SPATIAL ASSESSMENT OF THE EFFECT OF INCOME ON HEALTHCARE FACILITIES PATRONAGE IN KOGI-EAST SENATORIAL DISTRICT, KOGI STATE, NIGERIA

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ABSTRACT: This study assessed the level of income on health facility patronage in Kogi East, Kogi State, Nigeria. Primary data necessary for this study were collected from patients, health workers and residents of Kogi East through the administration of questionnaires, personal observations and obtaining of satellite imageries for creation of digital health facilities distribution map of the study area, while the secondary sources includes published documents. A total of 400 questionnaires were administered; however, only 395 were returned for analysis. Results were presented in both tables and charts while the hypothesis was tested using Correlation Analysis. Findings from this research revealed that majority of the respondents (58.80%) do not patronize any health facilities due to the high cost of treatment. The study also found that the major illness that affects respondents in Anyigba is Malaria Fever (76.5%); the result also shows 87.5% of the respondents disclosing that money has prevented them from patronizing health facilities. The study further found that the socio-economic characteristics of the residents/patients play a significant role in determining the frequency of visits to healthcare facilities; this is substantiated with the Pearson correlation test result that revealed a significant relationship between patronage pattern and monthly income of the respondents. This research also revealed that the lower the incomes of an individual, the limited access such individual would have to health facilities and vice versa. Given the z-score of 0.288134438445, the distribution pattern of the health facilities does not appear to be significantly different than random, as the healthcare facilities map also support the above claim. It is therefore recommended that efforts should be put in place to improve the socio-economic status of individuals so as to improve their access and utilization of healthcare facilities. Government at all levels as well as the organized private sector should carry out massive public awareness on the importance of health insurance scheme.

KEYWORDS: Healthcare, Facilities, Patronage, Income Level, Kogi East, Nigeria.

INTRODUCTION

Throughout the world, socio-economic status differentials of individuals have a lot of influence on privileges and opportunities enjoyed by society members. The different social and economic positions of individuals and income levels oftentimes hinder them from effective use of healthcare facilities (Esther et al., 2020). According to the World Health Organization (WHO, 1984), health is not merely an absence of disease, but a state of complete physical, mental, spiritual and social wellbeing. Adeyinka, as cited in Omotayo and Samson (2017), posited that health is the output that people desire and not health services (input) per se for the accomplishment of improved standard of living for them. Although the 2008 Demographic and Health Survey (DHS) recorded a slight improvement in maternal and child health indicators compared to the previous surveys, the statistics are still unacceptably high: an infant mortality rate of 75 per 1,000 live births, an under five mortality rate of 157 per 1,000 and a maternal mortality rate of 545 per 100,000 (Nigerian Population Commision, 2008). One of the factors that have contributed to the poor performance of the Nigerian health system is limited access to health facilities.

Health infrastructure or facility is understood in both qualitative and quantitative terms to mean the quality of care and accessibility to healthcare delivery within a country. It is judged by the quality of physical, technological and human resources available at a given period. Physical structure entails the building and other fixed structures such as pipe borne water, good access roads, electricity and so on within the healthcare environments, whilst the technology is about the equipment meant specifically for hospital use, including surgeries. This also includes computer equipment and consumables while human resources comprise the health professionals including doctors, pharmacist, nurses, midwives, laboratory technologist, administrators, accountants and other sundry workers. All these put together form the structure upon which the healthcare delivery is anchored in any society and the determinants of its infrastructure. The influence of socio-economic characteristic cannot be overlook because various studies in the literature indicate an association between factors such as income, education, ethnicity, religion, culture, age, parity and decision-making power to utilization of healthcare facilities around the world (Babalola & Fatusi, 2009; Owoseni et al., 2014; Adeyinka & Olugbamila, 2016).

The need for healthcare facilities, its utilization and access of residents to the available healthcare facilities is very crucial to both the social and economic development of a country. Healthcare services are an important component of the overall health system which has impact on the well-being of residents in a particular location. Yang, George and Mullner (2006) remarked that equitable distribution of healthcare resources is one of the main goals of healthcare facility planning. It is a general consensus that few people are willing to utilize a particular facility as the distance from it increases (Balogun & Alaegor, 2006).

In view of the foregoing, healthcare is of importance to both human and economic development; this is because it had been established that healthy people lead to healthy labour force, which in turn lead to economic growth and eventually economic development. It is on this basis that this work intends to examine the accessibility of health facilities on the basis of level of income across the various residents in Anygiba.

