



RESEARCH ARTICLE

THE SOCIO-DEMOGRAPHIC DETERMINANTS OF HEALTH CARE SEEKING BEHAVIOUR BY CARERS OF CHILDREN WITH DIARRHOEA IN RURAL COMMUNITIES IN ENUGU STATE, NIGERIA

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ABSTRACT

**Background:** Diarrhoeal illness is a global leading cause of death in children under five years old worldwide but especially in developing countries. In Nigeria, it is the major cause of childhood mortality after malaria. Published extant literature reveals that the severest impact of diarrhoea is concentrated in rural areas where sanitation and hygiene practices are historically poor. Death due to diarrhoeal illness entirely preventable via timely health seeking behaviour and practices.

**Aim:** This study aimed to examine the effect of socio-demographic factors on the health seeking behaviours of carers for children with diarrhoeal illness in rural communities in Nkanu West LGA of Enugu state, Nigeria.

**Methods:** A cross sectional survey of caregivers in rural communities was undertaken in Nkanu West LGA of those caring for children aged under five years old that have had diarrhoea in the last three months. Data on their health seeking behaviour and socio-demographic characteristics were collected using a semi-structured self-administered questionnaire. Statistical Package for Social Sciences was used to analyse the data using Chi-Square to determine inferential statistics on the established relationship between socio-demographic characteristics and health seeking behaviour.

**Results:** Of the 140 caregivers interviewed, most were aged between 26-30 years (42.1%), traders (30.0%), had at least secondary education (35.0%). The majority of their children were aged between 0-12 years (40.7%) and male (52.1%). 74.3% sought medical care beyond the context of their home during episodic diarrhoea and the majority reported first visiting primary health centres (36.2%). Alternative medical institutions that people accessed were hospitals (14.3%), Traditional Birth Attendants (23.8%), chemists (16.2%), and traditional healer (9.5%). The major reason for the choice of institution visited was accessibility (37.1%). However, not seeking care outside the home was due to perceived severity [not serious (45.7%)]. Oral rehydration solution use was high (86.4%). Factors associated with the medical care context visited were education ( $p=0.010$ ), occupation ( $p=0.002$ ), affordability ( $p=0.005$ ), accessibility ( $p=0.002$ ), significant others ( $p=0.005$ ).

**Conclusion:** Results of this study reveal a significant level of appropriate health seeking behaviour amongst the caregivers in the geographical area. Instead, social, economic and demographic factors were found to be the major determinants of health seeking behaviours. These findings suggest a potential need to improve awareness of the necessity of appropriate health seeking behaviours as well as increasing access to affordable health care in the context of rural Nigerian communities.

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INTRODUCTION

Diarrhoea is the second leading cause of mortality in children under five years worldwide (WHO, 2013). Every year, an estimated 2.5 billion cases of diarrhoea are reported in children under five years of age and these result in death and a huge economic burden worldwide. Walker *et al.* (2013) highlighted that 1.7 billion cases of diarrhoeal disease were reported with 2% progressing to a more severe cases. Of the 7.6 million deaths reported in children of less than five years in 2010, 10.5% were caused by diarrhoea (Liu *et al.*, 2012). Liu *et al.* (2012) highlighted that diarrhoeal mortality has reduced from

1.160 to 0.801 million, representing a 4% decrease per year during 2000 to 2010 in children aged under five years. Despite the decline recorded worldwide probably due to implementation of various child survival interventions, the situation in Africa remains an area of global concern. The average child in developing countries experiences three or more episodes of diarrhoeal disease each year, accounting for up to 4 billion cases annually (Black *et al.*, 2010). Incidence of diarrhoea in children varies substantially among different regions with the highest rate found in low-income countries such as Nigeria than high-income countries (ibid., 2010). UNICEF (2009) reported that approximately 1.5 million deaths in children under five years occur each year because of diarrhoea; with 80% of these deaths occurring in Africa. Highest mortality rates occur in Sub-Saharan Africa where 50% of total child mortality is caused by diarrhoea (Walker *et*

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*al.*, 2013). Owing to the evident impact of diarrhoeal illness in developing countries such as Nigeria, the Millennium Development Goals highlighted diarrhoea as a key public health challenge in developing countries, and organisations such as UNICEF and WHO have both implemented strategic interventions to combat the effect of diarrhoea (UNICEF, 2012). The Nigerian Ministry of Health has also adopted an array of procedures and policies to address the burden of diarrhoeal illness in children aged under five, which included the use of recommended zinc supplementation and oral rehydration therapy (Nigeria Zinc Study Team, 2008). Despite these interventions, Nigeria's National Demographic and Health Survey (National Population Commission, 2015) showed that despite increasing knowledge of the use of interventions such as oral rehydration therapy and zinc supplementation; health seeking behaviours of caregivers still remain poor, especially amongst caregivers in rural community settings. It also revealed that despite increased knowledge amongst rural dwellers in the South Eastern region of Nigeria; with Enugu recording 86% awareness, health-seeking behaviour remained minimal (*ibid.*, 2015).

### Aims of the Study

Whilst research has been undertaken to examine factors influencing health seeking behaviour in the treatment of childhood illness (Ezeoke *et al.*, 2010) few have examined the factors relating specifically to diarrhoeal illness. There are thus a very limited number of studies that have examined the socio-demographic factors affecting access to healthcare for childhood diarrhoea in the rural communities of Enugu state. Those which are available, engaged participants from urban areas and were conducted within tertiary healthcare facilities in urban cities (*ibid.*, 2010; Tagbo *et al.*, 2010). The aim of this study was to investigate the role of demographic and socio-economic characteristics in determining the health seeking behaviours of those caring for children with diarrhoea; illness in rural communities in the Enugu state of Nigeria. The objectives of the study were to:

1. Establish characteristic patterns of health seeking behaviour for children with diarrhoeal illness in rural communities of Nkanu West LGA of Enugu state, Nigeria
2. Investigate any relationship between evident social and demographic factors and the health seeking behaviour of caregivers for children with diarrhoeal illness.

### Testable Hypotheses for the Study

**Null Hypothesis (H<sub>0</sub>):** There is no association between Socio-demographic factors and Health Seeking Behaviour of Caregivers for children with diarrhoeal illness aged under five years.

**Alternative Hypothesis (H<sub>1</sub>):** There is association between Socio-demographic factors and Health Seeking Behaviour of Caregivers for children with diarrhoeal illness aged under five years.

### Epidemiology of Diarrhoeal Illness

Diarrhoea is one of the leading causes of preventable death in children under five globally, especially in developing countries (WHO, 2013). Owing to the vulnerability of children under

five years, diarrhoea grossly compromise their wellbeing and considerably creating a huge demand for health care services for the management (*ibid.*, 2013). In 2011 alone diarrhoea caused about 700, 000 deaths in children under five years of age (Bhutta *et al.*, 2013). Diarrhoea still represents the second leading cause of preventable deaths in children after pneumonia (Fischer-Walker *et al.*, 2013; UNICEF, 2012). Despite advancement in disease management, the prevalence has remained high, especially in developing countries (Liu *et al.*, 2012). According to a report by UNICEF (2009), implementation of ORS, improved health care utilization and breastfeeding practices have led to significant decline in the mortality from 4.5 million in 1980s to 1.3 million in 2008. Despite this decline, studies still suggest that diarrhoea remains a huge burden in developing countries (Black *et al.*, 2010; Walker *et al.*, 2012). In 2011, diarrhoea accounted for 9.9% of the overall 6.9 million deaths among children under five (Fischer-Walker *et al.*, 2013). According the WHO (2013), there are 1.7 million incidences of diarrhoea every year.

### Regional Distribution of Childhood Diarrhoeal Illness

The burden of diarrhoea in children under five varies according to regions. Whilst it remains one of the major causes of mortality in children under five in America and Europe (Guarino *et al.*, 2014), Africa still has the highest prevalence of diarrhoea in children (Black *et al.*, 2010). Diarrhoea remains a significant cause of morbidity and mortality in children under five years in sub-Saharan Africa (Aremu *et al.*, 2011). In 2012, sub-Saharan Africa and south Asia represents 82% of the global mortality in children under five, with diarrhoea accounting for 9% of the death (UNICEF, 2012). A systematic analysis conducted by Liu *et al.* (2015) in 2013 reveals that half of 578, 000 deaths from diarrhoea occurred in sub-Saharan Africa.

