

# Perceived Causes of Childhood Illnesses and Herbal Medicine Utilization among Mothers of Child-Patients in Lokoja, Kogi State, North-Central, Nigeria

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## Abstract

The joy of ownership of children in Africa either as an “Agro-based” labour pool, social symbol or for physical and security purposes cannot be over-emphasized. As important as children are in Nigeria, their lives are almost always threatened by several problems such as nutritional deficiencies and illnesses, especially malaria, diarrhoea diseases, Acute Respiratory Infections (ARIs), Vaccine Preventable Diseases (VPDs) and absolute poverty, which accounted significantly for the severe morbidity and mortality rates among children less than age five years. The study, therefore, investigated utilization of herbal medicine among mothers of under-five children in Lokoja, Kogi state, North-central Nigeria. The descriptive cross-sectional research design was used to study 300 mothers of paediatric patients. The questionnaire was designed to elicit the data from the respondents through the systematic and purposive sampling techniques. The Statistical Package for Social Sciences (SPSS), version 18.0. was used to analyse the data collected while the hypotheses were tested using the spearman rank correlation. The study findings revealed among others that, the respondents considered herbal remedies safe for the treatment of their sick children and so expressed satisfaction with the products used. Similarly, the perception of disease aetiology among the respondents had a significant positive correlation with the utilization of herbal medicine, while religious affiliations and orientations positively influenced the use of the medicine in the study area. The study, therefore, concluded that herbal medicine is an integral aspect of the overall healthcare delivery system and should be promoted for remedial intervention at the outset of diseases. Perception of disease aetiology and religious affiliations are predictors of the respondents’ health seeking behaviour. “Cross-system” referral is recommended for herbal as well as orthodox medical practitioners if the jeopardizing health of the under-five children is to be addressed holistically.

**Keywords:** Disease Aetiology, child-Patients, Herbal Medicine, and Utilization

## 1. Introduction

Everywhere in Africa, a high premium is placed on the existence of children either as an asset of labour in an agrarian economy, social symbol or for physical and security purposes. The absence of any child tends to threaten the stability and sustainability of marital life. Preponderantly, a society driven by the practice of patriarchy is likely to express its preference and bias for male children. Generally, the importance of having a child or children cannot be over-emphasized particularly in the Nigerian society (Onwuejeogwu, 1981; Kigozi; 1992; Owumi; 2002; Petite & Ogionwo, 2003; Amasa & Almon, 2014). Owumi (2002) reiterated the observation of Onwuejeogwu about the Nuer people of Sudan who would not share bride gifts until the birth of the first child. Similarly, among the Hausa-Fulani of northern Nigeria, marriages would only enjoy stability after the birth of the first child. On the other hand, childless women are socially stigmatised, excluded from leadership roles and labelled with all manners of derogatory names such as a witch, outcast, barren, among others (Tabong & Adongo, 2013; Ola, 2009; Jegede, 2010; Ronald, 2009).

As important as children are in Africa, the health of the Nigerian child is almost always threatened by several problems such as nutritional deficiencies and illnesses, especially malaria, diarrhea diseases, Acute Respiratory Infections (ARIs), and Vaccine Preventable Diseases (VPDs), which account significantly for the severe morbidity and mortality rates among children less than age five years (National Demographic and Health Survey (NDHS), 2008). According to the NDHS (2008), infant mortality rate at a point was 75 deaths per 1, 000 live births, while the under-five mortality rate stood at 157 per 1,000 live births for the under-five year period immediately preceding the survey. The neonatal mortality rate was put at 40 per 1,000 births. Thus, almost half of childhood deaths occurred during infancy with one-quarter taking place during the first month of life. However, child mortality was consistently lower in urban areas than in rural settlements. There was also variation in the mortality level across regions. The infant and under-five mortality rates were highest in the North East, and lowest in the south West.

As a pandemic disease, malaria has been implicated as the most important cause of morbidity and mortality in infants and young children (38% and 28%) and young children (41% and 30%) respectively. About 75% of malaria deaths occur in children under five. It also contributes significantly to neonatal and perinatal

mortality as well as anaemia in young children, thus threatening their growth and development (Policy project Nigeria, 2002). The second most common cause of infant death is diarrhoea illnesses. According to the World Bank (2002), Nigeria has lost 43 healthy years of life per 1,000 because of diarrhoea illnesses. Acute Respiratory Infections (ARIs) which include a wide range of upper and respiratory tracts infections (Pneumonia), commonly manifesting with a cough, fever, and rapid breathing is a third of the life-threatening disease heightening infant mortality rate in northern Nigeria. It is also on record that Nigeria has lost 41 productive years of life per 1,000 due to ARIs (NDHS, 1999). The statistics further revealed that about 11 percent of infants less than three years of age had ARI symptoms in the last preceding the study; however, less than one-half were taken to a health facility for treatment. Following in that order of threats to child survival are Vaccine Preventable Diseases (VPDs). These diseases include tuberculosis, tetanus, poliomyelitis, measles, chickenpox, cerebrospinal meningitis, diphtheria, and other VPD associated symptoms.

From the foregoing, the health situation of the Nigerian child, like in many other developing countries has degenerated progressively in the last two decades. The resultant effects manifest in high child deaths and perceived threats to future productivity and national development of the country. The problem has assumed a disproportionately global dimension with the developing countries recording alarming scenarios. These debilitating health conditions are worst in the northern part of the country including Lokoja, the Kogi state capital. Despite the fact that health care facilities are concentrated in the city, access to them by the active poor, vulnerable women and children is a different thing entirely due to the disparity in income distribution. Besides, the majority of these poor people who are not enlisted into the National Health Insurance Scheme (NHIS) cannot access quality health care services. Consequent upon this, they are left with a choice of using traditional/herbal medicine found accessible and affordable among them. It is on this note that an investigation into herbal medicine utilisation as a successful pathway to the treatment of childhood diseases becomes timely and imperative.