Statement of Research Problem

In spite of the attention given to healthcare service provision over the years from bilateral and multilateral assistance, and government spending on health (26.40 billion naira or 26% of total annual budget for 2004), it has not translated into enhanced health affordability status in the country. Healthcare accessibility has been a subject of numerous research works and inquiry in the country. Several works and researches have been carried out on health care utilization. Isaac (2015) examined available healthcare services in urban southwest Nigeria, the problems inherent in them and households' welfare status. Most of these studies were unable to adequately examine how distribution of income has affected healthcare patronage.

Although there is a dearth of existing research works on healthcare patronage and utilization in the study area especially where income is a determining factor. However, Kogi East is confronted by inadequate healthcare facility, poor state of health facility, uneven distribution of health facility and high rate of poverty due to the socio-economic status of the people living in the area. The inadequate healthcare facility is due to the ratio of healthcare facilities being lower than the population of the study area; poor state of health facility, with most healthcare facilities in Kogi East being understaffed, lacking in the necessary medical facilities and equipment along with the decaying building infrastructure noticed in most of the hospital; and uneven distribution of health facility as some areas within the study areas lack the presence of a healthcare facility. This study however attempted to assess how income disparity among residents of the study area has influenced the level of healthcare facility patronage in Kogi East Senatorial District of Kogi State.

Research Questions

The research work sought to provide answers to the following questions:

  i.   What is the common illness suffered by the people of Kogi East Senatorial Zone?
  ii.   How does socio-economic status influences healthcare patronage by the people of Kogi East Senatorial Zone?
  iii. What are the challenges affecting the patronage of health facilities in Kogi East Senatorial Zone?

Aim and Objectives

The aim of this study is to examine how the level of income has affected the patronage of health care facilities in Kogi East Senatorial District. In order to achieve this aim, the following objectives were set out:

  i.   To identify the common illness suffered by the people of Kogi East Senatorial Zone.
  ii.   To examine the influence of socioeconomic status on healthcare patronage by the people in the study area.
  iii. To evaluate the challenges affecting the patronage of health facilities in the area.

Hypothesis

The following hypothesis was formulated and tested for the study:

H$_{O1}$: There is no significant relationship between income level and health facility patronage in Kogi East Senatorial District.

Scope of the Study

The study covered selected health facilities within Kogi East, comprising private and public health centers. The scope of this research covers how frequently the residents of the study area visits health centers as well as the reasons, motives or purpose for the visit were studied. The occupation/means of livelihood of the inhabitants as well as their average income (monthly) were equally studied. Geographical locational attributes of the health centers was mapped to show their distance biases and distribution pattern. The study covered about eight (8) months.

Justification of the Study

This study will among other things add to the existing body of knowledge as well as scientific research works into the field/area of income disparity among the inhabitants of a society as well as its influence on healthcare patronage. The research may also be used by Government agencies and Non-Governmental Organization (NGO) as well as International Agencies such as the Red Cross, United Nations (UN), and World Health Organization (WHO) and other international organization, for adequate planning and policies formulation or decision making. The research work will equally be beneficial to healthcare providers within the study area.

LITERATURE REVIEW

The review of relevant and related literature was done in accordance with the aim and objectives of this study.

Conceptual Review

Spatial Distribution of Health Facility

Dhanashri and Shinde (2010) examined the spatial distribution of various health facilities and formulate the Composite Health Facility Index using the ranking coefficient method. The accessibility and efficiency of the existing health facilities was evaluated while making future plans for the development of health facilities in the region.

Meenakshi et al. (2011) in their study found that most rural persons seek first level of curative healthcare close to home, and pay for a composite convenient service of consulting cum dispensing of medicines. Non-Degree Allopathic Practitioners fill a huge demand for primary curative care which the public system does not satisfy and are first level access in most cases.

Level of Income and Health Facility Patronage

Income of residents is an important variable in explaining patronage of any social services in any given area. The income is a measure of wealth and will reflect the ability of a household/resident to make decision on the type of healthcare facility to patronize. The type of facility visited, duration of visit and action taken after sickness is a function of their income.

It has been established that an increase in income plays a substantial role in determining the rate at which people patronize the healthcare facilities (Elo, 1992 cited in Chakraborty et al., 2003). This is because the cost of seeking healthcare may include costs of transportation, user fees, medications and other supplies which people who are not earning enough or from poor background may not have the ability to afford such. This is likely to discourage them from patronizing the available healthcare facilities because of the inability to pay for it (Adamu, 2011). Studies have established that income level of households dictates their ability to patronize and pay for available healthcare services (Olawuni, 2008; Adeyinka, 2013; Owoseni et al., 2014).