### Variation in Epidemiology in a Global Context

Prevalence and mortality rates of diarrhoea in children under five years of age have shown variation across several countries (Bhutta *et al.*, 2013). According to report from UNICEF on childhood mortality, about half of the deaths occurring in children under five years globally are concentrated in developing countries like Nigeria, India, Congo, China and Pakistan (UNICEF, 2012). This suggests that diarrhoea remains a major public health challenge in developing countries like Nigeria. Evidence from a report published by WHO on country ranking mortality from diarrhoea in children under five suggests that there are 66.96 per 100, 000 adjusted deaths (WHO, 2014). A historical study conducted by Iyun and Oke (2000) in Nigeria estimated that about 25% of children in Nigeria die of diarrhoea before they celebrate their fifth birthday. Diarrhoea incidence varies with age; with highest incidence occurring during the first two years of life (Boschi-Pinto, Velebit and Shibuya, 2008). This reported vulnerability of children to diarrhoea is associated with biological predisposition (Khanal, Bhandari and Karkee, 2015). During the second half on an infant's life, the immunity is often weaker and diarrhoeal illness appears to have a higher incidence and prevalence rate at this age. This explains why some socio-demographic factors such as age of the child, hygienic practices, worm infestation, contamination of weaning food, sanitary facilities and consumption of foods from street vendors play a significant role in the occurrence of diarrhoeal illness in children in developing countries such as

Nigeria (Cronin *et al.*, 2016; Aziz *et al.*, 2016). Evidently, according to WHO's (2013) report, globally, 780 million individuals lack access to improved drinking-water and 2.5 billion lack improved sanitation. These factors appear to be why diarrhoeal illness appears to be more concentrated in developing countries. Whilst social and environmental factors have been attributed as predisposing risk factors in the development of diarrhoeal illness in children, research carried out in Nigeria to measure the effect of rotavirus in diarrhoea in children showed that rotavirus remains the commonest cause of severe diarrhoeal dehydration in children in Nigeria (Odimayo *et al.*, 2008; Iyoha and Abiodun, 2015). This is estimated to cause approximately 111 million episodes of diarrhoeal illness, 2 million hospitalisations and 400000 deaths in children under five years, annually, with 82% of the death occurring in developing countries (*ibid.*, 2015). However, in sub-Saharan African countries such as Nigeria, it has shown that factors such as child nutrition, dry season, age under 2, bottle feeding, low birth weight, male gender, maternal smoking, maternal age less than 20 and Human Immunodeficiency Virus (HIV) are associated with incidence of rotavirus disease in children under five (Odimayo *et al.*, 2008). The incidence of diarrhoea varies with the changing of the seasons in Nigeria (Boschi-pinto, Velebit and Shibuya, 2008; Gyoh, 2011).

Dehydration and malnutrition due to loss of fluid and nutrients are the major causes of death in diarrhoeal illness (UNICEF, 2012). It is estimated that 88% of diarrhoea-associated deaths are directly attributable to unsafe water, inadequate sanitation, and hygiene measures (Cronin *et al.*, 2016). Most recently, rotavirus has played an important role in the aetiology of acute diarrhoea; it causes about 40% of diarrhoea in children under five especially in developing countries such as Nigeria (Tate *et al.*, 2012; Liu *et al.*, 2012). Evidence from research across developing countries demonstrates that poor sanitation practices, lack of access to clean water, poor hand washing hygiene and lack of proper feeding practices remain significant causes of diarrhoea in children (WHO, 2013). Several studies have identified specific biological factors associated with the prevalence and incidence of diarrhoeal illness in children across the globe (Karambu *et al.*, 2013). Some bacteria such as Enterotoxigenic *E. coli*, Salmonella Paratyphi, Shigella species and virus appear to be the most common infective agents; however, other environmental factors have been associated with the burden of diarrhoeal illness in children (Brown *et al.*, 2015). Factors associated with the incidence of diarrhoea vary across regions and countries. In sub-Saharan African countries like Nigeria, lack of access to clean water and effective sanitation remain a huge burden (Oloruntoba, Folarin and Ayede, 2014). According to WHO report in 2010, about 884 million people lack access to clean water, whereas 2.6 million people do not have access to effective sanitation facilities (WHO, 2010). Consequently, about 25% of people in developing countries defecate in open spaces and consequently this waste has the potential of being washed into major streams used as drinking water resources (UNICEF, 2012; Segecha, 2013). Since children have developing immunity, which is still weak, they remain most vulnerable to diarrhoeal illnesses (Schilling, 2010). However, research by Finkbeiner *et al.* (2008) observed that about 40% of the cause of diarrhoea are of an unknown aetiology. Nigeria, in common with other developing countries in sub-Saharan Africa and Asia lacks access to safe water and proper sanitation in the majority of rural communities (Oloruntoba, Folarin and Ayede, 2014). The

majority of people in rural communities do not have access to appropriate sanitation facilities; hence, people defecate in open spaces which are effectively act as discharges of infectious disease to environments where children are most at risk of contracting infectious gastrointestinal disease.

Similarly, other factors such as fly infestation and the consumption of street foods have contributed to the increased incidence of diarrhoea in children (Oadi and Kuitunen, 2005). In addition to this, evidence reveals poor infant feeding practices contribute directly to the incidence of diarrhoea in children (UNICEF, 2012). Research has shown that lack of exclusive breastfeeding for up to 6 months, as well as introduction of complementary feeding at an early stage, increases the risk of development of diarrhoeal illness in children across Africa (Mohammed and Tamiru, 2014).

### **The Theoretical Underpinnings of Health Seeking Behaviour**

Different models and theories have been proposed to explain health seeking behaviour / healthcare utilisation in individuals. They predict various factors that influence health seeking behaviour in individuals. However, specific theories can be used to explain the relationship between health seeking behaviour and social, economic and demographic factors. Health belief model (HBM) (Rosenstock *et al.*, 1988) highlighted that individual's ability to seek care can be influenced by their perceived vulnerability and susceptibility to illness and health consequences. To support this view, evidence from studies also suggest that caregivers are more likely to adopt an appropriate health seeking behaviour when they perceived the illness to be severe and threatens the life of their children (Lamberti *et al.*, 2015). Bourdieu (1986), argued that the social capital (social and cultural network) affiliated to individuals play significant role in contributing to their ability to manage health and utilize health services. In his idea, social capital can include the family, relatives and community. This proposition is in congruent with the Graham and White (2016) commentaries on the wider determinants of health which included social environment as one of the major influencers of health and health care utilization. Moreover, study found that caregiver's choice for health seeking outside home can be influenced by significant others (Gera *et al.*, 2015). Enabling factors are logistics necessary for healthcare utilization. These factors must be available even in the presence of predisposing factors. They are necessary to purchase healthcare services. They include income, presence of health facility in the community, accessibility to health facility, presence of health insurance. Finally, need factors according to Andersen and Newman (2005) are perceived need for health care which include perceived severity, vulnerability, susceptibility and past experience. Caregivers need for health seeking outside home may be influenced by these factors.

This study adopted a positivist approach to enquiry which assumed that the existence of an observable reality could be uncovered via statistical analysis of collated information from tangible variables (Bruce *et al.*, 2007). As the study sought to investigate the numerical relationship between caregiver utilization of healthcare services for children with diarrhoea and socio-demographic factors, quantitative methodology was deemed appropriate. However, the design adopted used aggregate data which could only provide information of the sample chosen and not on the basis of the individual. This may

suggest that any association found from the aggregate data may not necessarily mean the same on an individual level (Spicker, 2008). This design, therefore, could show correlation but not causality, hence the need to apply a qualitative approach in the context of individual attribution of its findings. This study involved a quantitative research approach using cross sectional survey design to systematically collect of information from purposively recruited participants with the aim of predicting a phenomenon in a population of interest (Rovai, Baker and Ponton, 2013). Survey design deals with the recruitment of sample that is representative of the population of interest in order to understand a phenomenon within the population (Levy and Lemeshow, 2013). Additionally, it uses statistics to measure outcomes of phenomenon that can be generalized within the population of interest (Rovai, Baker and Ponton, 2013). Another characteristic of cross-sectional survey design is its ability to estimate a degree of certainty from a sample that can be inferred to the entire population of interest (Salazar, Crosby and DiClemente, 2015). To achieve this, I adopted random sampling of intended communities from the entire population, thus, giving every community from chance of being selected (Levy and Lemeshow, 2013). Usually, to ensure a very reliable sampling, some defined techniques are adopted such as the use of computer. However, this study adopted a manual random sampling (this is discussed in details in the sampling section).