## 2. Statement of the Research Problem

The issue of uncontrollable child mortality plaguing the developing countries has been placed on the front burner. Globally, many studies and national surveys like the NDHS (1999; 2008) have focused on the analysis of the pattern of infant and child mortality rates and they appear to be a consensus that the rates are declining (Adebayo & Fahrmiel, 2005). The rates of decline have however been slow in developing countries including Nigeria, thereby prompting the United Nations among other challenges to adopting in the year 2000, the eight (8) Millennium Development Goals (MDGS). The fourth schedule of it aims at reducing child mortality by two-thirds by the year 2015 (Aigbe & Zannu, 2012).

Despite the enactment of MDG fourth schedule, the health situation of the Nigerian child is so bad that the under-five mortality has steadily increased to 157 deaths per 1,000 live births. This translates to about one in every six children born in Nigeria dying before their fifth birthday. More worrisome is the fact that the mortality rate was 88 deaths per 1,000 children surviving to 12 months of age, but not to their fifth birthday. The infant mortality rate was put at 75 deaths per 1,000 live births, and the neonatal mortality rate 40 deaths per 1,000 live births (NDHS, 2008; Aigbe & Zanu, 2012). The more disturbing scenarios of the child mortality are commonly found in the northern region of the country, including Kogi state.

In order to meet the health needs of their children, Nigerian women have always looked beyond what the modern health care service providers can offer to the utilisation herbal medicine. The medicine is a dominant and an integral part of Nigerian traditional health care delivery system (Oreagba, Oshikoya & Amuchree, 2011; Nwokocha, 2008; Adesina, 2008; Erinsho, 1998 and Owumi, 1996). Traditional medicine refers to drugs made from herbs or plants, which has assumed several nomenclatures, with plants as the raw materials. These nomenclatures include phytomedicines, plant medicines, green medicines, traditional remedies, plant drugs and forest health products among others (Osemene, Elujoba & Ilori, 2011). Regardless of these nomenclatures, the medicine comprises herbal materials, herbal preparations, and finished herbal products that contain parts of plants or other plant materials as active ingredients (Kunle, Egharevba & Ahmadu, 2012). The plant materials include seeds, berries, roots, leaves, or flowers (WHO, 1996). The World Health Organization also defined herbal medicine as finished labelled medicinal plants that contain as active ingredients aerial or underground parts of plants or other parts of plant materials or combinations thereof whether in the crude state or as plant preparations. It has been established that many drugs used in modern medicines like atropine, codeine, digoxin, quinine, vincristine, aspirin, taxol, colchicine, pilocarpine, podophyllin and so on were originally obtained from plants (Raphael, 2011; Owumi, 2005). Herbal medicine can be purchased in crude forms or as refined pharmaceutical dosages such as capsules, tablets, concentrated extracts, teas, tinctures, and decoctions. The study focus is however on the consumption of herbal products that are prepared locally to meet the health needs of people in Lokoja and not the ones refined industrially. The points of reference here are on affordability, accessibility, availability and efficacy.

Since the “introduced” (Nwokocha, 2008) health care delivery system is plagued with some myriad of

problems, thereby failing to meet health needs of many Nigerians (including children), the majority of these people have always resorted to traditional medicine use. It has also been discovered in a study that traditional or Complementary and Alternative Medicine (CAM) use was a common phenomenon amongst child-patients with chronic illnesses like epilepsy, sickle cell anaemia and asthma (Oreagba et al, 2011). In addition, the use of herbal medicine in the management of hypertension has equally drawn the attention of some researchers (Osamor & Owumi, 2010; Amira & Okubadejo, 2007). It is of further interest to point out that some HIV/AIDS patients have been discovered using herbal remedies (Onifade, Jewel, Okesina, Oyeyemi, Ajeigbe... Akinmurele, 2012). In another study, high prevalent use of herbal medicine was reported (Aydin, Bozkaya, Mazicioglu, Gemelmaz, Ozcakiir & Ozturk, 2008). According to WHO (2003), there has been widespread use of traditional medicine across Africa. In Nigeria, Ghana, Mali and Zambia, the first line of treatment for the majority of children with high fever resulting from malaria is the use of herbal medicine at home. Even though concrete data were scarcely available, Owumi (2005) and Nwokocho (2008) have noted in their separate studies showing 70% utilisation of traditional medicine among Nigerians. Despite the high global patronage and the use of herbal medicine (Aydin et al, 2008; Eisenberg, Davis, Ettner, Appel, Wilkey.. Kesler, 2008; Michael, Robert, Helmut, Michael, Alan & Michael, 2012), recognition is yet to be fully accorded it officially across most states in Nigeria (Awodele, Agbaje, Abiola, Awodele & Dolapo, 2012).

While Oreagba et al (2011) focused their study on herbal medicine use among general population, excluding those with chronic health conditions, Osamor and Owumi (2010) on the use of herbal medicine for the management of hypertension, this study concerns itself with the use of herbal medicine among mothers of child-patients diagnosed with illnesses at modern health care centres in Lokoja metropolis. Such illnesses include but not limited to malaria, tuberculosis, measles, chicken pox, diphtheria and convulsion. From the previous studies, there exist scanty research studies concerning the use of herbal medicine among mothers of under-five children especially within the contextual pursuit of the MDG 4. The reason for the study of this nature is that the northern part of the country has consistently recorded the worst scenarios of infant and maternal deaths. It is a timely study aimed at providing pathways and roadmap towards collaborating with the traditional medicine practitioners in the fight against infant morbidity and mortality while at the same time pursuing the MDG 4.

In terms of health care service delivery in Lokoja, doctor population ratio across the state was put at 1:38, 092, while that of the nurse, pharmacist and laboratory scientist's ratios to the population stood at 1:84,975, 1:132, 562 and 1:44, 089 respectively. Access to quality health care services is further constrained to the marginalised poverty-stricken women and children since the cost of service is based on out-of-pocket expenses (Kogi state Health bulletin, 2008-2010). These aforementioned ratios are grossly inadequate, abysmal and calamitously consequential in terms of meeting the health care needs of the people. Warren and Green (1988) have equally pointed out that indigenous healers far outnumber biomedical personnel in many African countries by at least one hundred to one. It is on this premise that the study set out to investigate among other things, the perception of disease aetiology and herbal medicine utilisation among mothers of paediatric patients in Lokoja, Kogi State North-central Nigeria.

