level |

Table 1 show a mean score of 71.21 per cent, which fell between 60-80 per cent. This shows that the mother's level of knowledge regarding childhood diarrhoea was high.

Research Questions Two.

What is the level of knowledge possessed by mothers regarding signs and symptoms of diarrhoea? Data answering the above research question are contained in Table 2 below.
Table 2

**Level of Knowledge Possessed by Mothers Regarding the Signs and Symptoms of Childhood Diarrhoea KSSCD (N=284)**

<table>
<thead>
<tr>
<th>N</th>
<th>(\bar{x}) (%)</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSSCD</td>
<td>284</td>
<td>84.95</td>
</tr>
</tbody>
</table>

Table 2 shows a mean score of 84.95 per cent, which is above 80 per cent. This indicates that the mothers’ level of knowledge of the signs and symptoms of childhood diarrhoea was very high.

**Research Question Three.**

What is the level of knowledge possessed by mothers regarding modes of transmission of childhood diarrhoea? Data answering the research question are contained in Table 3 below.

Table 3

**Level of Knowledge possessed by Mothers regarding the Modes of Transmission of Childhood Diarrhoea KMTCD (n = 284)**

<table>
<thead>
<tr>
<th>N</th>
<th>(\bar{x}) (%)</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMTCD</td>
<td>284</td>
<td>76.58</td>
</tr>
</tbody>
</table>

Table 3 shows a mean score of 76.58 per cent, which is between 60-80 per cent. This implies that the mothers’ level of knowledge of the modes of transmission of childhood diarrhoea was high.

**Research Question Four**

What is the level of knowledge possessed by mothers regarding the dangers of childhood diarrhoea? Data answering the above research question are contained in Table 4 below.

Table 4

**Level of Knowledge Possessed by Mothers Regarding the Dangers of Childhood Diarrhoea KDCD (n = 284)**

<table>
<thead>
<tr>
<th>N</th>
<th>(\bar{x}) (%)</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>KDCD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data in Table 4 indicate a mean score of 77.82 per cent, which is between 60-80 per cent. This shows that the mothers’ level of knowledge of the dangers of childhood diarrhoea was high.

**Research Question Five.**

What is the level of knowledge possessed by mothers regarding the preventive measures of childhood diarrhoea? Data answering the above research question are contained in Table 5 below.

<table>
<thead>
<tr>
<th>KPMCD</th>
<th>284</th>
<th>77.82</th>
<th>High level</th>
</tr>
</thead>
</table>

Table 5

**Level of Knowledge Possessed by Mothers Regarding the Preventative Measures of Childhood Diarrhoea (KPMCD)**

Table 5 shows a mean score of 60.28 per cent, which fell between 60-80 per cent. This implies that the mothers’ level of knowledge of the preventive measures of childhood diarrhoea was high.

**Research Question Six**

What are the management practices of mothers regarding childhood diarrhoea? Data answering the above research question are contained in Table 6 below.
Table 6
Management Practices of Mothers Regarding Childhood Diarrhoea (N=284)

<table>
<thead>
<tr>
<th>S/N</th>
<th>Mothers practices</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
<td>120</td>
<td>42.3</td>
<td>164</td>
<td>57.7</td>
</tr>
<tr>
<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
<td>252</td>
<td>88.7</td>
<td>32</td>
<td>11.3</td>
</tr>
<tr>
<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
<td>236</td>
<td>83.1</td>
<td>48</td>
<td>16.9</td>
</tr>
<tr>
<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea?</td>
<td>243</td>
<td>85.6</td>
<td>41</td>
<td>14.4</td>
</tr>
<tr>
<td>29</td>
<td>Do you use boiled water in preparing oral rehydration solution (ORS)?</td>
<td>215</td>
<td>75.7</td>
<td>69</td>
<td>24.3</td>
</tr>
<tr>
<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
<td>101</td>
<td>35.6</td>
<td>183</td>
<td>64.4</td>
</tr>
<tr>
<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
<td>257</td>
<td>90.5</td>
<td>27</td>
<td>9.5</td>
</tr>
<tr>
<td>32</td>
<td>Do you mix oral rehydration solution (ORS) in the right proportion?</td>
<td>209</td>
<td>73.6</td>
<td>75</td>
<td>26.4</td>
</tr>
<tr>
<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
<td>216</td>
<td>76.1</td>
<td>68</td>
<td>23.9</td>
</tr>
<tr>
<td>34</td>
<td>Do you give ORS as soon as diarrhoea starts</td>
<td>205</td>
<td>72.2</td>
<td>79</td>
<td>27.8</td>
</tr>
</tbody>
</table>

Table 6 shows that majority of the mothers adopted promptly cleaning baby who had defecated (90.5%), continuing breastfeeding especially when the baby had diarrhoea (88.7%), boiling water used in making drinks for their children during diarrhoea (85.6%) and preparing food hygienically during diarrhoea episode (83.1%). The table further shows that majority of the mothers washed hands with soap and water before preparing ORS (76.1%), used boiled water in preparing ORS (75.7%), mixed ORS in the right proportion (73.6%), and gave ORS as soon as diarrhoea starts (72.2%) whereas lower proportion of the mothers give their babies only breast milk during diarrhoea episode (42.3%) and allowed their children who had diarrhoea to defecate in bushes or open spaces (35.6%).
Research Question Seven.

What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to level of education? Data answering this research question are contained in Table 7 below.

Table 7
Level of Knowledge of Mothers Regarding Childhood Diarrhoea According to Level of Education

<table>
<thead>
<tr>
<th>S/N</th>
<th>Dimensions of Childhood Diarrhoea</th>
<th>No Formal Education (%) N=66</th>
<th>Primary Education (%) N=36</th>
<th>Secondary Education (%) N=62</th>
<th>Tertiary Education (%) N=120</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KCD</td>
<td>65.53</td>
<td>61.11</td>
<td>68.95</td>
<td>78.54</td>
</tr>
<tr>
<td>2</td>
<td>KSSCD</td>
<td>82.20</td>
<td>83.33</td>
<td>80.24</td>
<td>89.38</td>
</tr>
<tr>
<td>3</td>
<td>KMTCD</td>
<td>70.45</td>
<td>73.61</td>
<td>68.95</td>
<td>84.79</td>
</tr>
<tr>
<td>4</td>
<td>KDCD</td>
<td>71.21</td>
<td>64.58</td>
<td>73.79</td>
<td>87.50</td>
</tr>
<tr>
<td>5</td>
<td>KPMCD</td>
<td>62.73</td>
<td>61.67</td>
<td>56.77</td>
<td>60.33</td>
</tr>
</tbody>
</table>

Table 7 shows that mothers with no formal education possessed very high level of knowledge of SSCD (82.20%), high level of knowledge of DCD (71.21%), MTCD (70.45%), CD (65.53%) and PMCD (62.73%). The table further shows that CBMs with primary education possessed very high level of knowledge of KSSCD (83.33%) and high level of knowledge of MTCD (73.61%), DCD (64.58%), PMCD (61.67%) and CD (61.11%).

The Table also reveals that mothers with secondary education possessed very high level of knowledge of SSCD (80.24%) and high level of knowledge of DCD (73.79%), CD (68.95%), MTCD (68.95%) and average level of knowledge of PMCD (56.77%). Again, the Table shows that mothers with tertiary education possessed very high level of knowledge in SSCD (89.38%), DCD (87.50%), MTCD (84.79%) and high level in PMCD (60.33%).
Research Question Eight

What is the difference in the management practices of mothers regarding childhood diarrhoea according to level of education? Data answering this research question are contained in Table 8 below.

Table 8

Management Practices of Mothers’ Regarding Childhood Diarrhoea Based on Level of Education

<table>
<thead>
<tr>
<th>S/N</th>
<th>Childhood practices</th>
<th>Diarrhoea</th>
<th>No Formal N=66</th>
<th>Primary N=36</th>
<th>Secondary N=62</th>
<th>Tertiary N=120</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes %</td>
<td>No %</td>
<td>Yes %</td>
<td>No %</td>
</tr>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
<td>10.6</td>
<td>12.7</td>
<td>6.0</td>
<td>6.7</td>
<td>9.9</td>
</tr>
<tr>
<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
<td>21.1</td>
<td>2.1</td>
<td>10.6</td>
<td>2.1</td>
<td>17.6</td>
</tr>
<tr>
<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
<td>20.8</td>
<td>2.5</td>
<td>10.9</td>
<td>1.8</td>
<td>16.2</td>
</tr>
<tr>
<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea?</td>
<td>21.1</td>
<td>2.1</td>
<td>10.6</td>
<td>2.1</td>
<td>17.3</td>
</tr>
<tr>
<td>29</td>
<td>Do you use boiled water in preparing oral rehydration solution (ORS)?</td>
<td>14.4</td>
<td>8.8</td>
<td>6.7</td>
<td>6.0</td>
<td>16.9</td>
</tr>
<tr>
<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
<td>12.0</td>
<td>11.3</td>
<td>6.7</td>
<td>6.0</td>
<td>7.4</td>
</tr>
<tr>
<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
<td>21.1</td>
<td>2.1</td>
<td>10.9</td>
<td>1.8</td>
<td>19.7</td>
</tr>
<tr>
<td>32</td>
<td>Do you mix oral rehydration solution (ORS) in the right proportion?</td>
<td>11.6</td>
<td>11.6</td>
<td>6.7</td>
<td>6.0</td>
<td>17.3</td>
</tr>
<tr>
<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
<td>13.0</td>
<td>10.2</td>
<td>7.0</td>
<td>5.6</td>
<td>17.6</td>
</tr>
<tr>
<td>34</td>
<td>Do you give ORS as soon as diarrhoea starts</td>
<td>12.0</td>
<td>11.3</td>
<td>7.0</td>
<td>5.6</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>Overall %</td>
<td>15.77</td>
<td>7.47</td>
<td>8.31</td>
<td>4.37</td>
<td>15.57</td>
</tr>
</tbody>
</table>
Table 8 indicates that a slightly higher proportion of mothers’ with tertiary education practised giving their babies only breast milk during diarrhoea (15.8%) than mothers with no formal education (10.6%), secondary education (9.9%) and primary education (6.0%). The table further shows that a higher proportion of mothers with tertiary education (39.4%) than mothers with no formal education (21.1%), secondary education (17.6%) and primary education (10.9%) continued breast feeding their babies especially during diarrhoea while higher proportion of the mothers with tertiary education (35.2%) than those with no formal education (20.8%), secondary education (16.2%) and primary education (10.6%) prepared weaning food hygienically during diarrhoea episode.