### Study Setting

This study was conducted in Nkanu West Local Government Area of Enugu state, Nigeria. Enugu state at the eastern part of Nigeria, West Africa. Nkanu west on itself is located within the eastern part of Enugu state under Enugu East senatorial district. According to 2006 census, it has a population of 147,385 (F=74679, M=72,706) (National Population Commission, NPC, 2006). It is constituted of nine communities/villages with 18 political wards. The local government secretariat/headquarters is at Agbani. The predominant ethnicity is Igbo with majorly Christians and few traditional religious practices. Also, the predominant language is Igbo and rarely English. Basic amenities such as roads market, schools are available; however, health facilities are majorly primary health care centres, traditional birth attendants (TBAs) which provide mainly preventive and promotive health services.

### Target Population

The study population for this study was made up of caregivers of children under five years of age in the Nkanu West Local Government area of Enugu state Nigeria. Research was conducted between June and July 2016.

### Inclusion

This study included participants who were primary caregivers of children under five years of age who have had diarrhoeal illness in the last three months. The participants were residents of the Nkanu West local government area of Enugu state for at least five years. Participants must have visited the primary health centres for any healthcare reasons.

### Sampling

A multi-stage sampling technique was used to select communities, wards, health facilities (PHC), and participants for this study. This sampling method was used because of its

ability to provide equal opportunity for each community/village, health facility and except for participant, to be selected (Bryman, 2016). The procedures are as follows;

**Step 1 (Selection of Communities):** six communities were randomly selected by simple random sampling using lottery method. First, each community was written in separate paper and folded into a container. The container was shaken vigorously and a research assistant was asked to pick the communities randomly until the desired number of ward was reached

**Step 2 (Selection of Wards and Primary Healthcare Centres):** Some of the six selected communities had more than one PHC which are allocated according to the political ward. Political wards are electoral subdivisions created for people who share more similar demographic features. Each ward had a political leader known as the councillor. Therefore, this study adopted to use political wards to select PHC instead of communities. This is to give every PHC in each ward an opportunity to be selected. Moreover, this approach coincides with the Ward Health System policy in Nigeria. To select the wards, simple random sampling using lottery method as applied in stage one was adopted. Number was assigned to each 13 political wards. Any community that has more than 1 ward but only 1 PHC is classified as 1 ward and vice versa. The selected communities were made up of 13 wards. 6 PHCs were selected by simple random sampling using lottery method (as in stage one).

**Step 3 (selection of respondents):** 150 respondents (25 from each PHC) were sampled by purposive sampling. Purposive sampling was adjudged appropriate because the respondents have already been predetermined. Although it has been argued to lack strong reliability in randomizing respondents; however, the use of purposive sampling in this study was considered appropriate to select the required respondents. Additionally, purposive sampling was used because of easy access to the participants, flexibility, time and high response rate (Uprichard, 2013). Eligible participants were given questionnaires to complete until the required number was reached. An initial sample size calculation was attempted through an online medium to determine the significant size of sample at confidence level (CI) at 95%. However, because sample size is unlikely significant to non-probability sampling, the calculation therefore not used.

### Pilot Study

Pilot study is the collection of data about the study before the main study (Shuttleworth, 2016). This process allows the researcher the opportunity to interview few participants who share similar characteristics with the original participants required for the main study (Leon, Davis and Kraemer, 2011) so as to make amendments based on the response from piloted participants. According to Williams (2014), it is useful to ensure if the participants understand the use of terminologies in the questionnaire as well as a measure of reliability and validity of a questionnaire. The questionnaire was piloted on 6 conveniently selected participants from a different primary health centres who shared similar characteristics with intended participant. Those were mothers of children who have had diarrhoea in the last 3 months. The reason for the piloting was to test the reliability and validity of the questionnaire and restructure the questionnaire to match the background of the

participants in Nkanu West Local Government area of Enugu state. The result of the piloting resulted in few modifications in the question. This new modification therefore included actions of mothers should their children have diarrhoea that lasted longer than 14 days. This was part of behaviour risk assessment that is of great significance to health promotion strategies in the region.

### Data Collection

A structured self-administered questionnaire was used for data collection. Self-administered questionnaire was considered appropriate to allow respondents to complete the questionnaire themselves with minimal influence from the researcher. The validity of the questionnaire was determined through pilot study. 6 caregivers who have children under five years who have had diarrhoea were given the questionnaire to complete. The analysis of the completed questionnaire aligns with the intent of the researcher. This therefore shows that the actual respondents who have the same characteristics as those used for pilot can be able to complete the question. The study chose three months as the maximum period a child will have had diarrhoea for the caregiver to participate in the study. Validity of this indicators influenced by the caregiver's perception of diarrhoea as a disease and her capacity to recall any event of diarrhoea in the child. In addition, this time covered the period when diarrhoea usually occur in children due to variation in the weather (raining season). The researcher acknowledged the challenge of recall bias, however, where need be the researchers used names of market days to elicit the recall of any event of diarrhoea. However, because the predominant language of the respondents was Igbo language, the researcher therefore utilized and trained four student nurses to assist in administering and interpreting the questionnaires where necessary. According to Phellas, Bloch, Seale (2011), interviewer can guide the participant to complete a questionnaire. This is different from interviewer administered questionnaire. However, the use of interpreters and assistants may have offer potential limitations to the study due to the risk of social desirability and bias (Krumpal, 2013). Questions translated may have led to mistranslation and researcher may have filtered answers provided verbally. Despite these potential limitations, the questionnaires provided basic view of the proportion of caregivers who have used different PHC.

The questionnaire consists of 23 questions divided into three sections, A, B, and C Section A comprised of caregiver's bio-demographic data that meant to help the researcher determine any correlation between the caregiver's and healthcare seeking behaviour. Section B comprised of the child's bio-demographic data and information about significant orders such as the father. This information will help to examine any correlation between child-factor such as sex and age on caregiver's health seeking behaviour. Finally, Section C explores caregiver's health seeking behaviour for DIC. The questionnaires were distributed to the respondents and were completed and returned to the researchers on the same day. The returned questionnaires were kept in secured bag.

### Data Analysis

Data analysis is a significant component of quantitative research because it provides insight and meaning to data collected from participants. It comprises of all test tools and processes employed for transforming raw data from respondents to useful information (Treiman, 2014). In this

research, both descriptive and inferential statistical analysis will be done. The analyses were done using the statistical package for social science (SPSS) version 21.

In data analysis, descriptive statistics are generally useful in generating and organising original data from respondents into a meaningful pattern of information. According to Romero and Ventura (2013), descriptive statistics usually calculate the frequency and percentage of each response from respondents. This therefore explains the reason why it is usually the first statistical analysis in a quantitative research as recommended by (Treiman, 2014). Contrary to descriptive statistics, inferential statistics are used to make prediction about the population from a sample randomly selected for the study (Jackson, 2015). According to Pallant (2013), inferential statistics are used to estimate that the relationship observed in a sample is depended or not on observed variables. In this study, descriptive analysis was conducted on the entire 23 questions and responses. As with traditional descriptive statistics, responses will be displayed in frequency tables and graphs.

Furthermore, because inferential statistics are used to estimate relationship between variables in observable in a group, special statistical test packages are specially used for the analysis of responses. Therefore, it is used to test hypothesis. However, the choice of package used depends on type of data to best such as whether ordinal, nominal or categorical (Pallant, 2013). In this study, chi square was used as the preferred inferential data analysis tool. This was used because both the independent and dependent variable are nominal inn nature. This is in congruent with the recommendation of (Healey, 2014) who recommend the use of chi square as ideal when both the independent and dependent variables are nominal data. The level of significance set out in which to either accept or reject the null hypothesis was  $\alpha = 5\% = 0.05$ . This means that a p value less than 0.05 accepts the null hypothesis and vice versa. The results will be presented in tables and graphs.