Most literature works underline the important factors which are necessary for easy access and utilization of healthcare facilities. Awoyemi et al. (2011) put healthcare utilization as the use of healthcare services by people. This level of utilization has been said to be influenced by the following factors some of which include availability, quality and cost of services, as well as social-economic structure, and personal characteristics of the users (Chakraborty et al., 2003; Onah et al., 2009). Moreover, Leive and Xu (2008) asserted that a number of factors have been shown to be potential barriers in assessing healthcare services and these include distance and cost of travel to the health facility, socio-cultural factors and cost of service especially in developing countries of the world. Among all these factors, distance and cost of travel to the healthcare facilities have been considered to be the most important factors affecting the rate at which healthcare facilities are being utilized (Awoyemi et al., 2011). This was manifested in the work of Olugbamila (2016) that accessibility to healthcare facilities is the ability of individuals or communities to obtain healthcare services which have been said to depend on the cost of travel and distance of the healthcare facility to the place of residence (Buor, 2003).

Socio-Economic Status and Health Care

Studies have shown that there is a correlation between residents' social and economic characteristics and their level of patronage of infrastructural facilities such as healthcare facilities (Olawuni, 2008; Riman & Akpan 2012, Owoseni et al., 2014, Olugbamila, 2016). Owoseni et al. (2014) affirmed that the socio-economic status of a country will most likely affect the health situation; generally, the better the economy indicators, the better the health condition of the residents. Furthermore, the influence of socio-economic characteristics cannot be overlooked because various studies in the literature indicate an association between factors such as income, education, ethnicity, religion, culture, age, parity and decision-making power to utilization of healthcare facilities around the world (Babalola & Fatusi, 2009; Owoseni et al., 2014, Adeyinka & Olugbamila, 2016).

Theoretical Framework: The Health Belief Model (HBM)

The HBM was defined as a value expectancy theory applied to factors that influence someone to take prevention. The components included perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cue to action, self-efficacy and modifying factors (socio-demographic variables: age, sex, race, income, etc.). The Health Belief Model formulated by Rosenstock (1966) contains the following elements:

The individual's subjective state of "readiness to take action" relative to a particular health condition, determined by both the person's perceived likelihood of "susceptibility" to the

particular illness, and by his or her perceptions of the probable "severity" of the consequences of contracting the disease.

The individual's evaluation of the advocated health behavior in terms of its feasibility and efficaciousness (i.e., an estimate of the action's potential "benefits" in reducing susceptibility and/or severity), weighed against perceptions of physical, psychological, financial, and other costs or "barriers" involved in the proposed action, and a "cue to action" must occur to trigger the appropriate health behavior; this stimulus can be either "internal" (e.g., perception of bodily states) or "external" (e.g., interpersonal interactions, mass media communications). While it is assumed that diverse demographic, personality, structural and social factors can, in any given instance, affect an individual's health motivations and perceptions, these variables are not seen as directly causal of compliance.

The application of this theoretical framework to this study is that there are major factors that influence patients to seek for prevention from illness in health facilities. They include: socio-demographic variables (age, sex, race, income, etc.) and perception of physical, psychological, financial and other costs involved in taking the proposed actions.

Empirical Review

Mafimisebi and Oguntade (2011) carried out a study on Health Infrastructure Inequality and Rural-Urban Utilization of Orthodox and Traditional Medicines in Farming Households of Ekiti State, Nigeria. They found access to health facilities in the state was 68.9 percent but was higher in urban areas than in rural areas. They also found that urban farmers spent more on both traditional and orthodox medicine than rural farmers.

Eneji, Juliana, Onabe (2013) carried out a study on healthcare expenditure, healthcare status and national productivity in Nigeria. They found that health spending in Nigeria is low and as such there is inequality in healthcare access in Nigeria. They attributed the poor health status in Nigeria to poverty and unemployment, poor living conditions, ignorance and poor health behaviours, scarce health resources and infrastructure, and low government expenditure on health.

Fetus et al. (2014) investigated the relationship between health capital and poverty reduction in rural Cross River State, Nigeria. They used primary data for the study. They found a positive relationship between health capital variables (healthcare demand, accessibility and affordability of healthcare and proportion of household income dedicated to healthcare) and rural poverty reduction. Fetus et al. (2014) also reported inadequate access to modern healthcare practitioners and financial problems as constraints to healthcare service delivery in rural Nigeria.

