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Diarrhoea in Children Under Five Years of Age in Abuja-Nigeria - The Priliminary Study of the Risk Factors

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Abstract:- Diarhoea is still one of the major disease affecting children under five years of age worldwide. It is a very common disease in sub Saharan Africa especially in Nigeria. Despite the current interventions of improving mothers' knowledge of risk of diarhoea in their children, through delivery of diarrhea lectures in clinics and maternity centers, the rate under-five diarrhea is still increasing. This study has described the perceptions that may influence the occurrence of diarrhea and recurrent diarrhea in children under five years in Abuja. This study identified some of the risk factors through literatures and practical observations of cases in two different areas in Abuja; Asokoro - where the rich lives and Karu - populated by the low income earners. The prominent amongst the factors are mother's education, family size, breast-feeding, source of water, developmental milestones, food hygiene, and personal hygiene. The obtained information might be used as a starting point to conducting the actual study on the subject matter with a long term goal to introduce possible interventions that will reduce the risk of diarrhea in children.

Keywords:- *Diarhoea, Morbidity, Mortality, Risk Factor.*

I. INTRODUCTION

Diarhoea is a medical condition that is defined as change in bowel habit from normal passage of hard or firm stool to passage of more fluidly stool (Yilgwan and Okolo, 2012). In other words Diarhoea is a diseases characterized by passage of loose stool or watery stool, with increased frequency (three times or more a day), increased volume and with an associated offensive odour (Yilgwan and Okolo, 2012). Diarhoea is one of the major cause of dehydration and globally it has been recognized as the second leading cause of childhood morbidity and mortality especially in sub Subharan Africa (Ogbu et al., 2007). While according to Korie et al., (2012), it is one of the leading cause of death in children under five years especially in tropical countries. Furthermore, according to world health organization report , in developing countries each child might have about two to four million under five death worldwide each year in the children under five year (ogbu et al., 2007) it is causes more for about 160,000 child mortality in Nigeria annually (Aminu et al., 2010).

This is a catchy subject that have attracted many studies over the years. However, identifying the risk factors of Diarhoea in a metropolitan city as Abuja that has a clear distinction between two category of people (the rich and the poor communities) co-habiting will open up the various discussion channels for a seamless solution to the menace. This presentation therefore is a preliminary study to determine the risk factors for developing diarhoea and recurrent diarrhoea among children under five years old in Abuja. This will give a leeway into a more elaborate study into the factors as well as to explore mothers' perception about the causes of diarrhoea and recurrent diarrhoea in children under five years old in Abuja. Detail study will also assess the different types and level of child's exposure to risk factors of diarrhea and recurrent diarrhea.

II. LITERATURE

Worldwide, diarrhoea in children under five years old is a very significant public health issue because it has been a burden and a threat to the health of children under five years. According to Garacia et. al.(1994), it was proved that in most conditions of under-five diarrhoea, the cause is multifactorial and usually very difficult to identify. However, this is not always the case. In comparison, another study conducted by Ogunsanya et al. (1994), has shown that many under-five diarrhoea cases in Nigeria are mainly associated with infective microbial agents such as enterotoxigenic Escherichia coli (ETEC), enteroinvasive Escherichia coli (EIEC) and Clostridium specie such as Clostridium welchi (Ogunsanya et al. 1994). Again, a study that was conducted by Reither el al. (2007) revealed that the main cause of diarrhoea in children under five years is related to wide ranges of bacteria, viruses, and parasites. This further support the findings about under-five diarrhoea disease and the infective agents involved.

In addition, infection or infestation of children by either the bacteria, viruses, or fungi depends on geographical location, local meteorological or socioeconomic condition of the host (child) (Reidter et al. 2007). This is in line with the study conducted by Korie et al.(2012) who confirmed that under-five diarrhoea is more common in infants (babies 0-24 months) and children under five years that are from a low socio-economic background. Furthermore, even among the bacteria and viruses; some might be more important in causing

diarhoea than the other. Danjuma et al. (2013) has revealed that of all the microorganisms or bacteria causing diarhoea in children under five years, enteropulhogenic Escherichia coli (EPEC) is one of the most important bacterial agent that is multiding resistant and causing diarrhoea in infants. Olianu and Offune (2009) also added that Campylobacter bacteria is another important infective agent that causes childhood diarrhoea. Junaid et al. (2011) has again continued that rotavirus is one of the commonest cause of gastroenteritis in children under five years and the predisposing factors to this rotavirus includes attending day care, playing review with toys, playing with other children, and eating of food not requiring cooking (Audu et al 2002; Odimayo et al. 2008 and Aminu et al. 2008) support this finding. Additionally, among the parasites, the common once that causes diarrhoea in children are helmenthes and protozoans such as Ascaris lumbricoids, Fiitamocba histolitica and Qiadia Lainblia, and they can easily cause diarrhoea in children who are from low socioeconomic status or those who are malnourished (Tinuode et al. 2006).