## RESULTS

For the purpose of this study, the results have been presented in two different forms namely; descriptive and inferential analyses. The descriptive analysis has been used to describe the frequencies and percentages of the results. Additionally, ensure accessibility of the data, it has been presented in frequency tables and graphs. Inferential statistics have been used to address the specific objectives of the research. Chi-square testing was used to analyse the data.

### Response Rate

150 questionnaires were administered to consenting participants who visited primary health centres in the six randomly selected wards in Nkanu west local government area of Enugu state, Nigeria. Of the 150 administered questionnaires, 140 were completed questionnaires were returned:

$$\text{ResponseRate} = \frac{\text{No. of completed survey questionnaires returned}}{\text{No. of survey questionnaires administered}} \times 100\%$$

$$= \frac{140 \times 100\%}{150} = 93.3\%$$

This response rate is similar to 92.8% recorded in a similar study conducted in rural Ghana by Daniels, Ahenkan and Poku (2013) to examine factors affecting maternal health service utilization. Although response rate is not a significant determinant of validity of result in purposive sampling, however, a response rate of 93.3% has been considered as significant rate (Abiodun *et al.*, 2014).

## Descriptive Statistics of Independent Variables

### Participant Gender

Participants in this study represents primary caregivers of children under five years. 100% (140) of the participants were female.

### Caregivers Age

Table 2. Age of caregivers in years

Variable	Frequency (n=140)	Valid percent (%)
20-25	20	14.3
26-30	59	42.1
31-35	32	22.9
35-40	29	20.7
Total	140	100

Of the total participants, 42.1 (59) are within the age range of 26-30 years, 22.9% (32) are within 31-35 years, 20.7% (29) are within 36-40 years, while only 14.3% (20) are within 20-25 years.

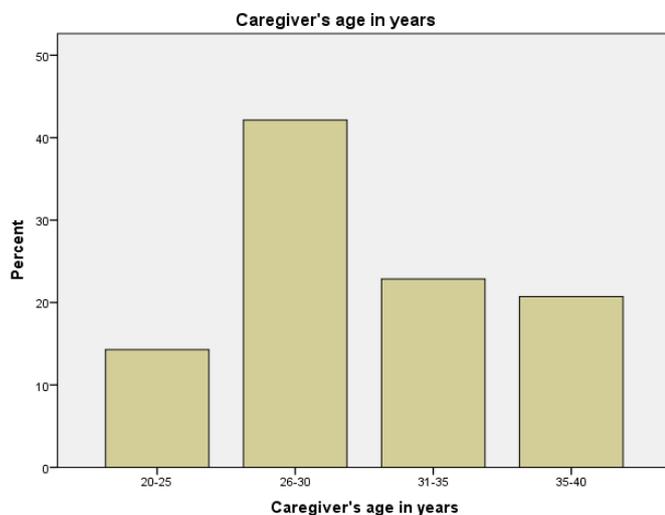


Figure 1. Age of Caregivers in years

### Religion/Faith

100% (140) of the participants reported belonging to the Christian faith.

### Ethnicity

100% of the participants are from the Igbo ethnic group; in the eastern part of Nigeria where the study was conducted.

### Caregiver Occupation

Occupation was used as an indicator for wealth quantile of the participants. Was adopted to describe the occupation.

Table 3. Occupation of Caregivers

Variables	Frequency (n=140)	Valid percentage (%)
Housewife	12	8.6
Farmer	25	17.9
Artisan	11	7.9
Employee	27	19.3
Unemployed	13	9.3
Student	10	7.1
Trader	42	30.0
Total	140	100

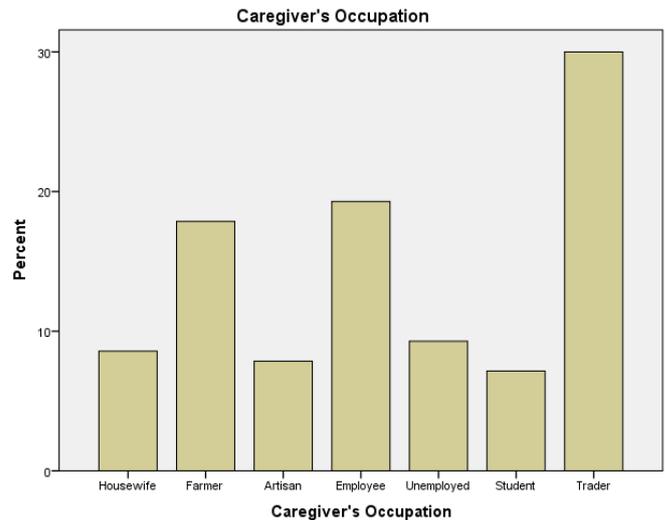


Figure 2.

Those within the socio-economic status of middle class are employees, self-employed traders and artisans. Housewife, farmer, student and unemployed are classified as lower-class. However, the wealth described for each occupation may not be the true representative of the socio-economic status of the participants. 30.0% (42) of the participants are traders, while 19.3% (27) are employees, 17.9% (25) are farmers, 9.3% (13) are unemployed, 8.6% (12) are housewives, 7.9% (11) are artisans and 7.1% (10) are students.

### Caregivers educational status

Table 4. Educational status of Caregivers

Variables	Frequency (n=140)	Valid percent (%)
No formal education	28	20.0
Primary education	42	30.0
Secondary education	49	35.0
Tertiary education	21	15.0
Total	140	100

Out of the participants, only 15% (21) completed tertiary education. 35% (49) participants completed at least secondary educations, whereas 30% (42) completed at least primary education and 20% (28) had no formal education.

Table 5. Age of children under five years who have had diarrhoea in the last three months (in months)

Variables	Frequency (n=140)	Valid percent (%)
0-12	57	40.7
13-24	41	29.3
25-36	23	16.4
37-48	19	13.6
Total	140	100

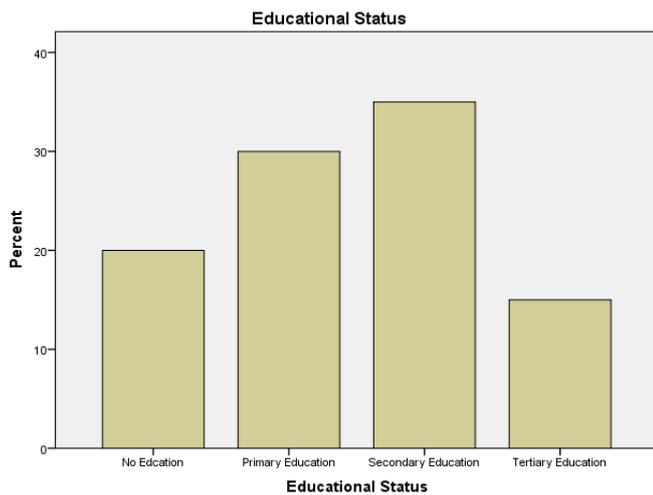


Figure 3. Distribution of Educational status of Caregivers

### Age of Child in Months

Age of the child was used as an independent variable to measure the relationship between the age of the child and caregiver's HSB. 40.7% (57) of the children were under one year (0-12 months), while 29.3% (41) are within two years (13-24 months), 16.4% (23) are under three years (25-36 months) and 13.6% (19) are under five years (37-48 months).

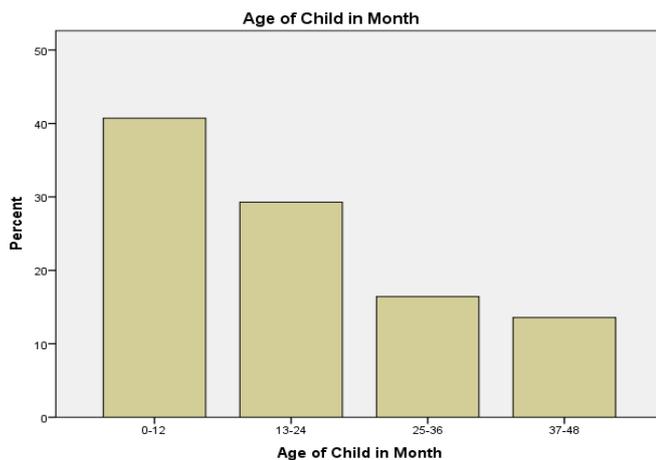


Figure 4. Distribution of age of children under five who have had diarrhoea within the last three months (in months)

### Child Gender

Table 6. Gender of children under five years who have had diarrhoea within the last three months

Variables	Frequency (n=140)	Valid percent (%)
Male	73	52.1
Female	67	47.9
Total	140	100

Gender is an independent variable used to measure the relationship between child's age and caregiver's HSB. 52.1% (73) are males and 47.9% (67) are females.