Research Design

This research adopted a cross-sectional survey design in the collection and synthesis of primary and secondary data as well as the application of ArcMap and SPSS for subsequent data creation, analysis and interpretation.

Sources of Data

In order to achieve the stated objectives of this study, data were obtained from direct field measurement and observation (primary data sources) and from archival or secondary data sources as well.

Primary Sources

Field survey was conducted to establish the spatial location and distribution of healthcare facilities in the study area which was achieved with the aid of a handheld GPS. It involved administration of questionnaires to respondents drawn from various sample neighborhoods.

Secondary Sources

The secondary data sources include base maps, satellite imageries, as well as relevant textbooks, journals, magazines, and newsletters from the library and the internet to complement the primary data source.

Population of the Study

The total population of the healthcare centres in the entire Kogi East Senatorial District consisting of 9 Local Government Area (Dekina, Bassa, Idah, Ankpa, Ofu, Omala, Igalamela, Ibaji, Olamaboro) according to the 2006 Population Census were 1,745,647 in numbers.

The study area was divided into nine (9) zones (Zone A to Zone I) for easy administration of the questionnaires based on the division of the study areas into zones. Below is a table showing the zones and the area with the number of hospitals to be visited.

Table 1: Showing the Nine Zones in Kogi East

Zones	Number of Healthcare Centres
Zone A = Igalamela LGA	174,889
Zone B = Ofu LGA	214,625
Zone C = Ankpa	323,858
Zone D = Omala	133,418
Zone E = Dekina LGA	302,746
Zone F = Bassa	163,634
Zone G = Olamaboro	194,894
Zone H = Ibaji	140,007
Zone I = Idah	97,576
TOTAL	1,745,647

Source: Projected from NPC (2006).

Sample Size Determination

The sample size for this research was derived using the Taro Yamare formular for determining the sample size as demonstrated as follows:

Taro Yamare Formular is mathematically expressed by:

$$n = \frac{N}{N + 1 (e)^2}$$

where:

n = Sample size

e^2 = Confidence level of 95%

N = the total population of the study area

However, using the Taro Yamani formular above to determine the sample size, we have the following computation:

N = the total population of the study area

$$n = \frac{1,745,647}{1,745,647 + 1 (0.05)^2}$$

$$n = \frac{1,745,647}{1,745,647 + 1 (0.0025}$$

$$n = 399.9 = 400$$

Sampling Techniques

As the Kogi East is divided into 9 Local Governments, 44 healthcare centres were selected from 7 local government areas while 48 healthcare centres were selected from Dekina Local Government Area being the largest Local Government and having the highest number of healthcare facilities.

Methods of Data Analysis

Data collected were analyzed using simple descriptive statistics such as frequency distribution, percentages, bar charts and pie charts. The responses were converted to frequencies and percentages, interpreted, and the results were based on the research question used and the formulated hypothesis. Each table was titled with a sub-topic relevant to the question to which response was required. And to ensure that the stated research hypothesis formulated is generally accepted or rejected, the Pearson correlation coefficient, a parametric statistic, was used with the help of SPSS for analysis and interpretation of collected data.

Data Presentation and Analysis

A total of 400 questionnaires were administered; however, only 395 was returned representing 98.5% of the questionnaire while 5 copies of the questionnaires were not returned, representing 1.5%. The total number of questionnaires returned was used in carrying out the analysis.

Table 2: Socio-demographic Characteristic of the Respondents (N=395)

Sex	Frequency	PePercentage%)
Male	185	46.8
Female	210	53.2
Age	**Frequency**	**Percent (%)**
15-24	120	30.3
25-34	113	28.6
35-44	99	25.1
45 and above	63	15.9
Marital status	**Frequency**	**Percentage (%)**
Single	160	40.5
Married	225	56.9
Divorced	10	2.5
Occupation	**Frequency**	**Percentage (%)**
Civil Servant	122	30.8
Student	90	22.7
Trader	80	20.3
Healthcare worker	88	22.2
Others	15	3.8

Source: Field work, 2023

Table 2 indicates that a total of 184 of the respondents are males (representing 46.8%) while 210 respondents are females (representing 53.2%). This indicates that the larger percentage of respondents are females. This shows that there are more females who patronize or visit healthcare facilities than males.