The Table also indicates that a slightly higher proportion of mothers with tertiary education (36.6%) than those with no formal education (21.1%), secondary education (17.3%) and primary education (10.6%) boiled water used in making drinks for their children during diarrhoea. Similarly, a slightly higher proportion of mothers’ with tertiary education (37.7%) than those with secondary education (16.9%), no formal education (14.4%) and primary education (6.7%) practised using boiled water in preparing ORS.

The Table further reveals that slightly higher proportion of the mothers with no formal education (12.0%) than mothers with tertiary education (9.5%), secondary education (7.4%) and primary education (6.7%) allowed their children who had diarrhoea to defecate in bushes or open spaces. The Table also shows that a higher proportion of mothers’ with tertiary education (38.7%) than mothers with no formal education (21.1%), secondary education (19.7%) and primary education (10.9%) promptly cleaned their babies who had defecated during diarrhoea.

The Table again indicates that a slightly higher proportion of mothers with tertiary education (38%) than mothers with secondary education (17.3%), no formal education (11.6%) and primary education (6.7) mixed ORS in the right proportion. The table also reveals that a slightly higher proportion of mothers with tertiary education (38.4%) than mothers with secondary education (17.6%), no formal education (13%) and primary education (7%) washed their hands with soap and water before preparing ORS. The table further reveals that a slightly higher proportion of mothers with tertiary education (37.3%) than mothers with secondary education (15.8%), no formal education (12%) and primary education (7%) gave their babies ORS as soon as diarrhoea starts.
Research Questions Nine

What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to age? Data answering this research question are contained in Table 9 below.

Table 9

Differences in the Level of Knowledge of Mothers Regarding Childhood Diarrhoea According to Age.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Dimension Of Childhood Diarrhoea</th>
<th>20-29 years</th>
<th>30-39 years</th>
<th>40-49 years &amp; above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n=120</td>
<td>n=105</td>
<td>n=120</td>
</tr>
<tr>
<td>1</td>
<td>KCD</td>
<td>74.38%</td>
<td>67.86%</td>
<td>70.76%</td>
</tr>
<tr>
<td>2</td>
<td>KSSCD</td>
<td>84.37%</td>
<td>85.24%</td>
<td>85.59%</td>
</tr>
<tr>
<td>3</td>
<td>KMTCD</td>
<td>78.75%</td>
<td>74.05%</td>
<td>76.69%</td>
</tr>
<tr>
<td>4</td>
<td>KDCD</td>
<td>80.62%</td>
<td>74.76%</td>
<td>77.54%</td>
</tr>
<tr>
<td>5</td>
<td>KPMCD</td>
<td>57.67%</td>
<td>61.33%</td>
<td>63.73%</td>
</tr>
</tbody>
</table>

Table 9 shows that mothers aged 20-29 years possessed very high level of knowledge of SSCD (84.37%), DCDC (80.62%), and high level in MTCD (78.75%), CD (74.38%) and average level in PMCD (57.67%). The Table further shows that mothers’ aged 30-39 years possessed very high level of knowledge of SSCD (85.24%), and high level of DCD (74.76%), MTCD (74.05%), CD (67.86%) and PMCD (61.33%). The Table also reveals that mothers aged 40-49 years and above had very high level of knowledge of SSCD (85.59%), high level in DCD (77.54%), MTCD (76.69%), CD (70.76%) and PMCD (63.73%).
Research Question Ten

What is the difference in the management practices of mothers regarding childhood diarrhoea according to age? Data answering this research question are contained in Table 10 below.

Table 10 shows that a slightly higher proportion of mothers aged 20-29 years (19%) than those aged 30-39 years (13.7%) and 40-49 years (9.5%) gave their children only breast milk during diarrhoea while slightly higher proportion of the mothers aged 20-29 years (37.7%) than those aged 30-39 years (32%) and 40-49 years (19%) continued breast feeding their babies during diarrhoea. The table further indicates that a slightly higher proportion of mothers aged 20-29 years (32.7%) than those aged 30-39 years (32.4%) and 40-49 years and
above (18%) prepared weaning food hygienically during diarrhoea. A slightly higher proportion of mothers aged 20-29 years (35.6%) than mothers aged 30-39 years (31.7%) and mothers aged 40-49 years (18.3%) used boiled water in making drinks for their children during diarrhoea.

The Table also shows that a slightly higher proportion of mothers aged 20-29 years (35.9%) than 30-39 years (23.2%) and mothers aged 40-49 years (16.5%) practised the use of boiled water in preparing ORS while a slightly higher proportion of mothers aged 30-39 years (13.4%) than mothers aged 40-49 years and above (11.3%) and 20-29 years (10.9%) allowed their children to defecate in bushes or open spaces during diarrhoea.

The table further reveals that a slightly higher proportion of mothers aged 20-29 years (37.3%) than mothers aged 30-39 years (34.2%) and 40-49 years (19%) promptly cleaned their babies after defecation especially during diarrhoea. Mothers aged 20-29 years (35.6%) than those aged 30-39 years (24.3%) and 40-49 years (13.7%) practiced mixing ORS in the right proportion.

The table again shows that a slightly higher proportion of the mothers aged 20-29 years (37%) than mothers aged 30-39 years (23.9%) and mothers aged 40-49 years (15.1%) practised washing hands with soap and water before preparing ORS, while a slightly higher proportion of mothers aged 20-29 years (34.2%) than mothers aged 30-39 years (25%) and mothers aged 40-49 years (13%) gave their babies ORS as soon as diarrhoea starts.

**Research Question Eleven**

What is the difference in the level of knowledge of mothers regarding childhood diarrhoea according to parity? Data answering the above research question are contained in Table 11 below.

Table 11

<table>
<thead>
<tr>
<th>Components of Diarrhoea Knowledge</th>
<th>Parity Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Decision</td>
</tr>
<tr>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td>CD</td>
<td>75.00</td>
</tr>
<tr>
<td>SSCD</td>
<td>82.99</td>
</tr>
<tr>
<td>MTCD</td>
<td>73.20</td>
</tr>
<tr>
<td>DCD</td>
<td>78.61</td>
</tr>
<tr>
<td>PMCD</td>
<td>61.24</td>
</tr>
<tr>
<td>Overall mean</td>
<td>74.20</td>
</tr>
</tbody>
</table>

Overall mean 74.20 High 75.12 High 71.33 High
Table 11 shows those mothers’ with one child possessed very high level of knowledge of SSCD (82.99%) and high level of knowledge of DCD (78.61%), KCD (75%), MTCD (73.20%) and PMCD (61.24%). The table further reveals that mothers with 2-4 children possessed very high level of knowledge of SSCD (87.59%), MTCD (80.40%), high level of knowledge in DCD (78.42%), CD (71.22%) and average knowledge of PMCD (57.99%). The Table also shows that mothers with 5 children and above possessed very high level knowledge of KSSCD (81.25%) and high level of knowledge of DCD (74.48%), MTCD (72.40%), PMCD (65%) and CD (63.54%).

**Research Question Twelve**

What is the difference in the management practices of mothers regarding childhood diarrhoea according to parity? Data answering the above research question are contained in Table 12 below.

Table 12

**Difference in the Management Practices of Mothers Regarding Childhood Diarrhoea According to Parity.**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Dimensions of childhood diarrhoea management practices</th>
<th>Parity Status</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One child N=97 (N=9)</td>
<td>2-4 children N=139 (N=139)</td>
<td>5 and above N=48 (N=48)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>%</td>
<td>No</td>
<td>%</td>
<td>Yes</td>
</tr>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
<td>19.7</td>
<td>14.4</td>
<td>15.8</td>
<td>33.1</td>
<td>6.7</td>
</tr>
<tr>
<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
<td>30.6</td>
<td>3.5</td>
<td>43.3</td>
<td>5.6</td>
<td>14.8</td>
</tr>
<tr>
<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
<td>27.8</td>
<td>6.3</td>
<td>41.2</td>
<td>7.7</td>
<td>14.1</td>
</tr>
<tr>
<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea?</td>
<td>28.9</td>
<td>5.3</td>
<td>42.6</td>
<td>6.3</td>
<td>14.1</td>
</tr>
<tr>
<td>29</td>
<td>Do you use boiled water in preparing oral rehydration solution (ORS)?</td>
<td>25.0</td>
<td>9.2</td>
<td>38.7</td>
<td>10.2</td>
<td>12.0</td>
</tr>
<tr>
<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
<td>12.5</td>
<td>21.8</td>
<td>14.8</td>
<td>34.2</td>
<td>8.5</td>
</tr>
<tr>
<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
<td>31.0</td>
<td>3.2</td>
<td>45.4</td>
<td>3.5</td>
<td>14.1</td>
</tr>
<tr>
<td>32</td>
<td>Do you mix oral rehydration solution (ORS) in the right proportion?</td>
<td>25.4</td>
<td>8.8</td>
<td>37.7</td>
<td>11.3</td>
<td>10.6</td>
</tr>
<tr>
<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
<td>27.8</td>
<td>6.3</td>
<td>37.7</td>
<td>11.3</td>
<td>10.6</td>
</tr>
</tbody>
</table>
Do you give ORS as soon as diarrhoea starts?