### 3. The Research Questions

The research has certain self-compelling questions necessary in facilitating data collection exercise and as guides for further investigation. They include:

- i. What is the extent of knowledge of and experience with herbal medicine utilisation among mothers of child-patients in Lokoja, Kogi State, North-central Nigeria?
- ii. What is the respondents' perception of the aetiology of childhood diseases in the study area?
- iii. Is there any significant relationship between the respondents' perception of childhood diseases and the use of herbal remedies for the under-five children in Lokoja metropolis?
- iv. Do the religious affiliations of the mothers have any significant relationship with the use of herbal medicine in the study area?

### 4. The Research Objectives

While the general objective of this study is to investigate the socio-cultural predictors of herbal medicine among mothers of child-patients in Lokoja, the specific objectives are to:

- i. determine the extent of knowledge of and experience with herbal medicine use among mothers of under-five patients in Lokoja, Kogi State, North-central, Nigeria.
- ii. examine the respondents' perception of the aetiology of childhood diseases in the study area.
- iii. examine the relationship between the respondents' perception of childhood diseases and the use of herbal remedies for the under-five children in Lokoja metropolis?
- iv. investigate the respondents' religious affiliations and their disposition to the use of herbal medicine in the study area.

## 5. The Research Hypothesis

The study is bound by two hypotheses, namely:

**HO:** there is no correlation between the respondents' perceived causes of childhood diseases and their disposition to use herbal medicine in the study area.

**HO:** the respondents religious affiliations and orientations have no correlation with the use of herbal medicine in Lokoja.

## 6. The Review of Related Literature

An increasing body of literature is currently drawing attention to traditional medicine utilization in the light of treatment pathways (Owumi, 1996b; Erinosh, 1998; Nwokocha, 2008, Kazembe, Munyarari & Charumbia, 2012; Duru, Diwe, Uwakwe, Duru, Merenu, Iwu, Oluoha & Ohanle, 2016; Nwaiwo & Oyelade, 2016). Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plants, certain animals and mineral-based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being (WHO, 2003). Owumi (2005) opined that traditional medicine is a generic term used mainly to describe "all manners" of medicine that is indigenous to a particular group of people with differing appellations, as they prefer. For example, the Chinese call it acupuncture, Indians name it Ayurveda, and Swazi label it as *Muti*. In the case of Nigeria, it is generally referred to as traditional medicine with various ethnic-based names and titles like *babalawo* in Yoruba, *dibia* in Igbo, *boka* in Hausa, *oboh* in Okpe-Delta and *Obochi* in Igala language.

### 6.1 Forms of Traditional Health Care Delivery System

There are two major forms of traditional medical systems (Owumi, 2005), namely: general and specific systems. Besides this broad categorization, several traditional practitioners exist in the country. Nwokocha (2008) contended that although components of each of these systems can be located in different communities within the country, their contents vary.

The general health care delivery system entails persons versed in diverse skills vis-à-vis management of different forms of the problem in the community as observed by Owumi (1996b)'s study conducted among Okpe people of Delta state, Nigeria. The general health care delivery system is a channel that offers all-purpose and non-specific medical care to persons seeking various forms of health care. Such a system has no boundary as to the extent to which it can claim to provide medical assistance to those in need, no matter the severity of the problem in question. Those venturing into this kind of practice have been discovered to be motivated by economic considerations. The traditional specific health care delivery emphasises specialisation as it concerns the treatment of illnesses. Over the years, there exist various traditional health care practitioners in the following areas: divination, poison healing, birth attendance, bone setting, herbalism, massaging and psychiatry (Nwokocha, 2008). The point of study here is herbalism or the use of herbal medicine for treatment of childhood diseases. It is well documented that herbal medicine is the most preferred form of treatment for HIV/AIDS among the rural dwellers in sub-Saharan Africa (Orisatoki & Oguntibeju, 2010).

In its conceptual use, herbs are plants or parts of a plant valued for its medicinal, aromatic or therapeutic qualities. Herbs can be understood as biosynthetic chemical substances. They are medicines or remedies containing some portions of plants or unrefined plant extracts with several constituents acting together synergistically. In other words, herbalism is the use of herbs or herbal products for their therapeutic or medicinal value. They can be obtained from any part of the plant such as leaves, roots, seeds, barks, flowers, among others. The medicines consumed raw, refined, swallowed, inhaled or applied topically to the skin (Kunle, Egharevba & Ahmadu, 2012).

### 6.2. Utilisation Pattern of Urban Healthcare Services

Utilisation of health services is a complex behavioural phenomenon underscored by gender, age, income, education occupation, and place of residence, perceived severity of illness and personal experiences of the sick person (Erinosh, 1998; Onokerhoraye, 1999, Muriithi, 2013; Dey & Mishra, 2014). Modern healthcare facilities are usually concentrated in cities but the question of access is a different thing entirely (Jegade, 2002; Sanni, 2010). This implies that the active poor in the city hardly accesses qualitative health services like their counterparts in rural areas. This lack of accessibility due to their low socio-economic status among other factors compels a vast majority of the people in the city to rely on the services of traditional medicine practitioners and self-medication. In terms of gender disparity, utilisation of health services among women generally has been associated with the following variables like their current age in correspondence with presumed accumulated knowledge of health services, the level of education, birth order and a number of children (Fieldler, 1981). For instance, women with a large number of children under-utilize available health services because of so many demands on their time and resources (Mckinlay, 1972). Similarly, it has also been discovered that older women were more likely to seek maternal healthcare services than younger ones (Chakraborty, Islam, Chowdhury, Bari

& Akherter; 2003). Other variables influencing healthcare services utilisation patterns among urban dwellers have been related to availability, quality and cost of services, as well as socio-economic structure and personal characteristics of the users (Awoyemi, Obayelu and Opaluwa, 2010).

### **6.3 Frequency of Herbal Medicine Utilization among Urban Dwellers in Nigeria**

The frequency of herbal medicine utilisation among patients suffering from chronic as well as acute illnesses is increasing globally and is well-documented in the literature (Osamor & Owumi, 2010; Oshikoya et al, 2008; Eisenberg, Davis, Ettner, Appel, Wilkey, Van Rompay, & Kessler, 1998; ). In a study conducted among hypertensive patients in Nigeria, it was discovered that the majority of the study population (63%) were currently using herbs to manage their morbid conditions. It has also been revealed in the literature that urban dwellers were disposed to using herbal medicine in addressing some of their health needs (Oreagba et al, 2011; Amira & Okubadejo, 2007).

