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Comparative Studies of Knowledge and Perception of Parents on Home Managements of Diarrheal Diseases among Under Five Children Between two Communities Of Kano State, Nigeria

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ABSTRACT
Background*: Diarrhea is a major cause of morbidity and mortality among Nigerian children. More than half of under-five mortalities in Nigeria are caused by diarrhea and malnutrition. Studies have shown that the adequate care of diarrheal disease begins at home, however a high proportion of caregivers in Nigeria often resort to traditional practices of diverse complexity to manage diarrhea.*
Aim*: This study compared the practices of care-givers regarding home management of diarrheal diseases among under-five children between two communities with different demographic characteristics in Kano State.*
Method*: A descriptive cross sectional design was used. The study involved 360 participants from each community recruited by cluster, systematic and random sampling techniques. Pretested structured interviewer administered questionnaires were used for the study and data was analyzed using SPSS version 16 software.*
Results: *Majority of the care givers had adequate knowledge of management of diarrheal diseases at home. The rate of Oral Rehydration Salt (ORS) use was 37.6% in Dorayi quarters and 33.1% in Nasarawa G. R. A. while Salt-Sugar Solution (SSS) was 24.0% in both communities. More than half of respondents in Dorayi quarters and Nasarawa G.R.A are knowledgeable on how to prepare SSS correctly. Continued breastfeeding during diarrhea was practiced by 23.6% and 23.8% of respondents in Dorayi quarters and Nasarawa G. R. A. respectively.*
Conclusion*: Majority of the surveyed respondents correctly manage diarrhea at home. Despite reasonable differences in the type of settlement, socio economic status and population between the study areas, the care givers in the study areas demonstrated nearly equal knowledge and perception on the causes and management of diarrheal diseases at home,.*

Key words: Diarrheal Diseases, Under-Five Children**,** Management & Knowledge

I. BACKGROUND

According to World Health Organization (WHO) and United Nations Children Fund (UNICEF) in 2012, there are about two billion cases of diarrheal disease worldwide every year, of which 1.9 million children younger than 5 years of age die from diarrhea each year mostly in developing countries. This amounts to 18% of all the deaths of children under the age of five and means that more than 5000 children are dying every day as a result of diarrheal diseases. Of all child deaths from diarrhea, 78% occur in the African and South-East Asian regions (Farthing et al., 2012). Each child under 5 years of age experiences an average of three annual episodes of acute diarrhea. Diarrheal disease due to unsafe water and lack of sanitation is the greatest cause of morbidity and mortality in under-five children in the world. The vast majority of deaths from diarrhea are among children under 5 years of age living in low- and middle-income countries, especially in poor countries (USAID, 2010). A child dies every 15 seconds from diarrhea caused largely by poor sanitation and a contaminated water supply (Barreto, 2007). As the child's immune system is progressively compromised with each bout of diarrhea, related illnesses kill millions more indirectly. In developing countries, approximately 2 million people, the vast majority of whom are under-five children, die from diarrhea each year (Ahs, Wenjing, Lofgren & Forsberg, 2010). Nearly 90% of diarrhea is attributed to unsafe drinking water, inadequate sanitation and poor hygiene (Ahs, et al., 2010).

Diarrhea is a major health problem (Kosek, Bern, Guerrant, 2003). It is usually a symptom of an infection in the intestinal tract, which has a variety of causative agents including viruses, bacteria and parasites (Nyantekyi, 2010). Diarrhea is an alteration in a normal bowel movement characterized by an increase in the water content, volume, or frequency of stools. A decrease in consistency (i.e., soft or liquid) and an increase in frequency of bowel movements to >3 stools per day have often been used as a definition for epidemiological

investigations. Other direct consequences of diarrhea in children include growth faltering, malnutrition, and impaired cognitive development in resource-limited countries (Farthing et al, 2012).Though most episodes of childhood diarrhea are mild, acute cases can lead to significant fluid loose and dehydration which may result in death or severe consequences if fluids are not replace at first sign of diarrhea WHO/UNICEF, 2009). Diarrheal infection spreads through the ingestion of contaminated food or drinking-water, or person-to-person as a result of poor hygiene. (Shimelis, 2008).The youngest children are most vulnerable: Incidence is highest in the first two years of life and declines as a child grows older. Mortality from diarrhea has declined over the past two decades from an estimated 5 million deaths among children under five to 1.5 million deaths in 2004, (WHO, 2009),