Table 2 shows that 120 respondents are between 15 and 24 years old representing 30.3%, 113 respondents are between 25 and 34 years (28.6%), 25.1% of respondents are between 35 and 44 years while 15.9% of the respondents (representing 66 people) are above 45 years old. This is to ascertain that the larger percentages of the respondents are middle aged and that the least percentage of the respondents are old people (16.8%). This result agrees with the research carried out by Oluwatayo (2015), where he observed that most of the respondents in his study on Healthcare Service Delivery System and Households' Welfare Status in Urban Southwest Nigeria were still young and in their active working age, with a mean of 45 years.

Table 2 shows that 56.9% of the respondents are married, 40.5% (representing 160 respondents) are single, while 2.5% (representing 10 respondents) are divorced. This shows that the majority of the respondents are married, while the least percentage of respondents are divorced. This result agrees with the work of Adamu (2011) on utilization of Medical Health Centres in Nigeria; it asserted that it is widely expected that women who are working and earning money will have greater financial independence and ability to pay for healthcare services.

Table 2 shows that 30.8% (representing 122 respondents) are civil servants, 22.7% of the respondents representing 90 people are students, and 80 respondents (20.3%) are traders and 88 (22.2%) respondents are healthcare workers, while 3.8% of the respondents falls under other

occupation. This shows that the highest percentages of respondents (28.2) are civil servants, followed by students (24.9%), while the least percentage of respondents is both traders and healthcare workers, which is if the respondents who fall under others are not considered.

From Table 2, it can also be deduced that there is a large number of students in the study area due to the town being an academic center.
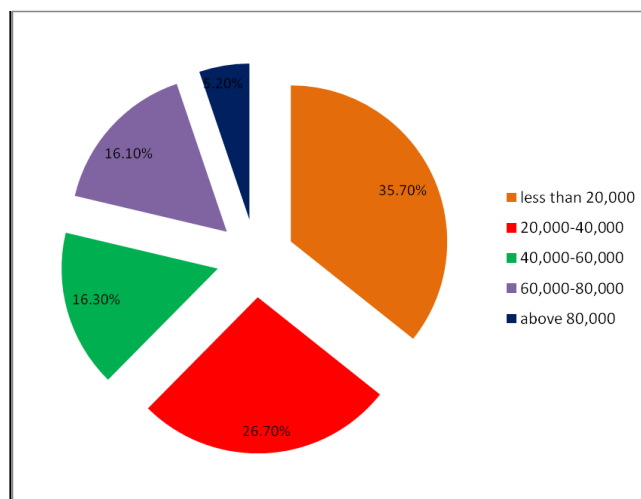
Assessment of the Level of Income and its Effects

Figure 1: Monthly income of respondents in percentages

Source: Field work, 2023

The income level of the respondents according to the survey carried out shows that the majority of the respondents (35.7%) earn less than N20,000 per month, followed by 26.7% who earn between N20,000 and N30,000 per month. According to this survey, 16.38% of the respondents earn between N40,000 and N60,000 per month. This figure is followed closely by the respondents earning between N60,000 and N80,000 (16.1%); 5.2% of the respondents (representing the least percentage) earn above N80,000 per month. This figure further shows that there was a general low level of income in the study area.

Table 3: Common Disease/Illness That Affects the Respondents

Common Illness	Frequency	Percentage
Malaria	274	69
Cholera	47	12
Pneumonia	35	9
Diarrhoea	22	6
Others	17	4

Source: Field work, 2023

Table 3 shows that the major sickness that was prevalent in the study area was malaria, as 69% of the respondents (representing 274 people) picked malaria as the major illness affecting them, while 47 people (12%) indicated that cholera is the major illness affecting their household. Thirty-five respondents (9%) picked pneumonia as the major illness affecting their household, 22 (6%) of respondents picked diarrhea, while the remaining 17 (4%) of the respondents account for other ailments respectively.

Healthcare Facility Patronage

Table 4: Rate of Health Facilities Patronage by the Inhabitants

Rate of Patronage	Frequency	Percentage (%)
Yes	370	93.6
No	25	6.3
Total	**395**	**100.0**