Several reasons have been adduced in the literature for the increased prevalence of CAM utilisation. These reasons include among others, failure of modern medicine to cure some underlying health problems and the perception that CAM is cheaper than conventional medicines (Amira & Okubadejo, 2007).

### **6.4 Perceived Causes of Illnesses and Healthcare Services Utilisation**

Several attempts have been made to explain how people view diseases/illnesses within their socio-cultural milieu. To this end, divergent opinions were offered as to what constitute causes of illnesses. These opinions have been identified in three (3) explanatory frameworks, namely: 'medical' model, psychological and culture-bound theories of disease (Eriosho, 1998). The concern in this study, however, is, to unearth some underlying factors behind the perception of disease aetiology and pathways to seeking care, with particular reference to Lokoja, North-central Nigeria. This is because culture and health behaviour are very important segments in society (WHO, 1998).

The age-long dominance of germs theory of disease in the medical discourse has continued to undermine the influence of culture on people's worldviews about health and illnesses. For decades, it was believed that most disorders in humankind could be explained "narrowly" with recourse to "medical" and psychological terms until a number of health workers began to document notions of health and disease in many traditional non-western societies (Eriosho, 1998, Nkosi, 2012, Sambe, Abanyam & Iorkyaa, 2013).

Having realised the unavoidable influence of culture in the management of health and disease, there is a need to examine theoretically, how people explain these concepts. Culture-bound explanations of disease are widespread among Nigerians. Explanations of disease in society revolve around three main etiological factors, namely: natural, preternatural and mystical.

Certain diseases are said to have natural causations. The causes of such may include unclean water, unhygienic food and vagaries of weather, lack of rest, stress-induced activities, health-risk behaviours (smoking, drug addiction, drunkenness, etc.) and poor living conditions.

### **6.5 Empirical Review**

In a study carried out by Awad and Alshaye (2014) using cross-sectional survey design to examine public awareness, patterns of use and attitudes toward natural health products (herbs), self-administered questionnaire was used to elicit the data from 1300 Kuwaiti individuals. The researchers used multi-stage stratified clustered sampling after which the data collected were analysed with the aid of PS power and sample size calculator V.3.05. The findings emanating from the study showed that Natural Health Products (NHPs) were thought to be synonymous with herbal remedies by approximately two-thirds of respondents (n=745; 63.5%), while the consumption of herbal remedies accounted for 41.3% among others. In addition, most of the respondents showed increased interest to acquire knowledge about different types of information related to herbal remedies. The study, therefore, concluded that the use of herbal remedies among the Kuwaiti population is high.

Similarly, Mwangi and Gitonga (2014) investigated the perceptions and use of herbal remedies among patients with diabetes mellitus in Murang'a's North District, Kenya. The descriptive cross-sectional study design was adopted to under-study 258 respondents purposively sampled with questionnaire instrument, while SPSS version 11:50 served as the analytical tool together with ANOVA and Chi-square. One of the significant findings was that 86.8% of the respondents had the awareness of herbal institution in their environment. However, 14.3% had visited the herbal institution. Regarding combining herbal remedies with orthodox or modern medicine, 50.7% admitted such health seeking behaviour. In conclusion, the majority of the diabetic patients (45%) used herbal remedies on trial basis, not on the grounds of prior knowledge or experience. The combination of herbal remedies with contemporary medicine was a common practice among diabetics in Murang'a, Kenya, despite the fact that they may be complications arising from interactions following using both concurrently.

## 7. Theoretical Explanations of the Study

Explanations of disease aetiology and health-seeking behaviour can be located in the womb of the Health Belief Model (HBM). Health-seeking and illness behaviours have been explored from three (3) different angles (Jegede, 2010) namely: (i) those which utilize mainly psychological processes and variables to explain decisions; (ii) those which make use of individual demographic characters and healthcare delivery systems to explain decisions; (iii) those which explain decisions as a result of social psychological processes (Jegede, 2010). Among these three perspectives, HBM is the one that anchor decisions on individual psychological variables.

The HBM was propounded by Godfrey Hochbaum and Irwin M. Rosenstock in the 1950s and '60s (Tinuola, 2009; Jegede, 2010; Murphy, 2005; NICE, 2007; Haralambos & Holborn, 2008) to study and promote the uptake of health services. Beginning with the U.S public health service as a microcosm of the investigation, the HBM was developed to account for low participation of people in tuberculosis screening programme.

The underlying thrust of the original HBM is that health behaviour is determined by personal beliefs or perception about a disease and the strategies available to reduce occurrence (NICE, 2007). According to the model, beliefs and attitudes of people are crucial determinants of their health-related actions. It was also developed to determine the tendency of an individual to participate or not in programmes targeted at disease prevention and promotion of efforts aimed at achieving improved health conditions of the people (2009). In other words, the basic components of the HBM are derived from the well-established body of a psychological and behavioural theory whose models hypothesise that behaviour depends on mainly two variables, namely: the value placed by an individual on a particular goal; and the individual estimate of the likelihood that a given action will achieve that goal. When these variables were conceptualized in the context of health-related behaviour, the correspondences were: (1) the desire to avoid illness (or if ill, to get well); (2) the belief that a specific health action will prevent (or ameliorate) illness (i.e., the individual's estimate of the threat of illness, and of the likelihood of being able, through personal action, to reduce that threat) (Janz & Becker, 1984). In this sense, both western and traditional (herbal) medicine users seek common goal (improved health status). Similarly, the model suggests that an individual's belief in a personal threat together with his/her affirmation of the effectiveness of the proposed behaviour will predict the likelihood of that behaviour. It also posits that a person will take action to prevent or cure disease only to the extent that the disease exists in or her perception. Specifically, readiness to act is determined first by the perceived susceptibility to the particular disease in question and second, by the perceived severity of contracting the disease (Jones, Jones & Katz, 1998).