It is widely recognized that exposure to diarrhea pathogens in developing countries is associated with the age of the child, quality and quantity of water, availability of toilet facilities, housing conditions, level of education, household economic status, place of residence, feeding practices, and the general sanitary conditions (personal or domestic hygiene) in the vicinity of the house (Wondwossen, 2008). Socioeconomic factors may directly and indirectly affect environmental, behavioral, nutritional, and demographic risk factors, with the exception of age and sex (Green, Small, Casman, 2009).

The median incidence of childhood diarrhea across all studies was 3.2 episodes per child year, and varies from 1.9 in the WHO South East Asian Region to 5.1 in the WHO Eastern Mediterranean Region (Ahiadeke, 2000). There are also differential trends within regions. In Amphoe, northern part of Thailand the incidence of diarrhea in children under five was 3.4 episodes per child per year (Johns Hopkins University, 2005). In Hong Kong, 11% of all children less than 5 years of age hospitalized between the periods July 1997 to June 1999 were discharged with a primary diarrhea diagnosis (Nelson et al., 2004). In Kathura community, Haryana state, India the incidence of diarrhea was greatest among the infants (75.46%), followed by the 1-2 year olds (67.25%) and 2-3 year olds (51%). The average number of diarrheal episodes per child was 2.56 and the number of episodes per year was 5.48 (WHO, 2000).However, a lower attack rate of 1.5/child/year was reported in rural Bangladesh, Dhaka. Meanwhile another study showed that the prevalence rate of diarrhea in under five children was observed to be 23.2% in the rural area of Chandigarh of the same country. A large-scale study on Breast-feeding diarrhea relationship was carried out by Population Dynamics Unit, University of Ghana, Using Demographic and Health Survey data sets from Ghana and Nigeria. The study found that mixed-fed infants aged between 0 and 11 months tend to have a higher risk of diarrhea than fully breast-fed children, while the risk of diarrhea among weaned infants is twice that of mixed-fed infants (Ahiadeke, 2000).

Home management practices are those treatment measures taken by mothers/caregivers on their sick children at home before reporting to hospitals or other health facility to seek medical assistance from doctors, nurses and other health workers when those measures at home fail or when the illnesses worsen (WHO, 2000). In underdeveloped and developing countries, acute gastroenteritis involving diarrhea is the leading cause of mortality in infants and children younger than 5 years of age (Marie et al., 2005). Diarrhea is a serious problem in many areas of the world and is especially lethal when superimposed on malnutrition. Diarrhea results in large losses of water and electrolytes, especially sodium and potassium, and frequently is complicated by severe systemic acidosis (UNICEF, 2000).The correct care of diarrheal disease begins at home (King *et al.,* 2003). At the onset of diarrhea, mothers can immediately begin to administer increased amount of whatever fluid are available, for example rice water, clear soup, or plain water. Fluids high in sugar (such as cola, apple juice, and sports drink, which contain 20mmol/l sodium and have high osmolality of 350-750mosm/l) may exacerbate diarrhea and should be avoided. At the same time the, mother should continue to breastfeed if the child is not yet weaned, and/or continue feeding the child a regular diet in smaller amounts, and usually at more frequent intervals (Elizabeth *et al.,* 2007). The key danger in an episode of diarrhea is that the child will become dehydrated. An essential part of correct home care is, therefore, to ensure that mothers can recognize signs of dehydration. If a child shows signs of dehydration or if the child appears not getting better, the mother should immediately administer ORS (if available) and seek care from qualified provider outside the home (UNICEF, 2009).