Source: Field Research, 2023

This result above shows that 370 respondents (representing 93.6%) disclosed that they visit healthcare facilities in search of medical cares. It further invalidates the report released by the National Bureau of Statistics in 2005 which stated that in Nigeria very few members of households cared to consult any health provider in a two-week period. Only 7.64% made any formal consultation. However, 25 respondents (representing 6.3%) do not patronize healthcare facilities. These 25 respondents further stated that the following reasons are responsible why they do not patronize health facilities:
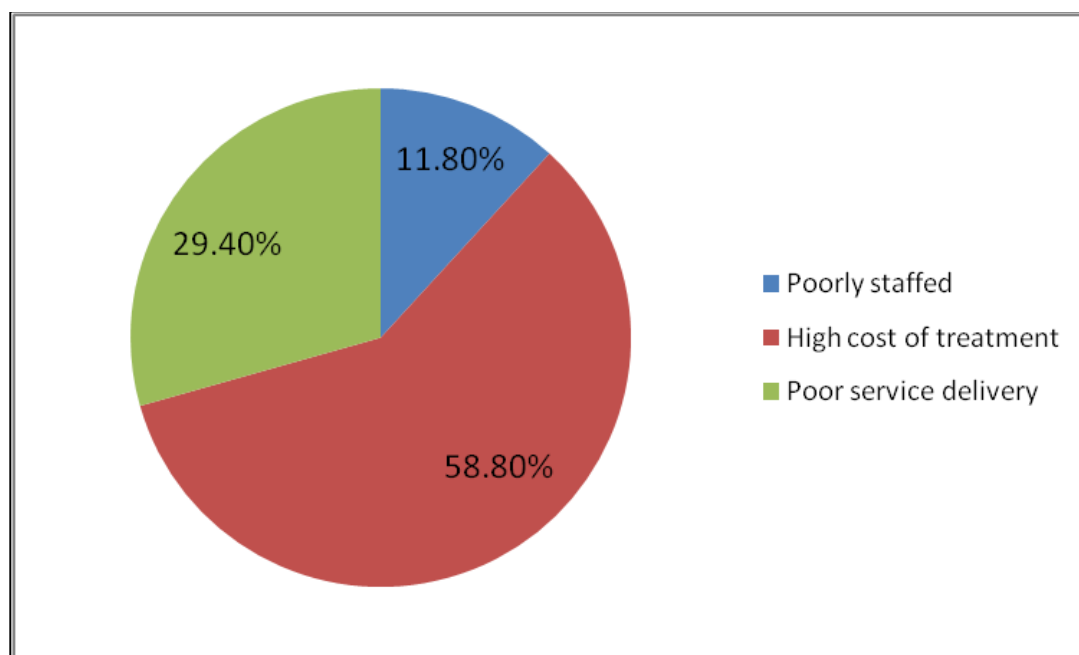

Figure 2: Respondents reasons for not patronizing health facilities

Source: Field work, 2023

From the result obtained in Figure 2 above, it can be deduced that 58.80% of the respondents do not patronize healthcare facilities due to the high cost of treatment, 29.40% due to poor service delivery, while 11.80% do not patronize health facilities due to poor or inadequate staff. The high percentage of respondents who picked high cost of treatment as the reason for not patronizing health facilities could be linked to the high percentage of low income earners in the study area.

Choice of Patronage of Healthcare Facility

Table 5: Healthcare Facility Choice of the Respondents

Nature of facilities	Frequency	Percentage (%)
Public	245	62
Private	80	20.3
Both	70	17.7
Total	**395**	**100.0**

Source: Field Work, 2023

The result obtained from this research (see Table 4) shows that the majority of the respondents patronize public health facilities (62%) (Representing 245 respondents), 20.3% of the respondents patronize private health facilities, while 17.7% (representing 70 respondents) patronize both public and private healthcare facilities in the study area. The research further shows that several factors are responsible for why the respondents choose the various health centers. The major factors are illustrated in Figure 3:
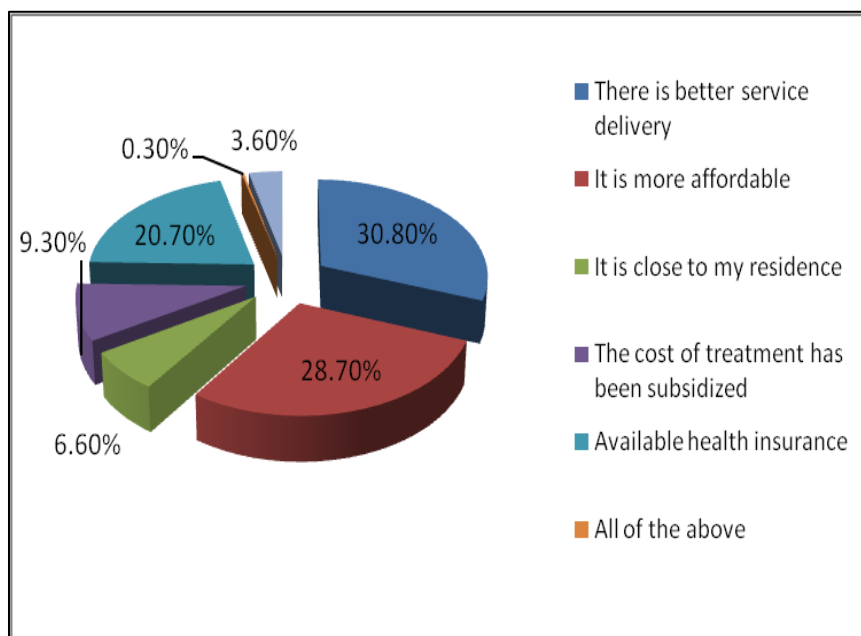