### Father's Occupation

Caregivers were asked about the father's occupation. 25.7% (36) were Artisan, 24.3% (34) were Traders, 21.4% (30)

employees, 14.3% (20) commercial bus drivers, 9.3% (13) farmers, 5.0% (7) clergy. This dependent variable was used to measure the relationship between father's occupation (wealth) and appropriate health seeking behaviour.

Table 7. Frequency table of the occupation of fathers of children under five years who have had diarrhoea within the last three months

Variables	Frequency (n=140)	Valid percent (%)
Farmer	13	9.3
Artisan	36	25.7
Employee	30	21.4
Commercial bus driver	20	14.3
Clergy	7	5.0
Trader	34	24.3
Total	140	100

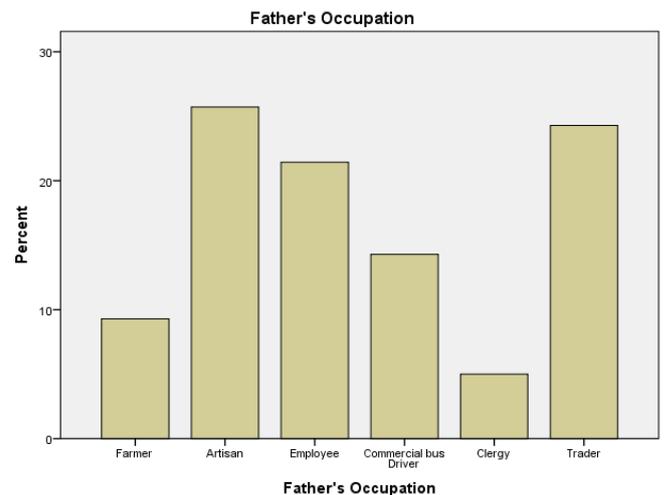


Figure 5. Distribution of occupation of fathers of children under five years who have had diarrhoea within the last three months

### Descriptive Statistics of Dependent Variables

#### Frequency of Diarrhoea

Table 8. Frequency of diarrhoea in children under five years (measured as episodes of loose lasting for 14 days and more)

Variable	Frequency (n=140)	Valid percent (%)
Yes	10	7.1
No	130	92.9
Total	140	100

Frequency was used to examine the severity of diarrhoea. Respondents were asked whether the diarrhoea lasted for 14 days or longer. Out of 140 respondents, only 10 (7.1%) reported the child's diarrhoea lasting up to 14 days.

#### Seeking Health Care Outside of the Home

Table 9. Distribution of Caregivers who sought for care outside home during the episodes of diarrhoea in the children

Variable	Frequency (n=140)	Valid percent (%)
Yes	104	74.3
No	36	25.7
Total	140	100

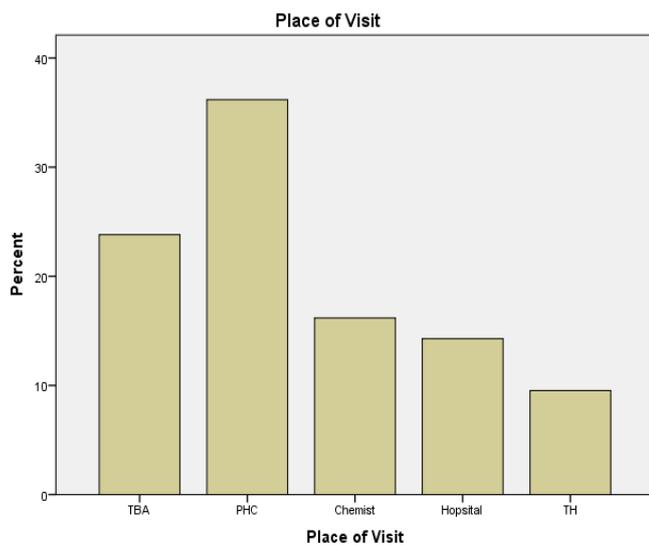
Respondents were asked in the questionnaire if they sought any kind of health services outside of the home. 74.3% (104)

answered yes. Only 25.7% (36) did not seek health services outside of the home.

### Place of Visit

**Table 10. Distribution of first point of call by caregiver during the episode of diarrhoea**

Variables	Frequency (n=140)	Valid percent (%)
Traditional Birth Attendant	25	23.8
Primary Health Centre	37	36.2
Chemist	17	16.2
Hospital	15	14.3
Traditional healer	10	9.5
Total	104	100
Total	140	



**Figure 6. Frequency distribution of first point of call by caregiver during the episode of diarrhoea**

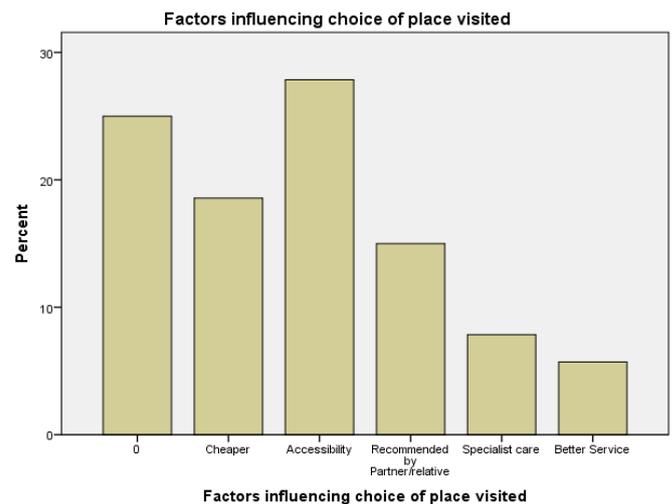
Those who sought health services outside of the home were asked to choose from the list where they visited. 38 (27.1%) reported visiting Primary health centre (PHC), 25 (17.9%) visited traditional birth attendant, 17 (12.1%) visited chemists, 15 (10.7%) visited hospital and 10 (7.1%) sought for help from a traditional healer.

### Factors Influencing Health Choice of Place Visited

**Table 11. Factors that influenced the choice of place of care visited by caregivers**

Variables	Frequency (n=140)	Valid percent (%)
Affordability	26	24.8
Accessibility	38	37.1
Recommended by relatives/ friends	21	20.0
Specialist care	11	10.5
Better service	8	7.6
Total	104	100

Respondents who sought for health care outside home were asked the specific reason for their choice. The majority reported accessibility, 37.1% (39). Other reasons include affordability, 24.8% (26), recommendation from relatives/friends, 20.0% (21), to receive specialist care, 10.5% (11), and for better service, 7.6% (8).



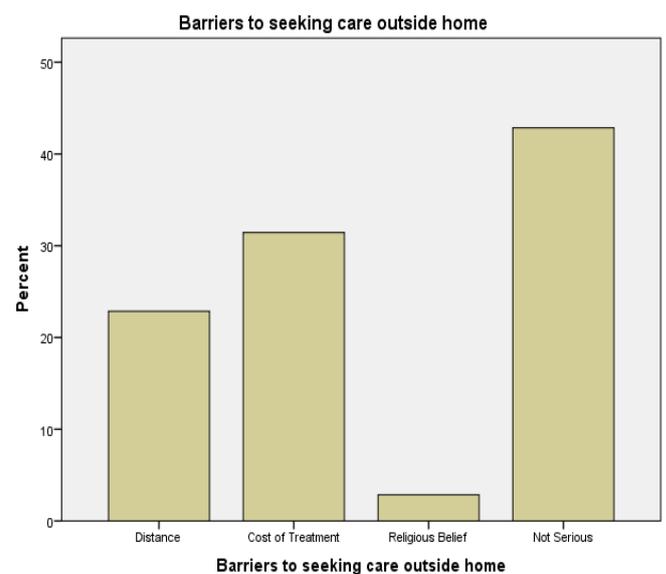
**Figure 7. Distribution of factors that influenced the choice of place of care visited by caregivers**

### Barriers to health seeking outside home

**Table 12. Factors that acted as barriers to caregivers from seeking care outside home during episodes of diarrhoea in children**

Variables	Frequency (n=140)	Valid Percent (%)
Distance	9	22.9
Cost of treatment	11	31.4
Not serious (perceived severity)	16	45.7
Total	36	100

Respondents who did not seek for care outside home were asked their reasons. Barriers reported by respondents include perceived severity (not serious), 45.7% (16), cost of treatment, 31.4% (11) and health care facility being far from home, 22.9% (8). Therefore, this suggests that perceived severity of illness played major role in not seeking care outside home.