<table>
<thead>
<tr>
<th></th>
<th>ORS as soon as diarrhoea starts?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall %</td>
<td>25.41  8.76  35.24  13.69  11.71  5.2</td>
</tr>
</tbody>
</table>

Table 12 reveals that a higher proportion of mothers with one child (19.7%) than mothers with 2-4 children (15.8%) and 5 children and above (6.7%) gave their babies only breast milk during diarrhoea, while a higher proportion of mothers with 2-4 children (43.3%) than mothers with one child (30.6%) and 5 children and above (14.8%) also continued breast feeding their babies especially during diarrhoea.

The Table also shows that a higher proportion of mothers with 2-4 children (41.2%) than mothers with one child (27.8%) and those with 5 children and above (14.1%) prepared weaning food hygienically during diarrhoea, while a higher proportion of the mothers with 2-4 children (42.6%) than those with one child (28.9%) and 5 children and above (14.1%) boiled water used in making drinks for their children during diarrhoea episode. The table further reveals that a higher proportion of mothers with 2-4 children (38.7%) than mothers with one child (25%) and those with 5 children and above (12%) used boiled water in preparing ORS, while a slightly higher proportion of the mothers with 2-4 children (14.8%) than those with one child (12.5%) and 5 children and above (8.5%) allowed their children who had diarrhoea to defecate in bushes or open spaces.

The table again indicates that a higher proportion of mothers with 2-4 children (45.4%) than mothers with one child (31%) and those with 5 children and above (14.1%) promptly cleaned their babies after defecation especially during diarrhoea. The table also shows that a higher proportion of the mothers with 2-4 children (37.7%) than mothers with one child (25.4%) and those with 5 children and above (10.6%) mixed ORS in the right proportion.

The table further indicates that a higher proportion of mothers with 2-4 children (37.7%) than mothers with one child (27.8%) and those with 5 children and above (10.6%) washed their hands with soap and water before preparing ORS while a slightly higher proportion of mothers with 2-4 children (35.2%) than those mothers with one child (25.4%) and mothers with 5 children and above (11.6%) gave ORS as soon as diarrhoea starts.
Hypothesis One

There is no significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to age. Data testing this hypothesis are contained in Table 13.

Table 13

<table>
<thead>
<tr>
<th>Dimension of childhood diarrhoea</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F Value</th>
<th>P. value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between groups</td>
<td>Within groups</td>
<td>df</td>
<td>Between groups</td>
</tr>
<tr>
<td>KCD</td>
<td>2394.238</td>
<td>225411.660</td>
<td>2</td>
<td>1197.119</td>
</tr>
<tr>
<td>KSSCD</td>
<td>72.798</td>
<td>163701.410</td>
<td>2</td>
<td>36.399</td>
</tr>
<tr>
<td>KMTCD</td>
<td>1239.201</td>
<td>235547.770</td>
<td>2</td>
<td>619.601</td>
</tr>
<tr>
<td>KDCD</td>
<td>1930.662</td>
<td>215815.817</td>
<td>2</td>
<td>965.331</td>
</tr>
<tr>
<td>KPMCD</td>
<td>1637.804</td>
<td>172739.661</td>
<td>2</td>
<td>818.902</td>
</tr>
</tbody>
</table>

** Not significant

Table 13 shows the F-values for the various dimensions of childhood diarrhoea with their corresponding P-values (KCD – F = 1.492, P = .227, KSSCD – F = .062, P=.939, KMTCD - F = .739, P=.478, KDCD – F = 1.257, P = .286 and KPMCD – F = 1.332, P=.266) which were greater than .05 level of significance at 2 and 281 degrees of freedom. The null hypothesis of no significant difference is therefore accepted. This means that the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea was the same for all the age groups. This implies that age did not make any difference in the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea.

Hypothesis Two

There is no significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to level of education. Data testing this hypothesis are contained in Table 14.
Table 14

Summary of One Way ANOVA Analysis Testing Null Hypothesis of no Significant Difference in the Knowledge of Mothers Regarding Childhood Diarrhoea According to Level of Education.

<table>
<thead>
<tr>
<th>Dimensions of childhood diarrhoea</th>
<th>Sum of squares Between groups</th>
<th>Within groups</th>
<th>Df</th>
<th>Mean squares Between groups</th>
<th>Within groups</th>
<th>F. value</th>
<th>P. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCD</td>
<td>12567.256</td>
<td>215238.641</td>
<td>3</td>
<td>4189.085</td>
<td>768.709</td>
<td>5.450*</td>
<td>.001</td>
</tr>
<tr>
<td>KSSCD</td>
<td>4318.272</td>
<td>15945.5935</td>
<td>3</td>
<td>1439.424</td>
<td>569.485</td>
<td>2.528**</td>
<td>.058</td>
</tr>
<tr>
<td>KMTCD</td>
<td>14493.406</td>
<td>222293.566</td>
<td>3</td>
<td>4831.135</td>
<td>793.906</td>
<td>6.085*</td>
<td>.001</td>
</tr>
<tr>
<td>KDCD</td>
<td>21440.424</td>
<td>196306.054</td>
<td>3</td>
<td>7146.808</td>
<td>701.093</td>
<td>10.194*</td>
<td>.000</td>
</tr>
<tr>
<td>KPMCD</td>
<td>1226.869</td>
<td>173150.596</td>
<td>3</td>
<td>408.956</td>
<td>618.395</td>
<td>.661**</td>
<td>.576</td>
</tr>
</tbody>
</table>

*aSignificant
**Not significant

Table 14 shows the F-calculated values for KCD (F = 5, 450, P =.001), KMTCD (F = 6.085, P =.058), and KDCD (F = 10.194, P =.000) with their corresponding P-values which are less than .05 level of significance at 3 and 280 degrees of freedom. The null hypothesis was therefore rejected. This implies that there was significant difference in the levels of knowledge of these dimensions of childhood diarrhoea according to level of education. The table further shows the F-calculated values for KSSCD (F = 2.528, P = .058) and KPMCD (F =.661, P =.576) with their corresponding P-values which are greater than .05 level of significance at 3 and 280 degrees of freedom. The null hypothesis of no significant difference was accepted. This implies that difference did not exist in the level of knowledge of mothers regarding these dimensions of childhood diarrhoea according to level of education.

Hypothesis Three

There is no significant difference in the management practices of mothers regarding childhood diarrhoea according to parity. Data testing this hypothesis are contained in Table 15 below.
Data in Table 15 indicate the $\chi^2$ calculated values with their corresponding P-values which were greater than .05 level of significance at 2 degrees of freedom in the following management practices: Continuing breast feeding during diarrhoea episode ($\chi^2 = .170$, P=.918), preparing weaning food hygienically during diarrhoea ($\chi^2 = .350$, P=.858 > .05),
boiling water used in making drinks for children during diarrhoea ($\chi^2 = .525, P=.769 > .05$), using boiled water in preparing ORS ($\chi^2 = 1.841, P=.398$), promptly cleaning a child who has defecated during diarrhoea ($\chi^2 = 3.730, P=.155$), mixing of ORS in the right proportion ($\chi^2 = 3.879, P=.144$) and giving ORS as soon as diarrhoea starts ($\chi^2 = .488, P=.784$). The p-values are greater than .05 level of significance. The null hypothesis of no significant difference was accepted. This implies that parity did not make any difference in these management practices of mothers. The table further shows the $\chi^2$ calculated values at 2 degrees of freedom with their corresponding P-values which were less than .05 level of significance at 2 degrees of freedom for the following management practices of mothers regarding childhood diarrhoea: Allowing their children who has diarrhoea to defecate in bushes or open spaces ($\chi^2 = 6.11, P=.047 < .05$), washing of hands with soap and water before preparing ORS ($\chi^2 = 6.455, P=.040 < .05$) and giving only breast milk when he/she has diarrhoea ($\chi^2 = 15.22, P=.000 < .05$). The null hypothesis of no significant difference was rejected. This implies that these management practices of mothers regarding childhood diarrhoea differed according to parity status.

**Hypothesis Four**

There is no significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to parity. Data testing this hypothesis are contained in Table 16 below.

Table 16

**Summary of One Way ANOVA Analysis Testing Null Hypothesis of no Significant Difference in the Knowledge of Mothers Regarding Childhood Diarrhoea According to Parity.**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Dimension of childhood diarrhoea</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>P. value</th>
<th>P. value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Between groups</td>
<td>Within groups</td>
<td>df</td>
<td>Between groups</td>
</tr>
<tr>
<td>KCD</td>
<td>4215.895</td>
<td>223590.003</td>
<td>2107.947</td>
<td>2</td>
<td>795.694</td>
</tr>
<tr>
<td>KSSCD</td>
<td>1998.592</td>
<td>161775.616</td>
<td>999.296</td>
<td>2</td>
<td>575.714</td>
</tr>
<tr>
<td>KMTCD</td>
<td>3974.977</td>
<td>232811.995</td>
<td>1987.488</td>
<td>2</td>
<td>828.512</td>
</tr>
<tr>
<td>KDCD</td>
<td>645.588</td>
<td>217100.891</td>
<td>322.794</td>
<td>2</td>
<td>772.601</td>
</tr>
<tr>
<td>KPMCD</td>
<td>1889.947</td>
<td>172487.518</td>
<td>944.974</td>
<td>2</td>
<td>613.835</td>
</tr>
</tbody>
</table>

** Not significant

Table 16 shows the F-values for the various dimensions of the knowledge of childhood diarrhoea with their corresponding P-values: KDCD (F=.418, P=.659), KPMCD (F=1.539, P=.216), KSSCD (F=1.736, P=.178), KMTCD (F=2.399, P=.093) and KCD
(F=2.649, P=.072) which are greater than .05 level of significance at 2 and 281 degrees of freedom. The null hypothesis of no significant difference was therefore accepted. This means that there was no significant difference in the levels of knowledge of the various dimensions of childhood diarrhoea according to parity. This implies that parity did not make any difference in the knowledge of mothers regarding the various dimensions of childhood diarrhoea.