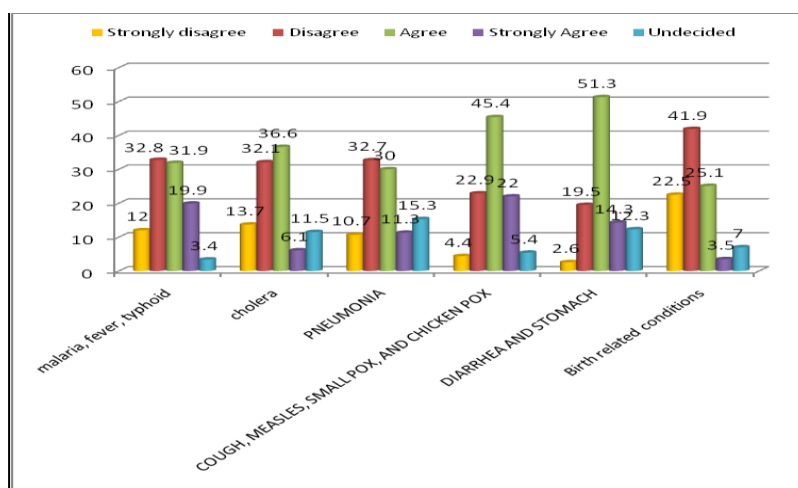**Figure 3: Reasons for respondents' choice of the health facility**

Source: Field work, 2023

From the result above, 30.8% of the respondents choose public health facilities because there is better service delivery, 28.7% and 9.3% are due to its affordability and subsidized cost of treatment respectively, while 20.7% patronize health facilities because there is available health insurance. The research found that the majority, that is, 222 (72.3%) of the respondents usually obtain care from government-owned facilities. However, 60 (19.5%) of the respondents usually obtain care from private hospitals while 25 (2.9%) of them utilize patent medicine shops usually for their health care needs.

Cost of Treatment of the Various Health Conditions

Figure 4: Cost of treatment for illness

Source: Field work, 2023

The result obtained from Table 3 shows that the most prevalent illnesses that affect the majority of the respondents were malaria and typhoid fever. This study went further to ascertain the cost of treatment for the major illness that affects the respondents, showing that 32.8% of the respondents disagreed that the treatment for malaria, fever and typhoid is affordable, 12% strongly disagreed that the treatment is affordable, 19.9% strongly agreed that the cost of treatment is affordable while 31.9% of the respondents simply agreed that the cost of treatment for malaria is affordable. The implication of this result is that a total of (32.8%+12%) 44.8% of the respondents disclosed that the cost of treatment for malaria, fever and typhoid is not affordable in relation to their level of income.

Figure 4 also shows that going by the income level of the respondents, the highest percentage of respondents agreed that the cost of treatment for birth-related conditions is high $41.9% of the respondents). Another 22.5% of respondents strongly disagreed that the cost of treatment for birth related conditions is affordable. 25.1% and 3.5% of the respondents respectively however agreed that the cost of treatment for birth related conditions is affordable. The highest percentage of respondents generally agreed that the cost of treatment for pneumonia, chicken pox and diarrhea is affordable.

Table 6: Distribution on How Income has Prevented Healthcare Patronage

Variable	Frequency	Percentage
Yes	346	87.5
No	49	12.4
Total	**395**	**100.0**

Source: Field work, 2023

This research also verified if income/money has ever prevented the respondents from accessing health facilities. The result shows that a total of 346 people (representing 87.5%) of the respondents disclosed that money has prevented them from patronizing health facilities. However, 49 (12.4%) people revealed money has never prevented them from accessing healthcare centres.