**Figure 8. Distribution Factors that acted as barriers to caregivers from seeking care outside home during episodes of diarrhoea in children**

## Use of Oral Rehydration Therapy

**Table 13. Distribution of caregivers who administered ORT during the episodes of diarrhoea in the children**

Variables	Frequency (n=140)	Valid percent (%)
Yes	121	86.4
No	19	13.6
Total	140	100

As part of the recommended regimen for diarrhoea in children, oral rehydration therapy use was included as health seeking behaviour/ health care utilisation. Respondents were therefore asked they gave their children oral rehydration solutions during the episode of diarrhoea. 86.4% (121) answered yes while only 13.6% (19) answered no. Those who answered no were further asked why they did not (table 14). 68.4% (13) answered lack of knowledge of the use whereas 31.6% (6) answered lack of access to oral rehydration solution.

**Table 14. Factors Affecting Non Use of Oral Rehydration Therapy**

Variable	Frequency (n=140)	Valid Percent (%)
Knowledge	13	68.4
Lack of access to recipe/ORS	6	31.6
Total	19	100

## Inferential Statistics of the Relationship between Socio-Demographic Characteristics and Health Seeking Behaviour

Chi square test was used to develop the inferential statistics, which explained the relationship between measured variables such as socio-demographic factors and health seeking behaviour. Null and alternative hypotheses were tested to either accept or reject the null hypothesis. The level of significance adopted for the measurement was a p value of 0.05.

### Hypothesis One: there is no significant relationship between socio-demographic characteristics and caregivers' Health Seeking Behaviour

#### Education versus Health Seeking Outside Home

**Table 15. Result of chi square test on the relationship between caregiver's education and health seeking outside home**

Variables	visit to health care facility		Total
	yes	No	
No formal education	16	12	28
Primary education	23	19	42
Secondary education	46	3	49
Tertiary education	19	2	21
Total	104	36	140

Chi square = 25.417; df = 3; Asymp. Sig. (2-sided) = 0.000, Phi = 0.426  
Significant =  $p < 0.05$  non-significant =  $p > 0.05$

A chi square test showed that a significant relationship exists between education of caregivers and health care seeking outside for children under five years who have diarrhoea ( $p=0.000$ ). However, the result also shows that parent with secondary education are more likely to take their children for health care outside home.

## Education Versus Place Visited

**Table 16. Result of chi square test on the relationship between caregiver's education and place visited**

Variables	TBA	PHC	Chemist	Hospital	Traditional healer	Total
No formal education	6	2	5	0	4	17
Primary	6	5	6	2	4	23
Secondary	9	21	4	10	2	45
Tertiary	4	10	2	3	0	19
Total	25	38	17	15	10	104

Chi square = 26.137; df = 12; Asymptotic Sig. = 0.010, Phi = 0.499  
Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The Chi square test result showed a significant relationship between education and place of visit. This therefore provides evidence to reject the null hypothesis that there is no relationship between caregivers' education and health service utilisation.

## Education versus the Use of Oral Rehydration Therapies

**Table 17. Result of chi square test on the relationship between caregiver's education and use of ORT**

Variables	Yes	No	Total
No formal education	18	10	28
Primary education	36	6	42
Secondary education	48	1	49
Tertiary education	19	2	21
Total	121	19	140

Chi square = 17.570; df = 3; Asymptotic Sig. = 0.001, Phi = 0.354  
Significant =  $p < 0.05$  non-significant =  $p > 0.05$

Chi square test analysis indicated a significant relationship between caregiver's education and ORT use. P value = 0.001. Therefore, this result presented no sufficient evidence to accept the null hypothesis that age does not influence HSB. P value = 0.001. In summary, a statistical significance relationship was observed between caregiver's educational status and seeking care outside home ( $df = 3$ ;  $p < 0.000$ ), choice of place visited ( $df = 12$ ;  $p < 0.010$ ) and use of ORT ( $df = 3$ ;  $P < 0.001$ ). This results therefore provided sufficient evidence to reject the null hypothesis which proposed that that caregiver's education is completely independent of seeking care outside home, place visited and use of ORT.

## Occupation

**Table 18. Result of chi square test on relationship between caregiver's occupation and health seeking outside home**

Variables	Yes	No	Total
Housewife	9	3	12
Farmer	16	9	25
Artisan	8	3	11
Employee	24	3	27
Unemployed	7	6	13
Student	10	0	10
Trader	30	12	42
Total	104	36	140

**Table 19.**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	10.900	6	0.092
Likelihood ratio	13.519	6	0.035
Linear-by-linear association	0.130	1	0.719
N of valid cases	140		

4 cells (28.6%) have expected count less than 5. The minimum expected count is 2.57, Phi = 0.279, Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The Chi square test above showed that no significant relationship between caregiver's occupation and health seeking outside home existed. This suggests sufficient evidence to accept the null hypothesis that caregiver's occupation does not influence health seeking behaviour outside of the home.

**Table 20. Result of Chi Square Test on Association between Caregiver's Occupation and Place of Visit**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	48.958	24	0.002
Likelihood ratio	55.063	24	0.000
Linear-by-linear association	1.351	1	0.245
Phi	0.683		
N of valid cases	104		

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

Evidence from the result of chi square test showed a significant association between caregiver's occupation and health care seeking. This therefore provides a sufficient evidence to reject the null hypothesis ( $p < 0.002$ ).

**Table 21. Result of Chi Square Test on Relationship between Caregiver's Occupation and Appropriate Health Seeking Behaviour**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	25.046	12	0.015
Likelihood ratio	32.417	12	0.001
Linear-by-linear association	0.129	1	0.720
Number of valid cases	78		

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

Although statistical result showed no significant relationship between health seeking outside home and caregivers occupation ( $df = 6$ ;  $p > 0.092$ ), however, appropriate health seeking described as visiting either hospital primary health centre or traditional birth attendants was measured using Chi square test. Results showed a significant relationship between caregiver's occupation and appropriate health seeking. Therefore, this suggests a sufficient evidence to reject the null hypothesis that caregiver's occupation does not influence appropriate health seeking.

### Caregivers Age

**Table 22. Result of Chi Square Test on the Relationship between Caregiver's Age and Health Seeking Behaviour Outside of the Home**

Variables	Yes	No	Total
20-25	17	3	20
26-30	43	16	59
31-35	24	7	32
36-40	19	10	29
Total	104	36	140

Chi-square = 2.677;  $df = 3$ ;  $p > 0.0444$ ;  $\Phi = 0.138$

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The results from Chi Square show no association between caregivers' ages and health seeking outside home. Therefore, this provides sufficient evidence to reject the null hypothesis  $p$  value  $> 0.444$

### Caregivers age versus place visited

Result from chi square shows no association between caregivers age and place of visit. Therefore, this provides

sufficient evidence to accept the null hypothesis which suggests that caregiver's age is totally independent of place of visit.  $p$  value  $> 0.444$

**Table 23. Result of chi square test on relationship between caregiver's age and place visited**

Variables	TBA	PHC	Chemist	Hospital	Traditional healer	Total
20-25	6	3	3	1	4	17
26-30	10	18	7	7	1	23
31-35	7	7	4	6	1	45
36-40	2	10	3	1	4	19
Total	25	38	17	15	10	104

Chi square = 19.054;  $df = 12$ ; asymptotic Sig. = 0.087;  $\Phi = 0.426$

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

### Caregiver's age versus use of ort

**Table 24. Result of Chi Square Test on the Relationship between the Caregiver's Age and Oral Rehydration Therapy Use**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	0.298	3	0.960
Likelihood ratio	0.298	3	0.960
Linear-by-linear association	0.016	1	0.900
Phi	0.046		
Number of valid cases	140		

3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.71.