The following four perceptions serve as the pillar constructs of the model, namely: Perceived susceptibility or vulnerability, Perceived severity or seriousness, Perceived benefits and Perceived barriers. Each of these perceptions, individually or in conjunction, can be used to explain health-seeking behaviour. More recently, other constructs have been formulated and added to accommodate cues to action, motivating factors and self-efficacy.

### i. Perceived Susceptibility

Personal risk or susceptibility is one of the most powerful perceptions in prompting people to adopt healthier behaviours or lifestyle. The greater the risk, the likelihood of engaging in behaviour to mitigate or reduce susceptibility. For mothers of paediatric patients to arrive at health decisions, they must first believe that their children are vulnerable to one of the childhood diseases like malaria, diarrhoeal illnesses, measles, chicken pox, diphtheria, tuberculosis and a host of others heightening mortality. Jegede (2010) reiterated the view of Rosenstock (1974) that susceptibility operates at three levels, viz: high susceptibility, medium susceptibility and low susceptibility. Perceived susceptibility is mainly concerned with preventive health. However, it has been modified to account for issues bordering on curative health. For example, the perceived vulnerability of children under ages one and five to measles will make their mothers go for vaccination or herbal medicine, depending on their aetiological perception of the disease. This is logical with people when they believe to be at risk of getting a disease, their health-related actions will be oriented towards preventing it from happening. Perception of increased susceptibility or risk is linked to healthier behaviours and decreased susceptibility to unhealthy behaviours. In practice, however, it may not always be through.

### ii. Perceived Severity

This is a subjective evaluation of the seriousness of the consequences associated with a state or a condition. The construct of perceived severity or seriousness speaks to an individual's belief about the severity of a disease. While the perception of seriousness is often based on medical information or knowledge, it may also come from beliefs a person hold about the difficulties a disease would create or the effects it would have on his or her life in general. As it applies here, mothers of paediatric patients are likely to assess the severity of any of the diseases afflicting their children. The severity may manifest through a constant headache, feverishness, coughing, among others to the extent that socio-economic activity of these women may be disrupted. The extent to which the

day-to-day activities of these custodial mothers are paralysed as a result of illness episodes of their children is a function of perceived severity of such.

### iii. Perceived Benefits

The construct of perceived benefits is a person's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing a disease. The person's perception of the benefits associated with actions to reduce the level of severity or vulnerability influences his/her health-related behaviour. In other words, perceived benefits encompass an individual's assessment of the positive consequences of adopting the behaviour. In this case, people tend to adopt healthier behaviour when they believe the new behaviour will decrease their chances of developing a disease. This construct applies in situations where mothers of child-patients compare treatment pathways and what they stand to gain from either using herbal medicine or visiting hospital-based health facilities. This, in turn, depends on certain factors some of which may be considered as barriers to actions.

### iv. Perceived Barriers

This entails the perceived negatively valued aspects of taking the action or overcoming anticipated barriers to taking it. As Janz & Becker (1984) posit that potential negative aspects of a particular health action may act as impediments to undertaking the recommended behaviour. A sort of cost-benefit analysis is thought to occur wherein the individual weighs the action's effectiveness against perceptions that may be expensive, dangerous (e.g., side effects), unpleasant (e.g., painful, difficult, upsetting), inconvenient, time-consuming, and so forth. In actual sense, barriers are those inhibitors or impediments to mothers of child-patients performing an appropriate health-related action like utilising either western or traditional medicine. These barriers may appear in the forms of costs of treating their sick children, geographical accessibility to the healthcare facilities (cost of transportation), and negative attitude of medical personnel, gender and socio-cultural variables linking disease aetiology. For example, if the mothers of the sick children believe that the perceived cost of seeking medical care in hospital-based health facilities outweighs the benefits, perhaps, they will look for any alternative source like herbal remedies.

## 8 The Methodology

The research is principally concerned with herbal medicine utilisation among mothers of under-five patients attending health care facilities in Lokoja, Kogi state, north-central Nigeria. In the light of this, this section is broken down into Research Design, Study Area/Population, Sample Size and Sampling, Methods of Data Collection and Method of the data analysis.

### 8.1 The Research Design

The study adopted a descriptive cross-sectional design by utilising the questionnaire instrument to survey the views of the respondents on the extent of knowledge of herbal medicine utilisation; common illnesses reported among the child-patients; and the relationship between perceived causes of childhood illnesses and health seeking behaviour of these mothers Lokoja metropolis. Through this design, 300 mothers of the paediatric patients whose ages range between 0-9 months and <5 years were understudied. While mothers of sick children under one (1) and five (5) years presented in selected health facilities were considered for the study, the fathers of these aforesaid children were excluded.

### 8.2 Study Area/Population

The study area is Lokoja, the capital of Kogi state in north central Nigeria. Kogi shares some boundaries with states like Benue, Kwara, Edo, Niger, Ondo, including the federal capital territory of the country, Nigeria. Kogi state which was created in 1991 currently has 21 local government areas with a landmass of 28, 312.6 kilometres square (Kogi State Health Bulletin, 2008-2010). It is elegantly called *confluence city* because of the convergence of Niger and Benue Rivers in the city. Lokoja, the state capital is a local government area with ten (10) political wards. Five (5) of these political wards are located within the state capital and they include Eggan, Kakadan, Kupa-South and Oworo. The headquarters of the local government is Lokoja in Oworo, surrounded by the remaining wards. The city is bounded to the north by Niger state, Koto-Karfe Local Government Area (LGA) to the East, Adavi and Okehi LGAs to the south and Kaba Bunu to the West respectively. The study was confined to these five (5) politically delineated units revolving around the city. The choice of Lokoja for the study was informed by its relatively large size and heterogeneity. The city is partly residential, commercial and with some endowments of industrialisation. The study population for this study was made up of one thousand, four hundred (1400) registered mothers of child-patients attending the various health facilities located in the political wards mentioned above.