**Hypothesis Five**

There is no significant difference in the management of childhood diarrhoea by mothers according to age. Data testing this hypothesis are contained in Table 17.

Table 17

<table>
<thead>
<tr>
<th>S/N</th>
<th>Management Practice</th>
<th>20–29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>χ²-Cal Value</th>
<th>df</th>
<th>p. value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
<td>50.7</td>
<td>69.3</td>
<td>44.4</td>
<td>60.6</td>
<td>1.793**</td>
<td>2</td>
</tr>
<tr>
<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
<td>106.5</td>
<td>13.5</td>
<td>93.2</td>
<td>11.8</td>
<td>.931**</td>
<td>2</td>
</tr>
<tr>
<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
<td>99.7</td>
<td>20.3</td>
<td>87.3</td>
<td>17.7</td>
<td>4.675**</td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea?</td>
<td>102.7</td>
<td>17.3</td>
<td>89.8</td>
<td>15.2</td>
<td>.507**</td>
<td>2</td>
</tr>
<tr>
<td>29</td>
<td>Do you boiled water used in preparing oral rehydration solution (ORS)?</td>
<td>90.8</td>
<td>29.2</td>
<td>79.5</td>
<td>25.5</td>
<td>15.562*</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
<td>42.7</td>
<td>77.3</td>
<td>37.3</td>
<td>67.7</td>
<td>13.954*</td>
<td>2</td>
</tr>
<tr>
<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
<td>108.6</td>
<td>11.4</td>
<td>95.0</td>
<td>10.0</td>
<td>1.159**</td>
<td>2</td>
</tr>
<tr>
<td>32</td>
<td>Do you mix oral rehydration solution (ORS) in the right proportion?</td>
<td>88.3</td>
<td>31.7</td>
<td>77.3</td>
<td>27.7</td>
<td>11.961*</td>
<td>2</td>
</tr>
<tr>
<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
<td>91.3</td>
<td>28.7</td>
<td>79.9</td>
<td>25.1</td>
<td>16.311*</td>
<td>2</td>
</tr>
<tr>
<td>34</td>
<td>Do you give ORS as soon as diarrhoea starts</td>
<td>86.6</td>
<td>33.4</td>
<td>75.8</td>
<td>29.2</td>
<td>8.197*</td>
<td>2</td>
</tr>
</tbody>
</table>

Overall χ²  

| 86.79 | 33.21 | 75.95 | 29.05 | 42.68 | 16.32 | 7.505 | 2   | 0.249 |

*Significant

** Not significant

Table 17 shows the χ² calculated values with their corresponding p-values at 2 degrees of freedom for the following management practices of mothers regarding childhood diarrhoea: giving of ORS as soon as diarrhoea starts (χ²= .8.197, P=.017 < .05), mixing of
ORS in the right proportion ($\chi^2 = 11.961, P=.003 < .05$), allowing a child who has diarrhoea to defecate in the bushes or open spaces ($\chi^2 = 13.954, P=.001 < .05$), boiling water used in preparing ORS ($\chi^2 = 15.562, P=.000 < .05$) and washing of hands with soap and water before preparing ORS ($\chi^2 = 16.311, P=.000 < .05$), which are less than .05 level of significance of two degrees of freedom. The null hypothesis of no significant difference was therefore rejected. This implies that age has significant difference in the management practices of mothers regarding these dimensions of childhood diarrhoea. The table further shows the $\chi^2$ calculated values with their corresponding p-values at 2 degree of freedom for the following management practices of mothers: boiling water used in making drinks for children during diarrhoea ($\chi^2 = .507, P=.776 > .05$), continuing breast feeding during diarrhoea episode ($\chi^2 = .931, P=.628 > .05$); promptly cleaning a child who has defecated during diarrhoea ($\chi^2 = 1.159, P=.560$), giving baby only breast milk during diarrhea ($\chi^2 = 1.793, P=.408$) and preparing weaning food hygienically during diarrhoea episode ($\chi^2 = 4.675, P=.097$). The p-values and less than .05 level of significance. The null hypothesis of no significant difference was therefore accepted. This implies that age had no significance difference in these dimensions of the management practices of mothers regarding childhood diarrhoea.
Hypothesis Six

There is no significant difference in the management practice of mothers regarding childhood diarrhoea according to level of education. Data testing this hypothesis are contained in Table 18 below.

Table 18

Summary of Chi-square ($\chi^2$) Analysis Testing the Null Hypothesis of no Significant Difference in the Management Practices of Mothers Regarding Childhood Diarrhoea According to Level of Education.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Management practices Of Childbearing Mothers</th>
<th>No formal N=66</th>
<th>Primary N=36</th>
<th>secondary N=62</th>
<th>Tertiary N=120</th>
<th>$\chi^2$ – Cal Value</th>
<th>df</th>
<th>p. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
<td>27.9</td>
<td>38.1</td>
<td>15.2</td>
<td>20.8</td>
<td>26.2</td>
<td>35.8</td>
<td>50.7</td>
</tr>
<tr>
<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
<td>58.6</td>
<td>7.4</td>
<td>31.9</td>
<td>4.1</td>
<td>55.0</td>
<td>7.0</td>
<td>106.5</td>
</tr>
<tr>
<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
<td>54.8</td>
<td>11.2</td>
<td>27.9</td>
<td>6.1</td>
<td>51.5</td>
<td>10.5</td>
<td>99.7</td>
</tr>
<tr>
<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea?</td>
<td>56.5</td>
<td>9.5</td>
<td>30.8</td>
<td>5.2</td>
<td>53.0</td>
<td>9.0</td>
<td>102.7</td>
</tr>
<tr>
<td>29</td>
<td>Do you boiled water used in preparing oral rehydration solution (ORS)?</td>
<td>50.0</td>
<td>16.0</td>
<td>27.3</td>
<td>8.7</td>
<td>46.9</td>
<td>15.1</td>
<td>90.8</td>
</tr>
<tr>
<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
<td>23.5</td>
<td>42.5</td>
<td>12.8</td>
<td>23.2</td>
<td>22.0</td>
<td>40.0</td>
<td>42.7</td>
</tr>
<tr>
<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
<td>59.7</td>
<td>6.3</td>
<td>32.6</td>
<td>3.4</td>
<td>56.1</td>
<td>5.9</td>
<td>108.6</td>
</tr>
<tr>
<td>32</td>
<td>Do you mix oral rehydration solution (ORS) in the right proportion?</td>
<td>48.6</td>
<td>17.4</td>
<td>26.5</td>
<td>9.5</td>
<td>45.6</td>
<td>16.4</td>
<td>88.3</td>
</tr>
<tr>
<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
<td>50.2</td>
<td>15.8</td>
<td>27.4</td>
<td>8.6</td>
<td>47.2</td>
<td>14.8</td>
<td>91.3</td>
</tr>
<tr>
<td>34</td>
<td>Do you give ORS as soon as diarrhoea starts</td>
<td>47.6</td>
<td>18.4</td>
<td>26.0</td>
<td>10.0</td>
<td>44.8</td>
<td>17.2</td>
<td>86.6</td>
</tr>
<tr>
<td>Overall $\chi^2$</td>
<td>47.74</td>
<td>18.26</td>
<td>26.04</td>
<td>9.96</td>
<td>44.83</td>
<td>17.17</td>
<td>86.79</td>
<td>33.21</td>
</tr>
</tbody>
</table>

*Significant
** Not significant

Data in Table 18 shows the $\chi^2$ calculated value with their corresponding P-values which are greater than .05 level of significance in the following dimensions of management practices of diarrhoea at 3 degrees of freedom: promptly cleaning a child who has defecated ($\chi^2= 1.011$, P=.799 > .05), giving baby only breast milk during diarrhoea episode ($\chi^2= 1.968$, P=.579 > .05), boiling water used in making drinks for children during diarrhoea ($\chi^2=$
3.931, P=.269 >.05) and preparing weaning food hygienically during diarrhoea episode ($\chi^2=5.600, P=.133 >.05$). The null hypothesis of no significant difference was therefore accepted. This implies that level of education did not make any difference in the management practices of mothers regarding childhood diarrhoea.

The table further indicates that the $\chi^2$ calculated values with their corresponding P-values which were greater than .05 level of significance in the following management practices of diarrhoea at 3 degrees of freedom: continuing breastfeeding during diarrhoea ($\chi^2=7.959, P=.047$), boiling water used in preparing ORS ($\chi^2=28.832, P=.000$), allowing a child who has diarrhoea to defecate in the bushes or open spaces ($\chi^2=20.998, P=.000$), mixing of ORS in the right proportion ($\chi^2=44.495, P=.000$), washing of hands with soap and water before preparing ORS ($\chi^2=37.905, P=.000$), and giving of ORS as soon as diarrhoea starts ($\chi^2=34.591, P=.000$). The null hypothesis of no significant difference was therefore rejected. This implies that mothers differed in the adoption of these practices according to level of education.