Oral Rehydration Therapy (ORT) is the management of diarrheal disease through the administration of plenty of fluids, in an effort to maintain or replenish proper levels of hydration in the body (WHO, 2000). In 2002 during policy project, Nigeria has made so much effort to trim down its childhood mortality rate, by introducing and implementing various strategies that increase child survival and development. In her 5 year plan (1991-95), the National Control of Diarrheal Diseases Program (NCDDP) of Nigeria had as her target the provision of correct case management to 40% of children seen at health care facilities, correct home treatment to 60% of children with diarrhea, and 80% access to ORT (UNICEF, 2006).ORS are necessary once dehydration occurs because most fluids available in the home are unable to correct the water and salt imbalance that follows dehydration. Although most children with dehydration drink readily, some refuse rehydration solutions because they dislike the taste, feel nauseated, or have profuse vomiting (Elizabeth, 2007). ORS can reverse mild to moderate dehydration within 4-6 hours. At the health facility, intravenous therapy may be necessary when

severe dehydration occurs (Elizabeth *et al.*, 2007). From 1980 to 1999, use of ORS caused decline in under-five mortality from 4.6 million to 1.5 million deaths globally (Victova, 2000). It is estimated that in the1990s, more than 1 million deaths related to diarrhea may have been prevented each year (WHO/UNICEF, 2004).

Twenty-four years ago, oral rehydration therapy was first proven to be effective in the outpatient management of patients with severe dehydrating diarrhea caused by cholera. The development of this simple therapy for the treatment of diarrhea, one of the most common illnesses of mankind, was heralded as one of the great medical achievements of the 20th century. Oral Rehydration Therapy has now become the mainstay of the World Health Organization's efforts to decrease diarrhea morbidity and mortality, and Diarrheal Disease Control Programs have been established in more than 100 countries worldwide (Olakunle et al., 2012). Oral rehydration therapy adopted by the UNICEF and WHO in the late 1970s have been successful in helping manage diarrhea among children. It is estimated that in 1990s, more than one million deaths related to diarrhea may have been prevented each year, largely attributed to the promotion and use of these therapy. Today, however, there are indications that in some countries knowledge and use of appropriate home therapies to successfully manage diarrhea including ORT may be declining (WHO/UNICEF, 2004).

In Kano, like other parts of the world epidemics do occur. For diagnoses, it was the Epidemiology Unit of Kano State's Ministry of Health that first noticed increased cases of diarrhea and vomiting and those started on 15th September, 2013 from Wudil Local Government. Laboratory confirmation of Cholera was made on 7th November, 2013 at the Infectious Diseases Hospital from a case residing at KofarRuwa in Dala Local Government Area (LGA). However, 2,756 cases of cholera came to be diagnosed in 24 LGAs from 7th October, 2013 to 19th January, 2014. The 8 Metropolitan LGAs were reportedly the most affected, contributing 59.94% of the total cases. 84 deaths were recorded since the onset of the epidemic with case fatality rate of 2.94%. As at 19th January 2014, 14 LGAs are actively reporting cholera cases in Kano State whilst from 1st January, 2014 to 19th January, 2014, 583 cases were reported from 18 LGAs of the state **(**Federal Information Centre, Kano, 2014)**.**

In industrialized countries, relatively few patients die from diarrhea, but it continues to be an important cause of morbidity that is associated with substantial health-care costs. However, the morbidity from diarrheal diseases has remained relatively constant during the past two decades. According to figures recently released by UNICEF, 2013, about 194, 000 children under five die annually as a result of diarrhea in Nigeria. It is in line with these that this study is conducted to evaluate and compare the practices of care-givers regarding home management of diarrheal diseases among under-five children between two communities with different demographic characteristics in Kano State. Findings from the study will provide a background to which knowledge, perception and practice can be built upon to strengthen and promote appropriate home management of diarrhea.

II. RESEARCH METHODOLOGY

Study Design and setting

A descriptive cross sectional survey design was used for the study. The study was conducted in Dorayi quarters, Gwale Local Government Area and Nasarawa G. R. A. Nasarawa Local Government all in Kano State, Northern Nigeria. Dorayi quarters and Nasarawa G. R. A. are located within central city of Kano, between latitude 11.58° N of the equator and longitude 8.30° E of prime meridian (NIPOST, 2009).The Dorayi quarters has estimated population of 90644 with approximately 4516 houses (densely populated) and most of the residents are either illiterate or semi-literate with poor socio-economic status. While Nasarawa G. R. A. has estimated population of population of 59,666 (sparsely populated) with approximately 4072 houses (Nasarawa LGA, 2014) occupied by mostly educated and high socio-economic class residents. The inhabitants are typically Hausa Fulani Muslims engaged mainly in business; civil services and trading (Yahaya, 2006).