Furthermore, the risk of diarrhoea and recurrent diarrhoea in children under-five years is influenced by so many other factors. For example, Climent (2000) revealed that breastfeeding has a very important protective effect on children there by reducing their risk of diarrhoea. Climent again found that the risk of diarrhoea is higher in the mixed-fed infants (infants that feed on both breast milk and artificial milk) and it is even twice higher among the weaned children. In addition to Climent's study, John et al. (2001) showed that hygienic quality of a prepared food also plays important role when the risks of diarrhoea and recurrent diarrhoea is considered. Their study further explained that when food is prepared and stored, microorganisms easily contaminate it. When children are fed with this food, their risk of developing diarrhoea increases.

However irrespective of the type and number of the exposure to diarrhoea risk factor, it was revealed that the risk of diarrhoea in children varies with age. For example, Khandala et al. (2008) described that the risk of diarrhoea in infants increases in the first six to eight months of life and gradually declines as the child grows older just as in the case of childhood cough and fever.

Believing the fact that the health of an individual can be shaped by the environment in which the individual lives, a study conducted by Ralieem et al. (2009) explained that environmental factors like poor sanitation condition, poor hygiene practices, and unsafe source of drinking water are among the major risk factors for under-five diarrhoea especially in developing countries. This finding is further supported by the study conducted by (Oguntoke et al. 2009) and that of Yilgwan et. al. (2010) which revealed the strong association between the risk of developing diarrhoea and domestic water sourcing practice.

Yilgwan and Okolo pointed out another important factor in relation to under-five diarrhoea. These two researchers wrote that there is a very strong association between mother's educational status, breastfeeding, diarrhoea in other siblings and under-five diarrhoea. Their report showed that the prevalence of diarrhoea is higher in children whose parents are not educated, but is lower among those children whose parents are educated. This is because most educated mothers are fully aware and practice good hand washing technique, good breastfeeding and complementary feeding practice, as well as good weaning practice aware (Yilgwan and Okolo,2012). However, being highly knowledgeable about the importance of hygiene practice might not necessarily means it has been practiced well because many of the educated Nigerian mother that have children under five years might be working class women, therefore most of their children especially those that are below school age might be taken care of by home caregivers who hardly practice or promotes good hygiene (Ogunrinde et. al. 2012).

According to Water Aid reports, many of Nigerian children die from a condition that can be easily avoided with constant practice of simple hygiene and adequate sanitation. Water Aid reports that Nigeria constitutes 13% of global under-five mortality with about 100,000 under-five death each year (Water Aid, 2013). Of this 100, 000 under-five mortality in Nigeria, 75% of the deaths occurs from diarrhoea resulting from poor sanitation condition and poor access to safe drinking water (Water Aid, 2013). However, this death could be greatly reduced with proper hand washing technique (using soap and water) especially for mothers after using toilet, after changing babies nappies, before and after feeding children and also after handling poultry and other livestock (Water Aid, 2013). Finally, Water Aid report concluded that in most developing countries, lack of soap might not be the barrier in hand washing technique; rather the soaps are rarely used despite its availability and affordability (Water Aid, 2013). Moreover, in some rural parts of Nigeria, they may have enough water supply but then the water could be unsafe or contaminated. Failure of water purification due to lack of water treatment plans or failure of water purification at home either through filtration, or by adding alum to the water or by boiling it exposes many children to acute diarrhoea especially during dry season (Danjuma et al. 2013).

Similarly, in a bacteriological study conducted again in some rural areas of Nigeria, it was found that most of the traditional water sources such as ponds, rivers, and springs arc consistently contaminated with faecal colifonn and streptococcal bacteria, which are all causes of diarrhoea (Danjuma et al. 2013). This is also proved by a study conducted earlier by (Oyejide et. al 1994) and Ekunem et al. (1991) which showed that urinating and defecating in chamber pots in dwelling units, presence of faeces, bath in and around the toilet area, source of domestic water as well as indiscriminate disposal of waste are strongly associated with occurrence of diarrhoea. Ollier findings revealed that mothers

usually allow their children to defecate on the floor and just use a rag or a piece of tissue paper to clean up the faeces meanwhile faecal residue remains on the floor and causes contamination (Junaid et al. 2004).