Significant =  $p < 0.05$ , non-significant =  $p > 0.05$

The chi square test result estimates no statistically significant between the use of ort and caregiver's age. This therefore provides sufficient evidence to accept the null hypothesis which predicted that caregiver's age is independent of the use of ort  $p$  value = 0.960.

### Child Gender

**Table 25. Result of chi square test on relationship between child's gender and health seeking outside home**

	Value	df	Asymptotic significance (2-sided)	Exact significance (2-sided)	Exact significance (1-sided)
Pearson chi-square	0.089	1	0.765		
Continuity correction	0.011	1	0.916		
Likelihood ratio	0.089	1	0.765		
Fisher's exact test				0.847	0.458
Phi	0.025				
Linear-by-linear association	0.089	1	0.766		
Number of valid cases	140				

0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.23.

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The result of the Chi Square test to determine whether there was a statistically significant relationship between child's gender and seeking care outside home yielded a  $p$  value = 0.765. this value indicates no relationship between the two variables. Therefore, this suggests an evidence to accept the null hypothesis that child's gender does not affect care seeking outside home. However, in order to estimate the level of significance between the gender of the child and place visited during the episode of diarrhoea, chi square test indicated no

significant evidence to suggest any positive relationship ( $p$  value = 0.845). This therefore proves the null hypothesis.

**Table 26. Result of chi square test on relationship between child's gender and place visited**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	1.396	4	0.845
Likelihood ratio	1.402	4	0.844
Phi	0.115		
Linear-by-linear association	0.001	1	0.971
Number of valid cases	104		

1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.76.

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

### Child's age

**Table 27. Result of chi square test on relationship between child's age and health care seeking outside home**

Variables	Yes	No	Total
0-12	44	13	57
13-24	30	11	41
25-36	15	8	23
37-48	15	4	19
Total	104	36	140

Chi square = 1.485; df = 3; asymptotic Sig. = 0.686; Phi = 0.103

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The chi square test to measure the level of significance between child's age and care seeking outside home revealed no statistically relationship between the age of child and seeking for health care outside home ( $df = 3$ ;  $p > 0.686$ ). Similarly, no statistically significant relationship was also observed between child's age and place visited ( $df = 12$ ;  $p > 0.514$ ).

**Table 28. Result of chi square test on relationship between child's age and place of visit**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	11.174	12	0.514
Likelihood ratio	13.601	12	0.327
Linear-by-linear association	0.822	1	0.365
Phi	0.326		
Number of valid cases	104		

11 cells (55.0%) have expected count less than 5. The minimum expected count is 1.43

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

In summary, there was no statistically significant relationship between child's age and seeking care outside home ( $df = 3$ ;  $p > 0.686$ ) and place visited during diarrhoea episode ( $df = 12$ ;  $p > 0.514$ ). This finding therefore provides sufficient evidence to accept the null hypothesis, which proposed no relationship between both variables.

### Hypothesis two: affordability (cost of treatment), accessibility (distance from home) and significant others are independent of choice of place visited

The Chi-square analysis shows a relationship between cost of treatment and place visited. Although, this association appeared to be weak (Phi=0.377), however, it suggests that cost is a determinant of HSB.

**Table 29. Result of chi square test on relationship between cost of treatment and place of visit**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	14.900	4	0.005
Likelihood ratio	17.251	4	0.002
Linear-by-linear association	0.144	1	0.704
Phi	0.377		
Number of valid cases	104		

Significant =  $p < 0.05$  non-significant =  $p > 0.05$ .

### Accessibility vs place of visit

**Table 30. Result of chi square test on relationship between accessibility and place of visit**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	16.884	4	0.002
Likelihood ratio	22.449	4	0.000
Linear-by-linear association	13.871	1	0.00
Phi	0.401		
Number of valid cases	104		

1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.71.

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The result above shows a statistically significant relationship between accessibility and choice of place visited. This therefore suggest that accessibility is a determinant of HSB.

### Significant Others versus Place of Visit

**Table 31. Result of chi square test on relationship between significant others (family and friends) and place of visit**

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	14.857	4	0.005
Likelihood ratio	12.765	4	0.012
Phi	0.376		
Linear-by-linear association	11.534	1	0.001
Number of valid cases	104		

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

Summary of Relationship between accessibility, affordability (cost of treatment), and family influence (significant others) and health utilization (place visited)

**Table 32.**

Variables	Chi-square	df	P value
Affordability (cost of treatment)	14.900	4	0.005
Accessibility (distance of health facility from home)	16.884	4	0.002
Family influence (significant others)	14.857	4	0.005

Significant =  $p < 0.05$  non-significant =  $p > 0.05$

The table above shows a statistically significant relationship between place visited and accessibility ( $df = 4$ ;  $p < 0.005$ ), affordability ( $df = 4$ ;  $p < 0.002$ ), and family influence (significant others) ( $df = 4$ ;  $p < 0.005$ ). Therefore, this provided strong evidence to reject the null hypothesis.

## DISCUSSION

Diarrhoea in children has remained the major cause of child mortality worldwide, especially in sub-Saharan African

counties like Nigeria (Aremuet *et al.*, 2011). While factors such as poor sanitation, viral infection, worm infestations and unhygienic infant feeding practices have been majorly linked with the cause of diarrhoea in children; evidence still suggest that these causes are preventable (Oloruntoba, Folarin and Ayede, 2014). Policies and programmes have focused on preventive and promotive activities. However, appropriate health seeking behaviour remains a significant approach to reducing the disease burden of diarrhoea in children under five years of age as well as mortality (Ogunlesi and Olanrewaju, 2010). Evidence from studies have shown that appropriate health seeking reduces the complication of diarrhoea in children (Tagbo *et al.*, 2010). However, reports have shown that health seeking behaviour of caregivers especially in rural communities in developing countries like Nigeria is still poor. Several factors such as social, economic and demographic factors have been documented to affect health seeking behaviour. Therefore, the aim of this study was to examine the health seeking behaviour and socio-demographic factors that influence caregiver's health seeking behaviour for diarrhoea in children in rural communities in Nkanu west LGA of Enugu state, Nigeria. The study employed the use of statistical tools to determine the pattern of socio-demographic characteristics and relationship between them and health seeking behaviour.

### Health seeking behaviour

Unexpectedly, the result of this study showed that majority of caregivers sought for care outside home during the episode of diarrhoea [104 (74.3)]. However, perceived severity was majorly reported as the reason by caregivers who did seek for care outside (36, 25.7%). However, this finding may not be a conclusive evidence on the role of perceived severity and health seeking behaviour. This is because no question was asked to ascertain duration between the notice of symptom of diarrhoea and health seeking and reason for any gap that could have been observed. However, study showed that caregivers are more likely to seek care outside home when they perceive the diarrhoea to be severe and often accompanied by dehydration (Salami and Adesanwo, 2015). Therefore, understanding that how caregivers perceive illness hinders health seeking outside home explains the importance of perceived severity on HSB and thus suggest the need to focus education on timely health seeking. Moreover, majority (37, 36.2%) sought care in primary centre compared to other facilities. This result may have been influenced by the fact that data was collected in PHC; thus introducing bias in reporting health care utilization. However, this result is consistent with findings from other studies (Kahabuka *et al.*, 2011).

### Relationship between Socio-demographic Characteristics and Health Seeking Behaviour

This study found that health seeking is generally high in the area. This is concurrent with other studies that examined HSB for childhood illnesses including diarrhoea in rural communities (Awoke, 2013). This interpretation may not be the actual representation of the HSB of the target population apparently because of the sample size and setting where data was collected. However, knowledge of the pattern of these behaviour within the people interviewed gives insight to the pattern of health seeking behaviour.

**Caregiver's Education:** as discussed in the literature review, education has a strong association with health seeking and

health care utilization. This study found that education has a strong relationship with health seeking for diarrhoea in children in Nkanu west LGA. This finding is consistent with other studies (Kantéet *et al.*, 2015). The reason for this relationship maybe explained by propositions that women who have more education are empowered and thus improves their decision making ability. This rejects the assumption of Mukirra (2015) which suggests that women with higher education are less likely to seek care because they assumed that women with higher education tend to have better knowledge of treatment for diarrhoea, thus, find it not useful to seek care.