Target Population

The study was conducted on caregivers/parents of children between the ages of 0 to 5 years in Dorayi quarters and Nasarawa G. R A.

Sample Size and Sampling technique

The sample size of the study was calculated using fisher formula and thus, the minimum sample size was 345 from each community. The sample size was increased to 360 for greater efficiency. Multi-stage sampling was used to determine the two communities with varied demography in Kano State. Systematic sampling method was later used to select360 households from each community. In each area, the ward head's household was chosen as the starting point. Subsequently every 13th house along each road and path was visited. If at least one child aged five years or younger lived in the selected household and a primary caregiver was available for an interview, this caregiver was invited to participate in the interview. If a primary caregiver was not available, the household would be revisited up to two more times in an attempt to conduct the interview.

In households with more than one caregiver of a child under five years of age, one caregiver is chosen by simple random method. If a household don't have a child aged less than five years, the interview would be conducted in the subsequent 13th household, i.e. the 26th house.

Instrument and Method of Data Collection

A Pretested structured interviewer administered questionnaire was used for the study. It consisted of 4 sections; the first section was dedicated to the socio-demographic parameters while second section covers the comparison of how parents manage diarrhea at home, the third section covers the knowledge and perception of parents on home management of diarrheal diseases while the fourth section covers the parent's knowledge on the causes of diarrhea. Trained nursing students in their clinical years and a community health officer assisted in collection of data from respondents. An explanation of the purpose of the study was made to them and then their consent was obtained to participate in the survey. Confidentiality of information provided was assured.

Method of Data Analysis

Data collected was analyzed using Statistical Package for Social Science SPSS version 16 utilizing descriptive statistics. Data were then presented using simple frequencies, percentages, mean, pie charts and bar charts.

III. RESULT

A total of 700 questionnaires were completed and analyzed using descriptive statistics in tabular forms, Bar charts & pie charts. Findings from the study as indicated in Figure I showed that the Mean age of the respondents is 27.49±1.73. Figure 2 however reveals that in Dorayi quarters, majority (54.1%) of the care givers are housewives, 27.2% are engaged in trading, 8.5% were civil servant and 10.2% were occupied with other activities. While in Nasarawa G.R.A, Figure 3 indicates that majority (42.9%) of the care givers were housewives, 17.3% were occupied with trading, 24.4% were civil servants and 15.6% were occupied with other activities. Table I shows that in Dorayi quarters, most of the 38.0% care givers had secondary education and then follow by Qur'anic education of 29.5%, 14.7% had primary education, only 9.6% had tertiary education and 8.2% had not obtained any education. While Most of the 36.0% care givers had secondary education and then follow by tertiary education of 30.5%, 21.3% had Qur'anic education, 8.6% had primary education and 3.5% had not obtained any education. The mean number of children per household was 2.89±1.32.

Fig. I : Age distributions of the care givers.