**Summary of Findings**

Based on the analysis of data, the major findings of the study are hereby summarized;

1. Mothers had high (71.21%) level of knowledge of the concept of childhood diarrhoea (KCD). This is contained in Table 1.
2. Mothers had very high (84.94%) level of knowledge of the signs and symptoms of childhood diarrhoea. This is contained in Table 2.
3. Mothers had high (76.58%) level of knowledge of the modes of transmission of childhood diarrhoea. This is contained in Table 3.
4. Mothers had high (77.82%) level of knowledge regarding the dangers of childhood diarrhoea. This is contained in Table 4.
5. Mothers had high (60.28%) level of knowledge regarding the preventive measures of childhood diarrhoea. This is contained in Table 5.
6. Majority of mothers’ adopted all the management practices of childhood diarrhoea ranging from 72.2%- 90.5% except “giving their babies only breast milk during diarrhoea (42.3%) and (35.6%) mothers who allowed their children to defecate in bushes or open spaces. This is contained in Table 6.
7. Mothers’ of all the levels of education possessed very high level of knowledge of SSCD and high level of knowledge of CD,MTCD,DCD and PMCD while only those with tertiary education possessed average level of knowledge of PMCD.
a. This is contained in Table 7.

8. Higher proportion of mothers’ with tertiary education adopted all the listed diarrheoa management practices percentage ranging from 15.8% - 38.7% except allowing a child to defecate in the bush more than those with no formal, primary and secondary education. This is contained in Table 8.

9. Mothers’ of the various age groups possessed high (ranging from 61.33% - 85.59%) level knowledge in the various dimensions of childhood diarrhoea except those of age group 20-29 years who had average (57.67) knowledge of the preventive measures of childhood diarrhoea. This is contained in Table 9.

10. Lower proportion of (ranging 13.4% – 34.2%) mothers’ of age group 20-29 years adopted the listed management practices: continuing breast feeding when baby has diarrhoea, preparing wearing food hygienically during diarrhoea, boiling water used in making drinks, using boiled water in preparing ORS, promptly cleaning a baby who has defecated during diarrhoea, mixing ORS in the right preparation, washing hands with soap and water before preparing ORS and giving baby ORS as soon as diarrhoea starts, except in giving baby only breast milk during diarrhoea and allowing a baby who has diarrhoea to defecate in bushes or open spaces more than those in age group 30-39 years and 40-49 years. This is contained in Table 10.

11. Mothers of all the parity statuses possessed high level of knowledge ranging from (61.24% - 87.99%) of the various dimensions of childhood diarrhoea except those of parity status 5 and above who possessed average (57.99%) knowledge in PMCD. This is contained in Table 11.

12. Lower proportion of the mothers (ranging from 35.2% - 45.4%) of parity status 2-4 adopted all the listed diarrhoea management practices except giving baby only breast milk when he/she has diarrhoea and allowing a child who has diarrhoea to defecate in bushes or open spaces more than mothers of parity status 1 and 5 and above. This is contained in Table 12.

13. There was no significant difference in the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea (KCD (F=1.492, P=.227), KSSCD (F=.062, P=.939), KMTCD (F=.739, P=.478), KDCD (F=1.257, P=.286) and KPMCD (F=1.332, P=.266) according to age. This is contained in Table 13.

14. There was no significant difference in the level of knowledge of SSCD (F=2.528, P=.058) and KPMCD (F=.661, P=.576) while there was significance difference in the level of knowledge of CD (F=5.450, P=.001), MTCD (F= 6.085, P=.058), and
KDCD (F=10.194, P=.000) according to level of education of mothers. These are contained in Table 14.

15. There was no significant difference in the following management practices of mothers (continuing breastfeeding during diarrhea (χ² = .170, P=.918), preparing weaning food hygienically during diarrhea (χ²=.350, P=.858), boiling water used in making drinks for their children during diarrhea (χ²=.525, P=.769), using boiled water in preparing ORS (χ²= 1.841, P=.398), promptly cleaning their babies after defecation especially during diarrhea (χ²= 3.730, P= .155), mixing ORS in the right proportion (χ²= 3.879, P=.144) and giving ORS as soon as diarrhea starts (χ²=.488, P=.784) while there was significant difference in the following practices: allowing a child to defecate in bushes or open spaces during diarrhea (χ²=6.11, P= .047), washing hands with soap and water before preparing ORS (χ²=6.455, P= .040) and giving baby only breast milk during diarrhea episode (χ²=15.22, P= .000) according to parity status. These are contained in 15.

16. There was no significant difference in the level of knowledge regarding the various dimensions of childhood diarrhea CD (F=2.649, P= .072), SSCD (F=1.736, P= .178), MTCD (F=2.399, P= .093), DCD (F=.418, P=.659) and PMCD (F=.539, P= .216) according to parity status. These are contained in Table 16.

17. There was significant difference in the following practices of mothers with respect to giving ORS as soon as diarrhea starts (χ²=8.197, P=.017), mixing ORS in the right proportion (χ²=11.961, P=.003), allowing a child who has diarrhea to defecate in bushes or open spaces (χ²=13.954, P=.001), boiling water used in preparing ORS (χ² =15.952, P=.000) and washing hands with soap and water before preparing ORS (χ²=16.311, P=.000), while there was no significant difference in the following management practices of mothers: (boiling water used in making drinks for their children during diarrhea (χ²= .507, P= .776), continuing breast feeding during diarrhea episode (χ² =.931, P=.628), promptly cleaning a baby who has defecated especially during diarrhea (χ²=1.159, P=.560), giving baby only breast milk during diarrhea episode (χ²=1.793, P=.408) and preparing hygienically weaning food during diarrhea (χ²=4.675, P= .097) according to age. These are contained in Table 17.

18. There was no significant differences in the following management practices of mothers regarding childhood diarrhea promptly cleaning a baby after defecation especially during diarrhea (χ²=1.011, P= .799), giving baby only breast milk during diarrhea (χ²= 1.968, P= .579), boiling water used in making drinks for children
(\chi^2=3.931, P= .269), and preparing weaning food hygienically especially during diarrhoea (\chi^2=5.600, P= .133). while there was significant difference in the following management practices of mothers: continuing breast feeding during diarrhoea episode (\chi^2=7.959, P=.047), boiling water used in making ORS for their children during diarrhoea (\chi^2=28.832, P= .000), allowing a child who has diarrhoea to defecate in bushes or open spaces (\chi^2 = 20.998, P= .000), mixing ORS in the right proportion (\chi^2= 44.495, P= .000), washing hands with soap and water before preparing ORS (\chi^2=37.905, P= .000) and giving ORS as soon as diarrhoea starts (\chi^2=34.591, P=.000) according to level of education. These are contained in Table 18.

Discussion

The findings of the study are hereby discussed under the following headings:

1. Knowledge of mothers regarding childhood diarrhoea
2. Management practices of mothers regarding childhood diarrhoea.
3. Differences in the knowledge and management practices of mothers regarding childhood diarrhoea.

Knowledge of Mothers regarding childhood diarrhoea.

Results in Tables 1,2,3,4 and 5 showed that mothers in Ezeagu LGA had high level of knowledge of the various components of childhood diarrhoea. The finding was expected and therefore not surprising. This is because these mothers might have been attending antenatal clinics where trained nurses and midwives taught the rudiments of childhood diarrhoea. This finding is in consonance with that of Ahmed et al (1994) and Hijleh (2003) who reported that their respondents exhibited high level of knowledge of the components of childhood diarrhoea.

Management practices of mothers regarding childhood diarrhoea.

Result in Table 6 revealed that majority of the mothers practiced giving their babies other fluids apart from breast milk. This finding was expected because Hijleh (2003) found out in his study that average number of women used other fluids like rice water, herbs, yoghurt, lemon and sugar solution, weak tea, water in which some barley was soaked, starch with water and ORS. This is also in consonance with the findings of Martins et al (2006) who reported that majority of the mothers used tea and rice based beverages which include rice water and rice gruel for their children. They further stated that tea was mainly used as a treatment to stop diarrhoea while rice-based gruels were used as a palliative to soothe the child.
The table further showed that majority of the mothers adopted promptly cleaning their babies after defecation, continuing breast feeding their babies during diarrhea, using boiling water in making drinks for their children during diarrhoea, preparing weaning food hygienically during diarrhoea, washing hands with soap and water before preparing ORS, using boiled water in preparing ORS, mixing ORS in the night proportion and giving their babies ORS as soon as diarrhoea starts. These findings were anticipated and therefore not surprising because mothers including those who were delivered of their babies at the maternity homes and several unregistered clinics seek postnatal care services such as immunization, nutrition education programmes on children’s ailments which are rendered in the MCH clinics. This finding in consonance with those of Ejima (2010) who reported that post-natal care services provided by MCH health workers at the ante-natal clinics were utilized by mothers. These practices may have been learnt from parents or significant others in the area. This is a positive practice that should be encouraged to prevent children from dying of diarrhoea.

The result further showed that lower proportion of the mothers (35.6%) allowed their children to defecate in bushes and open spaces during diarrhoea. This finding was anticipated because some of the mothers do not have toilets and they defecate in bushes. This is a negative practice and should not be encouraged to prevent the spread of diarrhoea and other diseases.