### 8.3 Sample Size and Sampling

The target population for this study was the one thousand, four hundred (1, 400) mothers of under-five child-patients registered and presented at the selected health facilities located in Lokoja, the state capital. The sample size for the study was 300 of these mothers selected using Krejcie and Morgan formula. The formula is presented thus:

Krejcie and Morgan:

$$S = \frac{\chi^2 NP (1-P)}{d^2 (N-1) + \chi^2 P (1-P)}$$

Where:

S= Sample size,

$\chi^2$ = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N= Population size

P= the population proportion (assumed to be .50 since this would provide the maximum sample size)

d= the degree of accuracy expressed as a proportion (.05)

$$\begin{aligned} \text{Therefore: } S &= \frac{(3.841) (1400 \times .5) (1-.5)}{(.0025) (1400-1) + (3.841 \times .50) (1-.50)} \\ &= \frac{(3.841) (1400 \times .5) (0.5)}{(.0025) (1399) + (3.841 \times .50) (.5)} \\ &= \frac{(3.841) (1400 \times .5) (0.5)}{3.4975 + 0.96033} \\ &= \frac{(3.841) (350)}{4.4578} \\ &= \frac{1344.35}{4.4578} \\ &= 301.572525 \\ &= 302 \end{aligned}$$

The sample size of 302 was drawn to reflect the five politically delineated wards and health facility attendance of the mothers with their under-five children. The disproportional distribution of the study population showed as follows: Eggan= 60, Kakadan=62, Kupa-South=59, Kupa-North=51 and Oworo=70. Subsequently, an accidental sampling of the participants commenced in each facility until the sample size of 300 hundred was reached.

### 8.4 Method of Data Collection/Analysis

The questionnaire was used to elicit data from the respondents. This validated structured questionnaire contained both open and close-ended matrix questions to give room for the respondents' flexibility in responding to certain issues. The questions were in four (4) sections comprising the socio-demographic characteristics of mothers, respondents' knowledge and experience with the use of herbal medicine and the socio-cultural predictors of the use of it for the under-five children. The instrument was administered simultaneously with the aid of two (2) trained research assistants for easy facilitation. The resulting data collected were based on the retrieved 300 copies of the questionnaire. To determine the knowledge of and experience of the respondents with herbal remedies, the corresponding data were analyzed using Mean ( $\bar{x}$ ) to address objective one above. The criterion mean for decision making was 2.0. The average mean was computed as  $\bar{x} = 3+2+1=6/3=2.0$ . All items whose values are above 2.0 were either rejected or considered insignificant to an extent while weighted responses equal or above 2.0 were either accepted or significant to an extent. Furthermore, the study hypotheses were tested using the Spearman correlation with the aid of the Statistical Package for Social Sciences (SPSS), version 18.0.

### 8.5 Ethical Consideration

The principles of research ethics involving human subjects were maintained in tandem with the global best practices all through the study. Consequent upon this, the respondent mothers were sufficiently furnished with information about the main purpose of the study and their role in it. Participants were granted the latitude by the researcher to withdraw should there be any reason to do so. Furthermore, the researchers put into consideration the respondents' confidentiality and anonymity all through the study period as participation was by voluntarism. In addition, verbal permission was sought from the various managers and medical personnel of those health facilities before administering the questionnaire to the mothers of the child-patients presented based on the individual's informed consent.

### 8.6 Data Presentation, Results and Discussion of Findings

Three hundred and two copies (302) of the semi-structured pre-tested questionnaire were administered to the mothers of the paediatric patients accordingly. However, three hundred copies duly filled by the respondents



were retrieved, giving an excellent response rate of 99.3%. The analysis of the data was therefore anchored on the copies validly retrieved.

**Table 1: Socio-Demographic Characteristics of Mothers of Child-Patients**

Variables/Categories	Frequency	Percentage
<b>Marital Status</b>	-	-
Single parents	11	3.7
Married	247	82.6
Widowed	19	6.4
Divorced	19	6.4
Separated	4	1.0
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Age</b>	-	-
15-19	6	2
20-24	33	11
25-29	69	23
30-34	107	35.7
35-39	35	11.7
40-44	25	8.3
45 & above	25	8.3
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Educational Level</b>	-	-
No formal Education	28	9.3
Primary Education	34	11.3
Secondary Education	66	22
Tertiary Education	172	57.3
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Religious Affiliations</b>	-	-
Christianity	161	53.7
Islam	132	44
Traditional Religion	7	2.3
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Occupational Status</b>	-	-
Trading	76	25.3
Artisan	30	10
Civil Servants	153	51
Private Employee	33	11.0
Unemployed/Housewife	8	2.7
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Monthly Income (N)</b>	-	-
≤18,000	97	32.8
19,000-28,000	46	15.5
29,000-38,000	44	14.9
39,000-48,000	16	4.1
49,000-58,000	22	7.4
59,000-68,000	41	13.9
69,000 & above	34	11.5
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Age of under-five child years</b>	-	-
Less than 1 year	31	10.4
1 year	46	15.5
2 years	75	25.3
3 years	79	26.6
4 years	40	12.5
5 years	29	9.8
<b>Total</b>	<b>300</b>	<b>100</b>

**Source:** Authors' Field Survey (2012).

As for the marital status of mothers of the paediatric patients in table 1 above, the distribution shows the majority (82.6%) as being married, while 3.7 % were reportedly single mothers. Those who declared themselves

as widowed, divorced and separated constituted 6.4 %, 6.4% and 1.0% respectively. The age distribution in the same table indicated that most of the respondents (35.7%) were within the age range of 30-34, while 2.0% of mothers considered youngest were within the age range of 15-19 years. Those within the age range of 20-24 years constituted 7.0%. In the same pattern, 11.7%, 8.3%, 8.3% and 4.0% accounted for the respondents whose ages ranged as 35-39, 40-44, 45-49, and above 50 years respectively. In terms of educational attainment, the respondents that got no formal education constituted only 9.3%, while 11.3% were those with primary education. The respondents that have attained secondary education level were 22.0%. Importantly, more than half (57.3%) of the respondents were those that have acquired tertiary education from either college of education, polytechnics or universities with corresponding qualifications. Deducing from the data, the majority of those with tertiary education were likely to be found as civil servants in Lokoja. Education to some extent is a key determinant and predictor of career choice, social class and occupation (Haralambos & Holborn, 2008). It can also shape people's cosmology, the perception of illness and disease causation, including treatment pathways. Religious affiliations of mothers of child-patients showed that the majority (53.7%) professed Christianity, while a little less than half (44%) of the respondents were Islamic adherents as no respondent identified with the traditional religion. This might not be unconnected to the influence of western education and civilisation on the people living in urban centres (Otite & Ogionwo, 2000).