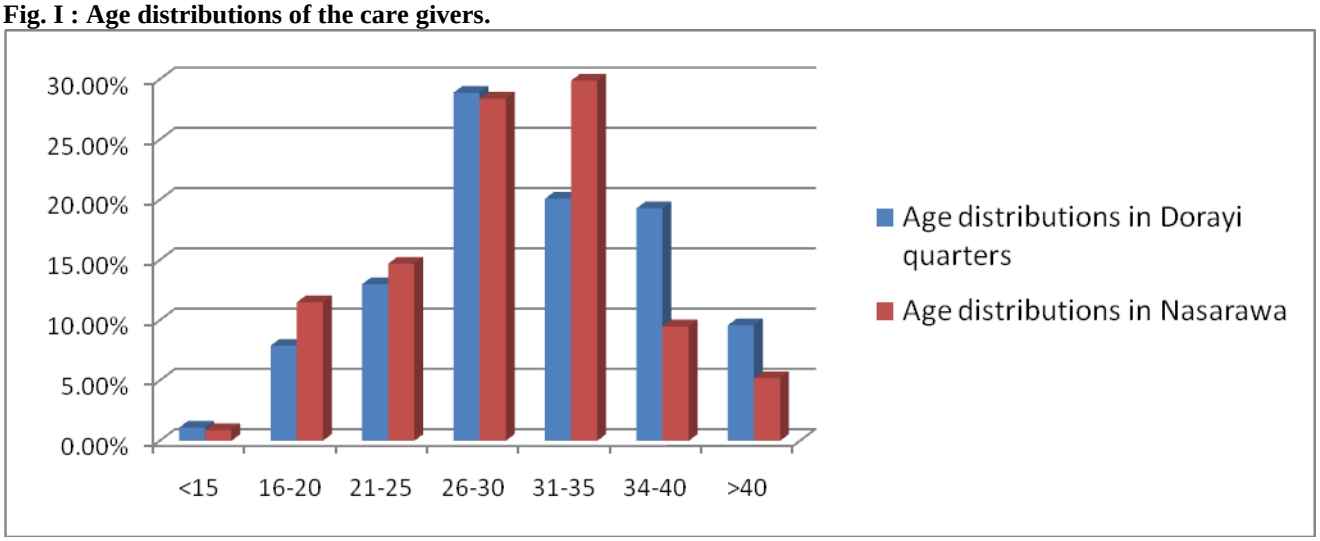
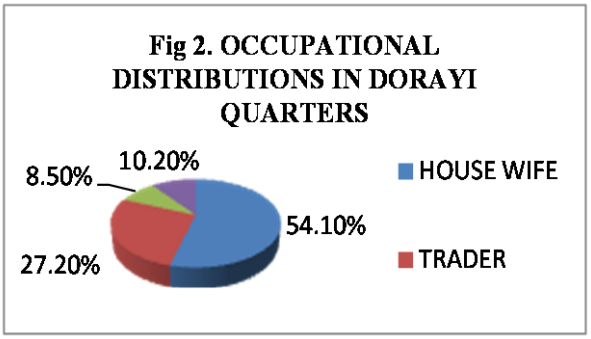
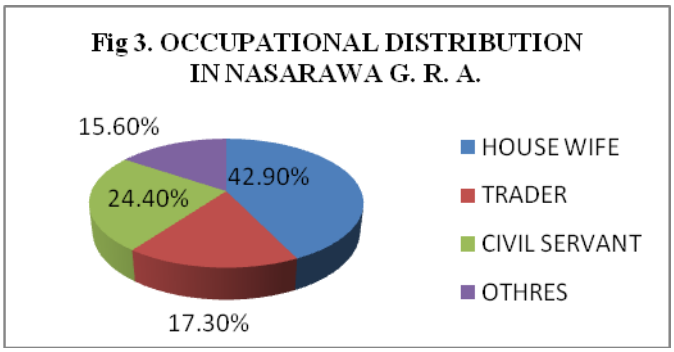


Table I: Distribution of respondents by level of education and number of children

	Dorayi quarters N=353		Nasarawa G. R. A. N=347	
	Frequency	Percent (%)	Frequency	Percent (%)
Educational level				
None	29	8.2	12	3.5
Qur'anic	104	29.5	74	21.3
Primary	52	14.7	30	8.6

Secondary	134	38.0	125	36.0
Tertiary	34	9.6	106	30.5
Number of children				
1	108	30.6	134	38.7
2	142	40.2	148	42.6
3	63	17.8	39	11.2
4	16	4.5	15	4.3
≥5	24	6.8	11	3.2