**Caregiver's Occupation:** evidence from literature review reveals that relationship between occupation and health seeking has been controversial. This study found no significant relationship between occupation and the likelihood of seeking healthcare outside of the home. However, a sufficient relationship was observed between caregiver's occupation and choice of health service visited as well as use of ORT. This is consistent with other studies in Nigeria (Aremuet *et al.*, 2011). In Nigeria, this association can be explained by report that burden of diarrhoea in children under five is associated with income (*ibid.*, 2011). Thus, due to high burden of diarrhoea among lower income people, health seeking tends to be higher among them.

**Child's Gender:** due to cultural and religious beliefs and practices in sub-Saharan Africa, gender discrepancy exists when it comes to distribution and use of basic amenities at home and in the community in which males are more inclined to be taken for appropriate health care service. However, there no significant relationship was observed between gender of the child and health seeking.

**Child's Age:** Child's age has been a significant predictor of health care seeking, especially in Africa (Chandwani and Pandor, 2015). Although no statistically significant association was found between child's age and health seeking behaviour, the results of this study showed that caregivers were more likely to seek care for younger children (0-12 months) compared to older children between 37-48 months. This finding is consistent with other studies in Kenya and Tanzania and Nigeria (Kantéet *et al.*, 2015). Conversely, this does not agree with result from similar study by Mukiira (2015). However, variation between the finding of this study and Mukiira (2015) could be due to the fact that my study focused on whether the caregivers sought care or not as opposed to whether they sought appropriate care. This therefore argues whether the caregiver sought care younger children but the care is not appropriate. This study therefore provides the alternative answer.

**Accessibility:** Physical access to health care service and facility have played a major role in health seeking and health care utilization. According to Mukiira (2015), accessibility plays a major role especially in rural communities where basic health and social amenities are limited. Congruently, this study observed a statistically significant relationship between accessibility (distance to health facility) and health seeking behaviour. Caregivers reported visiting health facility due to easy access. This finding is consistent with findings from other studies conducted in Nigeria (Kahabuka *et al.*, 2011), and other countries. This finding could be due to lack of proper road transport network in the rural communities. Contrary to

Uzochukwuet *al* (2008) which observed that individuals in rural areas are likely to visit traditional healers when physical access to higher (PHC and Hospitals) health facility is not possible; this study found this to be the case with visiting TBA. Despite the association between accessibility and HS, result still showed that accessibility was not a barrier when caregivers considered quality of service provided in health facility (government hospital). This is in congruent with findings from other studies. Perceived service quality plays an important role in healthcare services utilization (Kahabuka *et al.*, 2011). However, the finding finds reflection in Andersen and Newman's (2005) model of health care utilization which suggests access to health facility as a significant determinant of health care utilization.

**Family Influence/ Significant Orders:** The study found an association between significant others and HSB. Studies that examined the influence of significant others on caregiver's health seeking behaviour for childhood illnesses are limited. However, some theories have explained this relationship. Foucault (1980) explained the role of power and hegemony in health service usage. His opinion centred on the role of family figure head in every decision making process including health service utilization. However, this may not be the case of this study as the study did not ask whether the influence was from the family health or friends and relatives. Meanwhile, this finding can be explained using Andersen and Newman's (2005) model of health care utilisation which explained the importance of social interaction in health seeking and service utilization.

## Conclusion

This study sought to examine caregivers HSB and socio-demographic determinants of caregivers HSB for children with diarrhoea in Nkanu west LGA area of Enugu state Nigeria. Extensive literature review reveals the magnitude of the burden of diarrhoea in children in developing countries (Aremuet *al.*, 2011; WHO, 2013; Walker *et al.*, 2013; Liu *et al.*, 2015). However, literatures also suggest that the morbidity and mortality resulting from diarrhoea in children can be minimized through the adoption of appropriate health seeking behaviour by caregivers (Ogunlesi and Olanrewaju, 2010; Awoke, 2013). Extensive review of literatures on caregivers HSB showed variations in pattern of HSB across sub-Saharan African countries, especially Nigeria. Various studies showed that caregivers visited both hospital, PHC, traditional healers, chemist or adopted self-management with and without the use of ORT (Kanté *et al.*, 2015). However, the choice of HSB adopted are influenced by factors such as educational status, socio-economic status, child's age and gender, place of residence, accessibility, cost of treatment, significance orders, perceived severity of illness, etc., (Omotoso, 2010; Gera *et al.*, 2015; Kanté *et al.*, 2015). The result of this study showed a significant level of HSB among the caregivers in the geographical area. Unexpectedly, in contrary to many studies that examine HSB in rural areas, cultural and religious factors were not found to influence the HSB of the caregivers for diarrhoea in children. Instead, social, economic and demographic factors such as cost of treatment, education, occupation, accessibility (distance from health facility), significant others were found to be the major determinants of HSB. Moreover, these findings therefore could suggest a positive effect of health promotion and shift in religious-cultural definition of illness and practices to appropriate health

care utilization and practices. However, perceived severity of the illness was the major determinant for not seeking care outside home. These findings can be explained by the application of theories such as Anderson and Newman's (2005) health utilisation model, which suggests that factors such as socio-economic, demographic, perceived vulnerability, susceptibility and severity influence health seeking behaviour.

Evidence from the findings of this study suggests that policies targeted at improving and promoting appropriate HSB and healthcare utilization among caregivers in the rural communities in Nigeria, for diarrhoea in children under five years of age should include strategies that will improve child health through:

- Improving awareness on health promotion and appropriate HSB.
- The development of focused intervention programmes to meet the needs of rural dwellers, with the aim of improving child health that could lead to a reduction in child morbidity and mortality which was the aim of MDGs and SDGs
- Inclusion policy through the implementation and reinforcement of Rural Communities Social Health Insurance Programme (RSHIP) which will improve access to affordable basic child health care service in rural communities in Nigeria.
- Training of Traditional Birth Attendants (TBAs) by the Ministry of Health through the National Primary Health Care Development Agency (NPHCDA) to assist in managing childhood illnesses in the communities.
- Implementation of Ward Health System (WHS) through the construction of PHCs in each rural community to improve access to basic child health services.
- Inclusion of significance others in health education regarding child's health
- Multi-sectoral approach to health promotion and education
- However, the design adopted uses aggregate data which can only provide information of the sample chosen and not on individual's sample unit. This may suggest that any association found from the aggregate data may not necessarily mean the same on the individual level (Spicker, 2008). Therefore, this design can show only statistical correlation; hence the need to apply qualitative approach to examine the how and why.
- Furthermore, the study only asked question on general health seeking and not specific. It is important for other studies looking at HSB to examine whether or not the care sought is in appropriate facility in order to measure whether the care is appropriate. This is because if care sought is inappropriate, it could worsen the child's health leading to increased child mortality.

Nursing practices involves different roles both in the inter-disciplinary approach and independent functions at various facet of individual care such as counselling for behaviour change, strategies to improve access. Nursing role have increasing included health promotion and improvement both at the primary and secondary intervention levels. Therefore, understanding individual's health seeking behaviour is crucial to nursing practice both at the clinical and community setting (Ogunlesi and Olanrewaju, 2010). Generally, nursing interventions at community and clinical levels helps to

improve health. Understanding of the health seeking behaviour of caregivers for children with diarrhoea in rural communities will necessitate nursing interventions to strengthen effort to make every contact with caregivers count. This is because nurses when compared to other health care professionals have more and longer contact and interaction with individuals in health care facilities. Knowledge of the caregiver's health seeking behaviours for children with diarrhoea will help develop strategies for developing community based nursing intervention and health promotion plans that will help caregivers adopt positive and recommended health behaviours. Promoting as positive health behaviours of caregivers will help to minimise child mortality and morbidity from diarrhoea and improve health outcome of children under five in rural communities which is one of the major goals of sustainable development goal (United Nations Development Programme, 2000).

### Ethical Approval

Ethical approval for this study was obtained for the University of Sunderland and Enugu state Ministry of Health Ethics Committees.

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