Occupationally, the majority (15.0%) of the respondents were civil servants located in government establishments, monitories and agencies, while the traders constituted 25.3%. Artisans and private employees among the studied population accounted for 10.0% and 11.0% respectively. In the same table 1 above, a close examination of the income distribution of the respondents revealed that the majority of the mothers of the child-patients (32.8%) earned N18, 000 or less than the amount monthly. On the other hand, those who earned the highest monthly income were significantly 11.5%. The role of income in accessing qualitative health care service in Nigeria cannot be downplayed (Okafor, 1982; Erinosh, 1998; Bello, 2005; Aiyegbusi & Adegbite, 2008, Opara & Osayi, 2016). Similarly, 15.5% and 14.9% of the respondents were within the income range of N19, 000-N28, 000 and N29, 000-N38, 000 respectively, while 4.1 %, 7.4% and 13.9% earned within and between N39, 000-N48, 000, N49, 000-N58, 000, N59, 000- N68, 000, depending on individual qualifications, years of service, and profit on business among others.

Children less than one (1) year represented 10.4%, while those under 1 and 2 years of age constituted 15.5% and 25% respectively. Comparatively, children less than 3 years were the majority (26.6%) in the sampled population. On the other hand, 12.5% and 9.8% of the children were under four and five years of age as reported in the table one (1). The children within these age categories are the implicit beneficiaries of findings resulting from this study. These children have illness challenges peculiar to them, which include but not limited to measles, cholera, fever, jaundice, diarrhoea, chicken pox and a host of others (Ebigbola, Asa & Feyisetan, 1997; Ameh, Tarfa & Ebeshi, 2012; Nwaiwu & Oyelade, 2016). This is why the United Nations encapsulated the issue in the millennium declaration tagged MDG 4 as mentioned earlier in the statement of the research problem.

**Table 2: Knowledge and Experience of Herbal Medicine Use among Mothers of Child-patients**

**Descriptive Statistics**

Variables	N	Minimum	Maximum	Mean	Remark
Mothers ever used Herbs	300	1.00	3.00	2.7300	Accepted
Information Sources of Herbs	300	1.00	3.00	2.1800	Accepted
Perceived Safety of Herbs	300	1.00	3.00	2.6733	Accepted
Satisfaction with Herbs used	300	1.00	3.00	2.3367	Accepted
Opinion on Herbs Used	300	1.00	3.00	2.4967	Accepted
Valid N (listwise)	300				

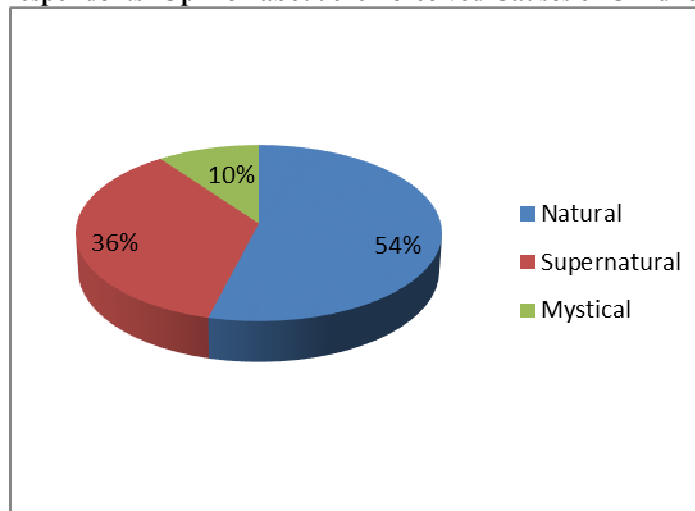
**Source:** Authors' Field Survey Computation Using SPSS Version 18.0 (2012).

Table 2 above shows among others, the investigative outcome of the distribution of respondents by those ever used herbal medicine for their under-five children; sources of information about the herbal remedies; the perceived safety of it and the experience after use. From the table, it was revealed that a significant number of mothers of under-five children had ever used herbal medicine for their sick children as reflected by the mean score of 2.7300. This finding was in tandem with Nwaiwu and Oyelade (2016); Oshikoya *et al.*, (2008), where the majority (72%) of the study population (nursing mothers) affirmed their ever usage of herbal medicine for their children. In the table above, the respondents got the information about the herbal remedies through their relatives and spouses, given the mean score of 2.1800 to validate this. This view further sustained the findings of Mwangi and Gitonga (2014); Bamidele *et al* (2009); Jegede, 2002).

Similarly, mothers of child-patients expressly perceived the consumption of herbal products for the treatment of childhood of childhood diseases as being safe to a large extent of 2.1800 as recorded in the table above. The perceived safety of herbal medicine as alluded to by some respondents re-affirms the findings of some scholars in the literature (Okoronkwo & Ndu, 2014; Bachinger, 1996; Owumi, 1996; Warren & Green;

1998; Bachinger, 1998; Abdulrahman, Osama, Fahd, Ahmed & Layan, 1016). while the respondents expressed satisfaction with the herbal remedies as indicated by the mean score of 2.3367 compared with the average mean of 2.0, the general opinion about the medicine among the respondents was that it was affordable to them as indicated by the mean score of 2.4967 considered above the average weighted mean of 2.0.