Of knowledge of care givers, findings as indicated in Table II reveals that majority (75.1%) of the care givers had good knowledge on causes of diarrhea in Dorayi quarters, while in Nasarawa majority (78.7%) had good knowledge on causes of diarrhea. More than half of the respondent had good knowledge on sugar salt solution, 17.5% and 26.5% had fair and poor knowledge respectively in Dorayi quarters, while 33.1% and 8.9% had fair and poor knowledge respectively in Nasarawa G. R. A.in addition, the Table shows that most of the respondents (32.8% and 30.7%) sought care outside home at chemist and hospital or clinic respectively in Dorayi quarters. Most of the respondents (29.9% and 32.5%) sought care outside home at chemist and hospital or clinic respectively in Nasarawa G.R.A

Table II: Distribution of respondents by knowledge of causes of diarrhea, salt and sugar solution and the home management of diarrhea

	Dorayi quarters N=353		**Nasarawa G. R. A. N=347**	
	Frequency	**percent (%)**	**Frequency**	**percent (%)**
Knowledge on causes of Diarrhea				
Good	265	75.1	273	78.7
Poor	88	24.9	74	21.3
Knowledge of salt and sugar solution				
Good	198	56.0	201	58.0
Fair	62	17.5	115	33.1
Poor	93	26.5	31	8.9
Home management of diarrheal disease				
Take him/her to the Heath center	108	30.7	113	32.5
Take him/her to the Chemist	116	32.8	104	29.9
Herbal medicine	54	15.3	46	13.3
Special drinks	73	20.8	80	23.1
Others	2	0.4	4	1.1

Table III shows that majority of the (37.6% and 33.1%) care givers, were given ORS and then follow by SSS (24.0%. 12.5%) in both Dorayi quarters and Nasarawa G. R. A. respectively. Majority of the 32.5% care givers administered SSS/ORS in Dorayi quarters. While 26.6% of the care givers administered SSS/ORS in Nasarawa G. R. A. Majority of the (28.5% and 40.4%) care givers restricted powdered milk to their children during diarrheal disease episode in Dorayi quarters and Nasarawa G. R. A. respectively.

Table III. Distribution of respondents by Types of Fluid Given at Home, feeding pattern and restricted foods

	Dorayi quarters		**Nasarawa G. R. A.**	
	Frequency	**percent (%)**	**Frequency**	**percent (%)**
Type of Fluid				
Water	44	12.5	63	18.1
Sugar salt solution (SSS)	85	24.0	83	24.0
Oral rehydration solution (ORS)	133	37.6	114	33.1
Akamu (corn pap)	64	18.2	73	21.0
Orange juice	11	3.0	7	1.9
Others	16	4.7	7	1.9
Type of Food				
Immediate available fluid	29	8.4	29	8.5
SSS/ORS	115	32.5	92	26.6
Continue breast feeding	83	23.6	83	23.8
Reduce regular diet	38	10.8	16	4.6
Increase regular diet	50	13.9	64	18.8
Increase regular fluid intake	27	7.6	57	16.5
Reduce regular fluid intake	9	2.7	4	1.1
Others	2	0.5	2	0.5
Restricted Food				
Greasy/oily food	39	11.1	79	22.7
Powdered milk	100	28.5	140	40.4
Formula feed	55	15.4	32	9.3
All solid food	91	25.8	57	16.3
All liquid food	60	16.9	35	10.3
Others	8	2.3	4	1.1

IV. DISCUSSION OF FINDING SOCIODEMOGRAPHIC CHARACTERISTICS

This study was conducted among 700 care-givers of children less than 5 years of age i.e. between 353 care-givers in Dorayi quarters Gwale local government, Kano state, and 347 care-givers in Nasarawa G. R. A. Nasarawa local government, Kano state. The age distribution of the care-givers showed that majority of the care givers were between 21-40 years in Dorayi quarters while, in Nasarawa G. R. A. majority of the care givers were between 21-35 years. The mean age of the respondents was 27.49±1.73. The pattern of their distribution is in keeping with the population pyramid of most developing countries with a preponderance of young people compared with few elderly.