**Difference in the knowledge and management practices of mothers regarding Childhood diarrhoea.**

The finding in Table 7 revealed that the level of knowledge of mothers with tertiary education regarding diarrhoea was very high. This was anticipated and therefore not a surprise. This is due to the fact that mothers with high educational attainments are expected to exhibit adequate knowledge of the components of childhood diarrhoea. It is a well established fact that education empowers an individual’s (mothers inclusive) intellectual capacity to understand seemingly perceived difficult concepts, more especially when such concepts are practicable. They may received some formal teaching on this while in school or read about the topic in the print media and listened to it in the electronic media. The finding is in consonance with that of Afolabi et al (1995) who reported that educational status significantly influence mother’s health behaviours.

Result in Table 8 revealed that level of education has no difference in the management practices of mothers regarding childhood diarrhoea. Result indicated low
percentage level for mothers with tertiary level of education, no formal, secondary and primary education. This finding was a surprise, because educational level of any given group of individuals is expected to positively and exponentially influence their knowledge and practice of a given health-related behaviour. It is expected that mothers with tertiary and secondary education should possess very high percentage scores on the management of childhood diarrhoea, but this notion is a contradiction to the data presented in Table 8. This finding did not agree with that of Strivasta and Ramsel (1996) which revealed that women who are educated do better in the management of childhood ailments (childhood diarrhoea inclusive), than their uneducated counter parts. The implication of the finding is that mothers who posses these levels of knowledge regarding all the dimensions of the management of childhood diarrhoea are most likely to have had their children suffer from childhood diarrhoea.

Result in Table 9 showed that the level of knowledge of mothers aged 20-29 years, 30-39 years and 40-49 years was very high and high respectively while mothers aged 20-29 years had average level of knowledge in PMCD. Young mothers may be more educated getting information about diarrhoea from many sources. The finding was not expected and thus surprising. This is because under normal circumstances, older mothers are expected to demonstrate in-depth knowledge of childhood diarrhoea after several contacts with nurse-midwives at the MCH clinics and even through experience during child rearing. This finding is in line with that of Ejima (2010) who reported that older women and those with no birth experience under-utilize post-natal services.

Result in Table 10 revealed that there was slight difference in the management practices of mothers regarding childhood diarrhoea according to age. Mothers aged 20-29 years adopted most of the management practices than mothers aged 30-39 years and 40-49 years respectively. This finding was expected and therefore not surprising. Experience has shown that age of an individual does not necessarily influence the individual’s capacity to effectively practice health-related behaviour most especially when the behaviour is of immense benefit to the individual. This finding contradicts the finding of Sally (1985) which stated that there was high use rate of health services amongst women aged 30-39 years and least among women aged below 30 years.

Result in Table 11 shows that mothers of all the parity status possessed high level of knowledge of the various components of childhood diarrhoea except those of parity status 5 and above who had average knowledge in KPMCD. The finding was anticipated and thus not a surprise. This is because the number of children an individual have, may not influence their
knowledge of a health-related issue like childhood diarrhoea. This finding is in line with that of Sally (1985) which stated that the knowledge and use rate of health services was high among mothers with 2-3 children. The implication of these findings is that mothers with average level of knowledge are most likely not to observe all the preventive measures of childhood diarrhoea.

Result in Table 12 showed that mothers with 2-4 children practiced the management of childhood diarrhoea than mothers with one child and 5 children and above. The finding was however surprising and not anticipated because it is expected that as one carries out an action, one gains experience in such a practice. This finding contradicts the finding of Ekenedo (1994) which revealed that parity level might affect the rate at which childhood diarrhoea is managed.

Result in Table 13 reveals that there was no significant difference in the level of knowledge of mothers regarding childhood diarrhoea according to age. The finding was expected and thus not a surprise. Experience has shown that age of an individual’s does not necessarily influence the individuals capacity to acquire knowledge about any given concept especially concrete practical concepts. This disagrees with the finding of Zeva and Heather (1992) which revealed that knowledge of childhood ailments was generally low and decreased with age. This finding of no significant difference was also expected. This implies that both young and old mothers did not differ in their level of knowledge regarding all the dimensions of childhood diarrhoea. This should be so because both age groups attend antenatal clinics and also rear children.

Table 14 accepted the null hypothesis of no significant difference on the level of knowledge of mothers on the SSCD and PMCD according to level of education. This is surprising and not anticipated because; mothers with high educational attainment are expected to exhibit adequate knowledge of the components of childhood diarrhoea. This finding disagrees with that of Kibret (2003) who reported that educational level of respondents investigated had significant impact on their health knowledge. There was significant difference in the level of knowledge of mothers regarding CD, MTCD and DCD according to level of education. The finding was expected because it agrees with the finding of Odusanya and Tayo (2001) who reported that education significantly influence knowledge of childhood diarrhoea. It also agrees with the finding of Rashad (2003) who found out that mothers with higher level of education were significantly more knowledgeable about childhood diarrhoeas. This is so because education enables women to assess information about childhood ailments (childhood diarrhoea inclusive).
Result in Table 15 reveals that there was no significant difference in the mothers' management practices of continuing breast feeding especially when the baby has diarrhoea, preparing weaning food hygienically during diarrhoea, boiling water used in making drinks for children during diarrhoea episode, using boiled water in preparing ORS, promptly cleaning a baby who has defecated especially during diarrhoea, mixing ORS in the right proportion and giving baby ORS as soon as diarrhoea starts, while there was significant difference in the management practices of giving baby only breast milk when he has diarrhoea, allowing a child who has diarrhoea to defecate in bushes or open spaces and washing hands with soap and water before preparing ORS according to parity status. The finding was not expected because parity could influence the management practices of childhood diarrhoea. This is because mothers with one child may not have power of her own decision making concerning the management of childhood diarrhoea. She may want to practice what she is taught only to be stopped by her mother or mother-in-law or even friends. mothers with 2-4 children are more experienced. This study is in line with Hurst and Jaco (1997) who reported in their studies that there was high use rate of health services among women with 2-4 children. Experience is said to be the best teacher, it might be expected that mothers with more than a child may practice the management of childhood diarrhoea more due to their experience and exposure.

Table 16 reveals no significant difference in the level of knowledge regarding the various dimensions of childhood diarrhoea- CD, SSCD, MTCDD, DCD and PMCD according to parity status. This was not expected and it disagrees with the findings of Ejima (2010) who reported that mothers with low parity status under-utilize antenatal health services (knowledge of childhood diarrhoea inclusive).

Table 17 shows that there was significant difference in the management practices of mothers with respect to boiling water used in making drinks for children during diarrhoea episode, allowing a child who has diarrhoea to defecate in bushes or open spaces, mixing ORS in the right proportion, washing hands with soap and water before preparing ORS and giving baby ORS as soon as diarrhoea starts according to age. This is not surprising because it is expected that as one carries out an action, he gains experience is such a practice. It is therefore expected that 40-49 years old should have gained more experience in these practices. The null hypothesis of no significant difference on childhood diarrhoea management practices according to age was rejected. While there was no significant difference in the management practices of mothers in respect of giving baby only breast milk when he had diarrhoea, continuing breast feeding especially when the baby has diarrhoea,
preparing weaning food hygienically during diarrhoea, using boiled water in preparing ORS and promptly cleaning a baby who has defecated especially during diarrhoea. This finding was surprising and not expected because it disagrees with the finding of Rahman (2003) which revealed that younger mothers had positive practice towards childhood diarrhoea more than older women. Experience has shown that the age of an individual does not necessarily affect the individual’s capacity to effectively practice health-related behaviour most especially when the behaviour is of immense benefit to the individual.

Table 18 reveals that level of education has no significant difference in the management practices of mothers with respect to giving baby only breast milk when he was diarrhoea, continuing breast feeding especially when the baby has diarrhoea, preparing weaning food hygienically during diarrhoea, using boiled water in preparing ORS and promptly cleaning a baby who has defecated especially during diarrhoea. This finding was not anticipated and therefore a surprise. This is because mothers with high educational attainments are expected to exhibit adequate knowledge and practice of childhood ailments (childhood diarrhoea inclusive). It is believed that education stimulates and empowers an individual’s intellectual capacity to put into practice concepts more especially when such concepts are concretized or practicable. While there was significant difference in the management practices of mothers with respect to continuing breast feeding especially when baby has diarrhoea, using boiled water in preparing ORS, allowing a child who has diarrhoea to defecate in bushes or open spaces, mixing ORS in the right proportion, washing hands with soap and water before preparing ORS and giving baby ORS as soon as diarrhoea starts. The finding was expected because it agrees with the finding of Odusanya and Tayo (2001) who reported that education significantly influence the knowledge of childhood ailments. It also agrees with the finding of Burker (2006) who found out in their study that mothers with higher level of education were significantly more knowledgeable about the management of childhood diarrhoea. This is because education enables mothers to assess information about childhood diarrhoea.
CHAPTER FIVE

Summary, Conclusions and Recommendations

Summary

The purpose of the study was to investigate the knowledge and management practices of childhood diarrhea by mothers in Ezeagu LGA. In order to accomplish this purpose, twelve specific objectives and corresponding research questions were formulated. Six null hypotheses were postulated for verification. Three socio-demographic variables, namely: age, level of education and parity were investigated. Literature pertinent to the study was reviewed under the following headings: conceptual framework, factors associated with knowledge and management practices of childbearing mothers regarding childhood diarrhoea, theoretical framework and empirical studies on knowledge and management practices of mothers.

The survey research design was adopted for the study. The study population comprised of 3000 registered mothers attending MCH clinics in Ezeagu LGA at the time of the study. The multi-stage sampling procedure was utilized to draw the sample. At each of the three stages employed, an appropriate sampling technique was adopted. This process produced a sample of 300 respondents which constituted ten per cent of the total number of registered mothers attending MCH clinics in Ezeagu LGA at the time of study.