Another important factor associated with under-five diarrhoea in Nigeria is micronutrient deficiency. Chizoba, (2014) has shown that vitamin A deficiency is strongly related with common childhood infections particularly diarrhoea. Chizoba again revealed that vitamin A is a fat-soluble vitamin that plays a very important role as an immune booster in the body. Therefore, its deficiency causes and complicates diarrhoea disease in children under-five years and that might lead to under-five mortality (Chizoba. 2014).

Nonetheless, in many cases under-five diarrhoea may occur secondary to or because of an underlying disease. For example, diarrhoea is one of the signs and symptoms of some deadly infectious diseases such as Human Immune Deficiency virus (HIV), Acquired immune deficiency Syndrome (AIDS) and other endemic diseases such as malaria, sickle cell disease and influenza (Ntia et al. 2012).Therefore, children under five years who got these infections through mother to child transmission or through other means might be presenting with recurrent diarrhoea (Ntia et al. 2012).

Finally some studies such as Omotade et al. (2000) has shown that not all types of diarrhoea are been recognised as illness. Some types of diarrhoea are linked with some ethnic groups or occupation, while others associated childhood diarrhoea with teething (Enc-Obong et al. 2000).

Summarily, the research enumerated in the review points to the main common cause of diarrhoea in children under five years to be related to wide ranges of bacteria, viruses, and parasites. The prominent among the risk factors of diarrhoea in children under five years are mother's education, family size, breast-feeding, source of water, developmental milestones, food hygiene, and personal hygiene.

III. METHODOLOGY

This preliminary study proposed a detailed study based on the a mixed method design (Quantitative and Qualitative). The population of the study are mothers of children under five years in two study groups based on the location in Abuja. Those at high well to do area (Asokoro) and the ones at low underprivileged location (Karu).

- *Inclusion Criteria*
- Mothers who have children under five years;
- Mothers who lives in either Asokoro or Karu areas of Abuja Metropolis

- *Exclusion Criteria*
- Mothers who have children but not under five years
- Mothers who have children under five years but not living in Asokoro or Karu
- Mothers who have children under five years living in Asokoro or Karu but not willing to participate

IV. DATA COLLECTION AND ANALYSIS

The quantitative phase will focus on identifying both internal and external factors contributing to occurrence of diarrhoea and recurrent diarrhea in children under five years. Self-developed structured questionnaire will be the primary technique for collecting the survey data. The qualitative survey involves an in-depth recorded verbal interviews with the willing mothers. The quantitative survey will be analysed using the SPSS package to get the descriptive statistics of the survey items. The qualitative phase will allow data collection and analysis to proceed simultaneously. The data collected through interviews will be coded and analysed for themes as follows first step involved leading through the drafted transcript and writing notes coding the information by grouping text under similar heading of activities or situations and labelling them, aggregating similar codes together to generate themes interrelating and connecting themes and finally the detailed narration of the case narrated (Cieswell. 2002).

V. CONCLUSION

Diarrhoea is a very common disease in sub–Saharan Africa especially in Nigeria. Despite the current interventions of improving mothers' knowledge of risk of diarrhoea in their children, through delivery of diarrhea lectures in clinics and maternity centers, the rate of under-five diarrhea is still increasing. This preliminary study reveals the opinion of scholars as per the causes and the risk factors associated with the occurrence of diarrhea and recurrent diarrhea in children under five years. Bacteria, viruses, and parasites has been identified as the causative agents of diarrhoea while among the risk factors of diarrhoea in children under five years, mother's education, family size, breast-feeding, source of water, developmental milestones, food hygiene, and personal hygiene featured prominently in the literature.

A methodology for the detail study was proposed as mix mode with two study groups based on the living areas of Abuja (Asokoro or Karu). The quantitative will be based on self-designed questionnaire of multiple-choice questions while the qualitative component will explore the perception of mothers about the cause of diarrhea in their children. The obtained information might be used as an initial step or a starting point to introduce possible interventions that will reduce the risk of diarrhea in children. This may be achieved by incorporating mothers' perception into health messages. It is hoped that the information obtained at the end of the study

will be used to develop appropriate interventions to reduce the prevalence of diarrhoea and recurrent diarrhoea in children.

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