Findings from the study further shows that 38%, 29% and 9.6% of the care-givers had secondary, Qur'anic and tertiary education respectively in Dorayi quarters, while 36%, 30.50% and 21.30% of the care-givers in Nasarawa G. R. A. had secondary, tertiary and Qur'anic education respectively. However, Nasarawa G.R.A. care-givers of 30.50% had tertiary education while, in Dorayi quarters had only 9.60% of the care givers attained tertiary education, these findings are most likely to be associated with socioeconomic status of the people living in the two areas. Most of people living in Dorayi quarters had poor socioeconomic status which may likely be the reason why most of them could not continue with high education, unlike those in Nasarawa G.R.A. where most of them have good socioeconomic status which may likely be the reason made them to continue their education up to tertiary level. Most of the care-givers (54.10%) were full time house wives, with few of them either as civil servant or petty traders and (8.50% and 27.2% respectively) in Dorayi. In contrast to this, house wife (42.90%) and civil service (24.40%) were the predominant occupations of the care givers in Nasarawa G. R. A. Only 17.30% of care-givers were traders, however, there's overlapping of occupation among some of them in both two areas. Majority of care-givers had at least two children under the age of five years. The mean number of children per household was 2.89±1.32.

KNOWLEDGE OF CARE-GIVERS ON DIARRHEA

Only about 75.1% and 78.7% of the care givers had good knowledge on causes of diarrhea in Dorayi quarters and Nasarawa G.R.A. respectively. It is shown that causes of diarrhea vary from country to country and within countries. Causes of diarrhea also differ according to perception of people of a community (George et al., 2001). In these studies, the above percentages of the respondent, believe that diarrhea is caused by ingesting contaminated food or drinks and lack of general hygiene. Similar response was realized in two communities;

Kanuri and Bura of Borno which share similar socio-demographic characteristics with the studies areas. Another study carried out in urban areas of Cross Rivers and Akwa-Ibom revealed that diarrhea is mainly caused by ingestion of contaminated food or drinks (Ikpatt and Young, 2001). About one-quarter of the care-givers believed that teeth eruption is the cause of childhood diarrhea. This was not the same in some part of eastern Nigeria and Somalia were teething was considered as a cause of diarrhea by only 2% of care givers (Ikpatt and Young, 2001). Lack of general hygiene was identified by one-sixth as the cause of childhood diarrhea. About one-eighth of the care givers believed that diarrhea has spiritual causes. Similar findings were seen among traditional healers of Borno (George et al., 2001). Perceptions of caregivers to the cause of the diseases play important role in managing a child with the diseases. For example, in Brazil, diarrhea perceived to be to be due to 'evil eye', may be treated ritually; diarrhea due to 'sunken fontanelle' may be treated by physical maneuvers; and diarrhea thought to be due to 'spirit intrusion' by negotiation with the spirit (Weis, 2009). In Cameroon, the traditional treatment was also based on perceived causes (Nkwi, 2009). Although no inquiries were makes on knowledge of biological causes of diarrhea in my studies. Several studies were made on identifying biological causes of diarrhea. In Enugu, private practitioners believed that viral infections were a common cause of childhood diarrhea (Okeke, 2006).Clinically based researches using extensive diagnostic tools, were able to identify causative agents in 60%-80% of cases (King et al., 2003)with viral agents constituted about 70% of the causative organism (Elizabeth, 2007).

HOME MANAGEMENT OF DIARRHEA

The correct care of diarrheal disease begins at home (King, 2003). Optimal strategy for the home management of diarrhea in children includes correct fluid therapy, correct feeding therapy, and appropriate use of antibiotics. If these interventions would be applied universally 57% of mortality among children under five year would be prevented (Jones, 2006).

Of the 353 care-givers in Dorayi interviewed, almost half (56%) had good knowledge on SSS preparations. As well as Nasarawa 347 care-givers interviewed, 57.96% had knowledge on SSS preparations. Almost the two areas share same percentage. This may be related to health education given by NGOs through media, posters in the hospitals/clinics during antenatal, immunization visit. Not surprisingly, 83.40% of Yala community had good knowledge on SSS. This might be related to intensive campaign on diarrheal diseases and its management in Yala Local Government by UNICEF and other related bodies (Okoro, 2000). However the result is comparable with 21% of care-givers with good knowledge on SSS in a peri-urban community in Dominica Republic (McLennan, 2002). Most (24.0% in both) of the care-givers used SSS, while ORS and locally made corn pap (akamu) was used by (37.6% and 18.2%) and (33.1% and 21.0%) of the care-givers in Dorayi quarters and Nasarawa G. R. A. respectively.