The researcher designed questionnaire known as Diarrhoea Knowledge And Management Practices Questionnaire – DIKAMPQ that constituted three sections A,B, and C was the instrument utilized for collection of quantitative data. Five experts in the Department of Health and Physical Education and Science Education, University of Nigeria, Nsukka, validated the instruments. Split-half was used to determine the reliability of the instrument (DIKAMPQ) while Spearman-Brown Prophecy (correlation) formula was used to establish reliability co-efficient at the sub-scales. Kuder-Richardson 21 formula was used to determine internal consistency of section C of DIKAMPQ which comprised dichotomously – scored items of “yes” or “no”. Percentages using Ashur’s criteria for describing level of knowledge were utilized for answering the research questions while ANOVA statistic was adopted to verify null hypotheses one, two and four. Chi-square ($\chi^2$) was utilized for verification of postulated null hypotheses three, five and six.
Out of the 300 copies of the questionnaire distributed, 284 copies were used for data analysis. The SPSS batch system was employed for data analysis. The findings of the study indicated that:

1. Mothers had high (71.21%) level of knowledge of the concept of childhood diarrhoea (KCD). This is contained in Table 1.

2. Mothers had very high (84.94%) level of knowledge of the signs and symptoms of childhood diarrhoea. This is contained in Table 2.

3. Mothers had high (76.58%) level of knowledge of the modes of transmission of childhood diarrhoea. This is contained in Table 3.

4. Mothers had high (77.82%) level of knowledge regarding the dangers of childhood diarrhoea. This is contained in Table 4.

5. Mothers had high (60.28%) level of knowledge regarding the preventive measures of childhood diarrhoea. This is contained in Table 5.

6. Majority of mothers adopted all the management practices of childhood diarrhoea ranging from 72.2%- 90.5% except “giving their babies only breast milk during diarrhoea (42.3%) and (35.6%) mothers who allowed their children to defecate in bushes or open spaces. This is contained in Table 6.

7. Mothers of all the levels of education possessed very high level of knowledge of SSCD and high level of knowledge of CD, MTCD, DCD and PMCD while only those with tertiary education possessed average level of knowledge of PMCD. This is contained in Table 7.

8. Higher proportion of mothers with tertiary education adopted all the listed diarrhoea management practices percentage ranging from 15.8% - 38.7% except allowing a child to defecate in the bush more than those with no formal, primary and secondary education. This is contained in Table 8.

9. Mothers of the various age groups possessed high (ranging from 61.33% - 85.59 level knowledge in the various dimensions of childhood diarrhoea except those of age group 20-29 years who had average (57.67) knowledge of the preventive measures of childhood diarrhoea. This is contained in Table 9. Lower proportion of (ranging 13.4% – 34.2%) CBMs’ of age group 20-29 years adopted the listed management practices: continuing breast feeding when baby has diarrhoea, preparing wearing food hygienically during diarrhoea, boiling water used in making drinks, using boiled water in preparing ORS, promptly cleaning a baby who has defecated during diarrhoea, mixing ORS in the right
preparation, washing hands with soap and water before preparing ORS and giving baby ORS as soon as diarrhoea starts, except in giving baby only breast milk during diarrhoea and allowing a baby who has diarrhoea to defecate in bushes or open spaces more than those in age group 30-39 years and 40-49 years. This is contained in Table 10.

9. Mothers of all the parity statuses possessed high level of knowledge ranging from (61.24% - 87.99%) of the various dimensions of childhood diarrhoea except those of parity status 5 and above who possessed average (57.99%) knowledge in PMCD. This is contained in Table 11.

10. Lower proportion of the mothers (ranging from 35.2% - 45.4%) of parity status 2-4 adopted all the listed diarrhoea management practices except giving baby only breast milk when he/she has diarrhoea and allowing a child who has diarrhoea to defecate in bushes or open spaces more than mothers’ of parity status 1 and 5 and above. This is contained in Table 12.

11. There was no significant difference in the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea (KCD (F=1.492, P=.227), KSSCD (F= .062, P=.939), KMTCD (F=.739, P=.478), KDCD (F=1.257, P=.286) and KPMCD (F=1.332, P=.266) according to age. This is contained in Table 13.

12. There was no significant difference in the level of knowledge of SSCD (F=2.528, P=.058) and KPMCD (F=.661, P=.576) while there was significance difference in the level of knowledge of CD (F=5.450, P= .001), MTCD (F= 6.085, P=.058), and KDCD (F=10.194, P=.000) according to level of education of mothers. This is contained in Table 14.

13. There was no significant difference in the following management practices of mothers (continuing breastfeeding during diarrhoea ($\chi^2= .170$, P=.918), preparing weaning food hygienically during diarrhoea ($\chi^2=.350$, P=.858), boiling water used in making drinks for their children during diarrhoea ($\chi^2=.525$, P=.769), using boiled water in preparing ORS ($\chi^2= 1.841$, P=.398), promptly cleaning their babies after defecation especially during diarrhoea ($\chi^2=3.730$, P= .155), mixing ORS in the right proportion ($\chi^2= 3.879$, P=.144) and giving ORS as soon as diarrhoea starts ($\chi^2=.488$, P=.784) while there was significant difference in the following practices: allowing a child to defecate in bushes or open spaces during diarrhoea ($\chi^2=6.11$, P=.047), washing hands with soap and water before preparing ORS ($\chi^2=6.455$, P=.040) and
giving baby only breast milk during diarrhoea episode ($\chi^2=15.22, P= .000$) according to parity statuses. This is contained in 15.

14. There was no significant difference in the level of knowledge regarding the various dimensions of childhood diarrhoea CD (F=2.649, P= .072), SSCD (F=1.736, P= .178), MTCD (F=2.399, P= .093), DCD (F=.418, P=.659) and PMCD (F=1.539, P= .216) according to parity status. This is contained in Table 16.

15. There was significant difference in the following practices of mothers with respect to giving ORS as soon as diarrhoea starts ($\chi^2=8.197, P=.017$), mixing ORS in the right proportion ($\chi^2=11.961, P=.003$), allowing a child who has diarrhoea to defecate in bushes or open spaces ($\chi^2=13.954, P=.001$), boiling water used in preparing ORS ($\chi^2=15.562, P=.000$) and washing hands with soap and water before preparing ORS ($\chi^2=16.311, P=.000$), while there was no significant difference in the following management practices of mothers: (boiling water used in making drinks for their children during diarrhoea ($\chi^2=.507, P=.776$), continuing breast feeding during diarrhoea episode ($\chi^2=.931, P=.628$), promptly cleaning a baby who has defecated especially during diarrhoea ($\chi^2=1.159, P=.560$), giving baby only breast milk during diarrhoea episode ($\chi^2=1.793, P=.408$) and preparing hygienically weaning food during diarrhoea ($\chi^2=4.675, P=.097$) according to age. This is contained in Table 17.

16. There was no significant differences in the following management practices of mothers regarding childhood diarrhoea promptly cleaning a baby after defecation especially during diarrhoea ($\chi^2=1.011, P=.799$), giving baby only breast milk during diarrhoea ($\chi^2=1.968, P=.579$), boiling water used in making drinks for children ($\chi^2=3.931, P=.269$), and preparing weaning food hygienically especially during diarrhoea ($\chi^2=5.600, P=.133$). while there was significant difference in the following management practices of mothers: continuing breast feeding during diarrhoea episode ($\chi^2=7.959, P=.047$), boiling water used in making ORS for their children during diarrhoea ($\chi^2=28.832, P=.000$), allowing a child who has diarrhoea to defecate in bushes or open spaces ($\chi^2=20.998, P=.000$), mixing ORS in the right proportion ($\chi^2=44.495, P=.000$), washing hands with soap and water before preparing ORS ($\chi^2=37.905, P=.000$) and giving ORS as soon as diarrhoea starts ($\chi^2=34.591, P=.000$) according to level of education. This is contained in Table 18.
Conclusions

Based on the findings and discussions of the study, the following conclusions were attained;

1. Mothers had high knowledge (71.21%) of the concept of childhood diarrhoea. This answers research questions 1.
2. Mothers had very high knowledge (84.95%) of the signs and symptoms of childhood diarrhoea. This answers the research question 2.
3. Mothers had high knowledge (76.58%) of the modes of transmission childhood diarrhoea. This answers research question 3.
4. Mothers had high knowledge (77.82%) of the dangers of childhood diarrhoea. This answers research question 4.
5. Mothers had high knowledge (71.21%) of the preventive measures of childhood diarrhoea. This answers research question 5.
6. Mothers adopted various childhood diarrhoea management practices such as promptly cleaning a baby who defecated (90.5%), continue breast feeding baby especially during diarrhoea (88.7%), boiled water used in making drinks for the children (85.6%), prepared food hygienically during diarrhoea episode (83.1%), washed hands with soap and water in preparing ORS (75.75%), mixed ORS in the right proportion (73.65) and gave ORS as soon as diarrhoea starts (72.2%). Whereas lower proportion of the mothers gave their babies only breast milk during diarrhoea (42.35) and allowed their children who has diarrhoea to defecate in bushes or open spaces (35.6%). This answers research question 6.
7. The overall level of knowledge for mothers with tertiary education in the various dimensions of childhood diarrhoea was very high, while those without formal education, primary and secondary education had high level of knowledge. This answers research question 7.
8. Level of education had no difference in the management of practices of mothers regarding childhood diarrhoea. This answers research questions 8.
9. Mothers of the different age groups possessed high level of knowledge in the various dimensions of childhood diarrhoea except those of age group 20–29 years who had average (57.67%) of the preventive measures of childhood diarrhoea. This answers research question 9.
10. Mothers of age group 20-29 years adopted the various management practices regarding childhood diarrhoea more than mothers aged 30-39 years and 40-49 years respectively. This answers the research question 10.