**Figure 1: Respondents' Opinion about the Perceived Causes of Childhood Illnesses**



**Source:** Authors' Field Survey (2012)

Attempts at explaining perceived causes of disease have resulted in diverse views, namely: natural, preternatural and mystical sources (Erinosho, 1998; Owumi, 2005; Osemwenkha, 2000 and Jegede, 2010). It is glaring from figure 2 that a significant proportion of the respondents (50%) attributed occurrence of disease in their children to germs, hereditary and adverse weather conditions, a view subsumed under the natural explanations of disease aetiology. This view also reinforces Louis Pasteur's theory of germs (Mgbemena et al, 2010). On the other hand, those who seemed to explain disease aetiology with recourse to the powers of witchcraft and sorcerer accounted for 36%, while only 10% were of the view that angry ancestors and deities could bring affliction of disease on any people. The primordial belief in the power of witchcraft orchestrating some misfortunes, including disease have become a renewed subject of discourse in the contemporary times (Omorodion, 1993; Mgbemena, 2010; Ezeabasili, 1998; Odebiyi & Ekong, 1982). Some people believe that witchcraft is used by evildoers to cause illnesses in children like measles, headache, diarrhoea, malaria, among others. A study reinforcing this finding shows that the worship of ancestors and deities has gradually found its way into urban centres In Nigeria due to the importance attached to such a practice and the link it is believed to have with the health condition of people (Erinosho, 1998). Although this study did not identify the mother of child-patient as being affiliated with traditional religion, yet it has been pointed out elsewhere that some nominal Muslims and Christians living in urban centres have involved themselves in mixed religious practices in times of persistent challenging health problems (Nwokocha, 2008). This study finding presented in figure 2 sustains a position in the literature that when a naturally-induced illness starts defying treatment using orthodox medicine, explanations attributable to supernatural or mystical forces begin to compel attention (Owumi, 2005). Similarly, Odebiyi & Ekong (1982) have sustained this view ab initio that as long as people tend to define disease within the supernatural context, they will be unwilling to use scientific preventive/curative measures, which do not placate the offended spirits. In short, there is no amount of biomedical technology that can handle spiritually induced and perceived illnesses without any recourse to the spirits behind it.

#### **Test of Hypothesis**

Spearman rank correlation was used to test the two hypotheses formulated and the outcomes were presented below accordingly:

**HO 1:** there is no correlation between the respondents' perceived causes of childhood diseases and their disposition to use herbal medicine in the study area.

**HO 2:** religious affiliations of the respondents have no correlation with their use of herbal medicine in the study area.

**Table 3: Correlation between Perception of Disease Aetiology and Use of Herbal Medicine**

Variables		Perception of Disease Aetiology	Mothers ever used Herbal Medicine
<b>Perception of Disease Aetiology</b>	Correlation Coefficient	1.000	.700**
	Sig.(2-tailed)	.	.000
	N	300	300
<b>Mothers ever used Herbal Medicine</b>	Correlation Coefficient	.700**	1.000
	Sig.(2-tailed)	.000	.
	N	300	300

\*\* .Correlation is Significant at the 0.01 level (2-tailed). **Source:** Authors' Field Survey, (2012).

The belief in the perception of disease aetiology can inform the choice of health care services utilisation. The major sources of explaining causes of illnesses and diseases among African people are the natural, supernatural and mystical forces. In consonance with the objective three of the study, table 3 above presents the results of the investigation showing a positively strong correlation between perceived causes of childhood diseases and use of herbal medicine among mothers of child-patients as reflected in the correlation coefficient of 0.700. The table shows that perception of disease aetiology among the respondent mothers was influenced by the use of herbal remedies in Lokoja metropolis. The resulting correlation coefficient validating the finding was 0.700, interpreted as strongly significant at 1% level (P- Value 0.01). This suggests that mothers of child-patients attributed childhood diseases to natural causations, but still used herbal medicine for their under-five children. In other words, the perception of disease causations had strong positive correlation with treatment pathways. This finding reinforced the positions of some authors, that an average Nigerian believes in the naturally induced occurrence of illness but would attribute explanations to the supernatural source when it persists beyond remedial intervention of treatment (Mgbemena et al, 2010; Ebibola et al; 1997 & Osemwenkha, 2010).

**Table 4: Correlation between Religious Affiliations and the Use of Herbal Medicine**

Variables		Religious Affiliations	Mothers ever used Herbal Medicine
<b>Religious affiliations</b>	Correlation Coefficient	1.000	.646**
	Sig.(2-tailed)	.	.000
	N	300	300
<b>Mothers ever used Herbal Medicine</b>	Correlation Coefficient	.646**	1.000
	Sig.(2-tailed)	.000	.
	N	300	300

\*\* .Correlation is Significant at the 0.01 level (2-tailed). **Source:** Authors' Field Survey (2012).

Every society has a way of explaining certain phenomena outside the domain of science. Religion is one of the tools that is often deployed and invoked in doing so. Religion influences people's worldviews, including the perception of disease causations. In this study, it is viewed as a means, a cultural instrument for the satisfaction of human needs. It is not an end in itself, but a means to some other ends in society. The study, therefore, investigates as an objective, the relationship between the respondents' religious beliefs and the use of herbal medicine in Lokoja metropolis. From table 4, the views elicited from Christians, Muslims and Traditional worshippers reflected that of general acceptability and permissiveness of herbal medicine use among mothers of under-5 children. Similarly, this implies that there was a positive significant relationship between adherents of Christianity, Islam and Traditional religions with respect to the use of herbal medicine as indicated by correlation coefficient of 0.646 at 1% level of significance with P-Value of 0.01. In other words, the data showed that regardless of the religious affiliations and orientations of the respondents, Christians, Muslims and traditional believers did not consider the use of herbal medicine forbidden by their respective religions. It is obvious from the table that religious orientations of the respondent mothers of child-patients did not influence their patronage of herbal medicine. It, therefore, implies that notwithstanding their religious beliefs, good health still remains a desirable virtue among them. The non-influence of religion on herbal medicine use among mothers of child-patients as uncovered in this study aptly sustains the findings of Oyebola (1997); Osemwenkha (2000) respectively.

## 9.6 Conclusions and Recommendations

The study findings revealed among others that, the respondents considered herbal remedies safe for the treatment of their sick children and so expressed satisfaction with the products used. Similarly, the perception of disease

aetiology among the respondents had a significant positive correlation with the utilization of herbal medicine, while religious affiliations and orientations positively influenced the use of the medicine in the study area. The study, therefore, concluded that herbal medicine is an integral aspect of the overall healthcare delivery system and should be promoted for remedial intervention at the outset of diseases. However, orthodox medical practitioners should be concerned with the socio-cultural predictors of the respondents' health seeking behaviour in order to facilitate effective and efficient health care service delivery. This is because Perception of disease aetiology and religious affiliations are predictors of health seeking behaviour. "Cross-system" referral is recommended for herbal as well as orthodox medical practitioners with a view to addressing the catastrophic health challenges of the under-five children holistically.

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