Appropriate feeding is an essential component in management of child with diarrhea. The importance of breastfeeding during diarrhea has been amply highlighted (Okeke, 2006). In this study, continued breastfeeding was practiced by 23.6% and 23.8 of the care-givers in Dorayi quarters and Nasarawa G.R.A. respectively. For children on normal family diet, regular solid food and fluid intake was increased by (13.9%and18.4%) and (7.6% and 16.5%) of the care-givers respectively. Continuous breastfeeding was practiced by all mothers (100%) while continued feeding with solid food and increased fluid was given in 81.00% and 61.30% respectively, in Yala community (Okoro, 2000).

Other aspects of community management of childhood diarrheal disease, of particular concern are dietary restrictions, use of antibiotics and recognition of danger signs that necessitate seeking professional assistance outside home **(**McLennan, 2002).About (11.1% and 22.7%) and (28.5% and40.3%) of the studied care-givers, each restricted fatty/oily food and powdered milk respectively. Meanwhile about 15.4% and 9.3% of them restricted formula feed to their children.

There are also concerns about various remedies employed to treat diarrheal episodes. About a third (30.7% and 32.5%) of care-givers used drugs from pharmacy, 15.3% and 13.3% used herbal medicine, 20.8% and 23.1% used specially prepared food or drink, and 0.40% and 1.1% used other methods while 0.6% and 2.8% used nothing to treat diarrhea at home in Dorayi quarters and Nasarawa G.R.A. respectively. The popularity of antibiotics despite health promotion efforts to discourage their use except for specific conditions, such as shigella or cholera associated dysentery, is also of particular concern.

Another area of concern is the actions taken by care givers at home for a diarrheal episode. About one third (30.7% and 32.%) of the care-givers sought care from health professionals i.e. by visiting the nearest health center, (32.8% and29.5%) from chemist/pharmacy this might be related to availability of the heath center, because the study areas where located within the city, (15.3% and 13.3%) were given herbal medicine as the treatment of the diarrhea, (20.8% and 23.1%) of respondent uses special drinks that got from either from Imam or Pastor in form of holy water in both Dorayi quarters and Nasarawa G.R.A. respectively. Similarly a study in Mexico found that seeking treatment was not related to signs of dehydration, but in response to other characteristics such as duration of diarrhea.

V. CONCLUSION AND RECOMMENDATIONS

From the results of this study, it is obvious majority of the parent had correct knowledge of management of diarrhea at home, and also the result shows that care givers of the study areas almost has equal knowledge and perception of causes and management of diarrheal diseases at home, despite reasonable demographic differences between the study areas on settlement, socio economic status, population and many more. There was high use rate of Oral Rehydration Salt (ORS) and locally made fluids in both study areas, however, the knowledge of Salt-Sugar Solution (SSS) preparation was satisfactory while its utilizations was not satisfactory, this may be associated with the availability of ORS and heath care centers. Continued breastfeeding and increased fluid intake during diarrhea was practiced by many care-givers, associated with high rates of dietary restriction during diarrhea and satisfactory attention given to clinical indicators as reasons for seeking professional treatment. However there was reported low use of both antibiotics and traditional medicine.

Based on the findings of this study, the following recommendations were made:

I. There's need for Health education particularly on preventive aspect of childhood diarrhea.
II. Emphasis should also be laid on improving early recognition, appropriate home care of childhood diarrhea and prompt reporting to health center targeted toward mothers as well as their spouses.
III. Mothers need to be educated on limited role of antibiotics in most cases of diarrhea.
IV. There's need to teach mothers on how to prepare SSS properly either at health centers as a group or individual and emphasis should be laid on its utilizations.
V. Mothers should be encouraged to continue breastfeeding during diarrhea and to decrease the rate of dietary restrictions.
VI. There is need to enhance the status of women especially in terms of equal access to education, training and economic empowerment to enabled them make prompt and appropriate actions on their child health problems, through appropriate uses of MDGs.

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