11. Mothers of all the parity statuses possessed high level of knowledge of the various dimensions of childhood diarrhoea except those of parity status 5 and above who possessed average knowledge in PMCD. This answers research question 11.

12. Lower proportion of mothers of parity status 2-4 adopted the management practices more than those of parity status 1 and 5 and above. This answers research question 12.

13. There was no significant difference in the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea according to age. This tests hypothesis one.

14. There was no significant difference in the level of knowledge of the SSCG and PMCD, while there was significant difference in the level of knowledge of CD, MTCD and DCD according to level education of the mothers. This tests hypothesis two.

15. There was no significant difference in the listed management practices of mothers: continuing breast feeding during diarrhoea, preparing weaning food hygienically during diarrhoea, boiling water used in making drinks for the children, using boiled wastes in preparing ORS, promptly cleaning a baby after defecation especially during diarrhoea, mixing ORS in the right proportion and giving baby ORS as soon as diarrhoea starts, and there was significant difference in the practices of allowing a child who has diarrhoea to defecate in bushes or open spaces during diarrhoea, washing hands with soap and water before preparing ORS and giving baby only breast milk during diarrhoea episode according to parity status. This tests hypothesis three.

16. There was no significant difference in the level of knowledge of mothers regarding the various dimensions of childhood diarrhoea: CD, SSCD, MTCD, DCD and PMCD according to parity status. This also tests hypothesis four.

17. There was significant difference management practices of mothers with respect to giving ORS in the right proportion, allowing a child who has diarrhoea to defecate in bushes or open spaces, boiling water used in preparing ORS and washing hands with soap and water before preparing ORS. There was no significant difference in the management practices of mothers with regards to boiling water used in making drinks for children especially during diarrhoea, continuing breast feeding during diarrhoea, promptly cleaning a baby who has defecated especially during diarrhoea, giving baby only breast milk during diarrhoea, and preparing hygienically weaning food during diarrhoea according to age. This also tests hypothesis five.
18. There was no significant difference in the management practices of mothers regarding childhood diarrhoea with respect to promptly cleaning a baby after defecation especially during diarrhoea, giving baby only breast milk during diarrhoea, boiling water used in making drinks for children and preparing weaning food hygienically especially during diarrhoea according to level of education. There was significant difference in the management practices of mothers with respect to continuing breast feeding during diarrhoea episode, boiling water used in making ORS for their children during diarrhoea, allowing a child who has diarrhoea to defecate in bushes or open spaces, mixing ORS in the right proportion, washing hands with soap and water before preparing ORS and giving ORS as soon as diarrhoea starts according to level of education. This tests hypothesis eight.

**Implications for Health Promotion**

Increasing occurrence of diarrhoeal diseases among the under-five children call for post-natal child health care education and general education of both nursing and pre-school age caring mothers in order to improve on their children’s national status, improve on hygiene care status and environmental sanitation. Child health care should be taught at various levels of education by health and allied educators. In addition, matrons and nurses in charge of antenatal and post natal clinics should periodically teach mothers, especially the non-literate on healthy feeding habits, hygiene habits and especially the advantages of proper exclusive breast-feeding over bottle feeding, effective family planning, so as to reduce the number of children to a manageable size that parents could properly look after. Thus, health education of women of childbearing age would result to hygiene and sanitation problems that might predispose the under-five children to diarrhoeal diseases and by implication infant mobility and mortality rate in the communities.
Recommendations

Based on the finding and conclusion of this study, the following recommendations were drawn:

1. The health workers at the various MCH in Ezeagu LGA should strengthen their teachings on the management practices of mothers regarding childhood diarrhoea. Since these mothers varied in their responses in all the management practices.

2. More scientific research should be conducted in Ezeagu LGA on factors that hinder the management of childhood diarrhoea by mothers. This is essential for developing rational and effective intervention to the problem.

3. All methods of ORT should be uniformly taught to mothers so that they can have a variety of choice based on conveniences to them.

4. Since there was significant difference in the knowledge and management practiced of mothers regarding childhood diarrhoea according to level of education. The state government should provide free and compulsory education for both younger and older mothers to enable then acquire education up to tertiary level so as to widen their scope in all spheres of life including health issues such as childhood diarrhoea.

Suggestions for further studies

1. Research work should be concentrated on the demographic factors that facilitate the management practices of mothers regarding childhood diarrhoea.

2. Studies should also be conducted to determine cultural factors that predispose mothers to poor management of childhood diarrhoea.
References


[http://www.keepkidshealthy.com/cgi-bin/masterpfp.cgi02/01/2011](http://www.keepkidshealthy.com/cgi-bin/masterpfp.cgi02/01/2011). 11:35:48pm.


Appendix I

Department of Health and Physical Education,
University of Nigeria,
Nsukka.
September, 2011.

Dear respondent,

I am a postgraduate student of the above Department currently conducting a study on the childhood diarrhoea knowledge and management practices of childbearing mothers in Ezeagu L.G.A 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 any part of this questionnaire. Your maximum cooperation will be highly appreciated.

Thanks for your anticipated valuable time and assistance.

Yours Sincerely,

Ebunoha Helen U.
(Researcher).
Appendix II

Questionnaire

You are required to tick only one option as it applies to you in any of the statements/questions below:

1) To which of the following age bracket do you belong?
   A) 20 – 29 years
   B) 30 – 39 years
   C) 40 – 49 years

2) What is your highest educational qualification?
   A) No formal education
   B) Primary school education
   C) Secondary school education
   D) Tertiary education

3) How many children have you?
   A) One
   B) 2 – 4
   C) 5 and above

4. What do you understand by the term childhood diarrhoea?
   a) disturbance of the gastro-intestinal tract
   b) Passing of hard stool
   c) Black stool
   d) White stool

5. Childhood diarrhoea is also regarded as -
   a) Dysentery
   b. Constipation
   c) Loose watery stool
   d) Abdominal pain

6. What do you feel is the cause of diarrhoea?
   a) Colic
   (b) Worms
   (c) Dirty edibles
   (d) Chicken pox

7. What do you do if diarrhoea continues beyond 24 hours?
   a) Continue with ORT
b) Discontinue with ORT

c) Introduce weaning food

d) Visit a health facility

8. Which one of these is a sign of diarrhoea?
a) Passing of watery stool
b) Feeling to pass stool but cannot
c) Pain while passing stool
d) Blood in stool

9. Which one of these is a symptom of diarrhoea?
a) Constipation
b) Weight loss
c) Bronchial cough
d) Rickets

10. The severe symptom noticed in child with diarrhoea is?
a) Weight loss, with weak pulse
b) Dry hands
c) Passing of less faeces
d) Sunken mouth

11. Other signs of childhood diarrhoea include;
a) Sunken eyes and loss of skin elasticity
b) Passage of mucus stool
c) Passage of blood stool
d) Over feeding

12. How does diarrhoea spread?
a) By handshaking
b) By contact
c) By penetration of skin
d) By transplacental infection

13. Faeco – oral transmission of diarrhoea means?
a) Urine into the mouth
b) Human mouth through the anus
c) Human mouth into the stomach
d) Faecally contaminated hands into the mouth

14. Defecating in open spaces, bushes and in streams can lead to
a) Outbreak of diarrhoeal disease
b) Offensive odour and death
c) Outbreak of measles
d) Outbreak of chickenpox

15. Drinking contaminated water, eating food prepared with unwashed hands in a dirty environment can lead to
a) Weakness and hunger
b) Adequate feeding
c) Diarrhoeal disease
d) Infant mortality

16. The main danger of diarrhoea is
a) Kwashiokor
b) Dehydration
c) Scurvy
d) Rickets

17. Dehydration is associated with?
a) Acute loss of water and salt from the body
b) Backache and thirst
c) Bleeding and lower abdominal pain
d) Acute loss of blood

18. Malnutrition occurs as a result of?
a) Insufficient food intake due to diarrhoeal disease
b) Insufficient taking of water only
c) Taking vitamins only
d) Weakness and hunger

19. The ultimate danger of childhood diarrhoea is
a) Malfunctioning of the bones
b) Abdominal cramp
c) Over feeding
d) Death

Tick the as many as possible the ones that applies to you

Diarrhoea can be prevented through;
20. Proper breast-feeding
21. Proper hand-washing
22. Use of plenty of water for hygiene and use of clean water for drinking [ ]
23. Safe disposal of the stools of young children [ ]
24. Measles Immunization [ ]

**Instruction:** You are required to indicate with a tick ✓ on “Yes” or “No” against the practice or item that applies to you.

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<tr>
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<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>25</td>
<td>Do you give your baby only breast milk when he/she has diarrhoea?</td>
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<td>26</td>
<td>Do you continue breast feeding especially when your baby has diarrhoea?</td>
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<td>27</td>
<td>Do you prepare weaning food hygienically during diarrhoea episode?</td>
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<td>28</td>
<td>Do you boil water used for making drinks for your children during diarrhoea episode?</td>
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<td>29</td>
<td>Do you use boiled water in preparing Oral Rehydration Solution (ORS)</td>
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<td>30</td>
<td>Do you allow a child who has diarrhoea to defecate in bushes or open spaces?</td>
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<td>31</td>
<td>Do you promptly clean your baby who has defecated, washing the baby’s hands and also your hands especially during diarrhoea?</td>
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<td>32</td>
<td>Do you mix Oral Rehydration Solution (ORS) in the right proportion</td>
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<td>33</td>
<td>Do you wash your hands with soap and water before preparing ORS?</td>
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<tr>
<td>34</td>
<td>Do you give ORS as soon as diarrhoea starts?</td>
<td></td>
</tr>
</tbody>
</table>