The research however points to the alternative means that respondents who pick the yes answer resort to solving the healthcare needs. Figure 5 gives a breakdown of the alternative measures respondents resorted to.
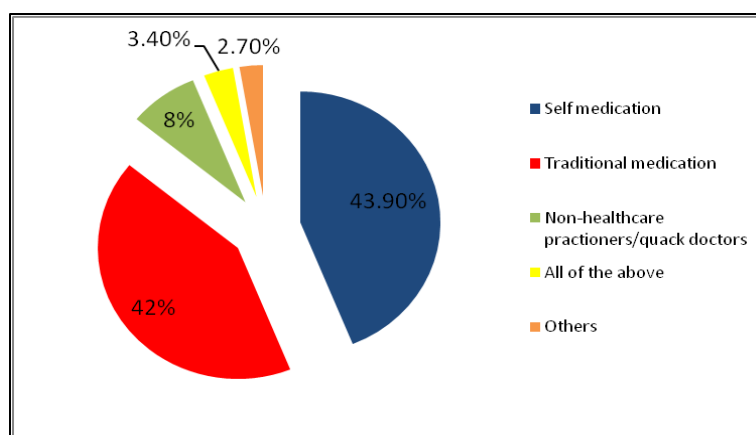

Figure 5: Alternative measures respondents resorted to

Source: Field work, 2023

Figure 5 shows that the highest percentage of respondents (43.9%)disclosed that they resorted to self-medication as an alternative to healthcare patronage, 42% of respondents disclosed that they resorted to traditional/herbal medication, 8% of respondents resorted to non-healthcare practitioners/quack doctors while 3.4% of the respondent indicated that they subscribed all of the alternative measures.

The result of this research also confirmed the work carried out by Mafimisebi and Oguntade (2011) in their study on Health Infrastructure Inequality and Rural-Urban Utilization of Orthodox and Traditional Medicines in Farming Households of Ekiti State, Nigeria. They found that access to health facilities in the state was 68.9 percent but was higher in urban areas than in rural areas. They also found that urban farmers spent more on both traditional and orthodox medicine than rural farmers. According to the study, 91.7 percent of the household heads in the rural areas prefer traditional medicine for the treatment of ailments that are not life-threatening.

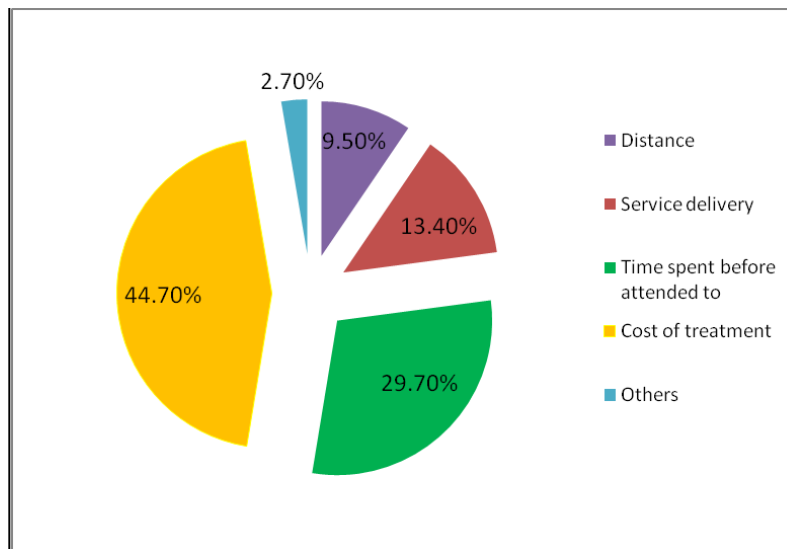**Major Challenges Respondents Face in Healthcare Facility Patronage**

Figure 6: Major challenges residents face in healthcare facility patronage

Source: Field work, 2023

From the result obtained in Figure 6, 44.70% of respondents confirmed that the major challenge they face in healthcare patronage is the cost of treatment, 29.7% of the respondents (representing 109 people) said that the time spent before being attended to is a challenge, another 13.4% of the respondents indicated that service delivery is a major challenge they face in health facility patronage, while 9.5% of the respondents opined that distance is the major factor they face in patronizing health facility.

The implication of this result is that cost of treatment for medical conditions is the major challenge that the respondents face in the study area; the perception of the cost of treatment is dependent on the level of income of the respondents.

Hypothesis Testing

The hypothesis formulated for the study was tested as follows:

H_0: There is no significant relationship between level of income and healthcare facilities patronage.

H_1: There is a significant relationship between income level and health facility patronage.

Table 7: Cross-tabulation of Monthly Income and Health Facility Patronage

| Monthly income (₦) | Does your household patronize any health facility | | Total |
	Yes	No	
less than 20,000	131	0	131
	39.8%	0.0%	36.2%
20,000-40,000	88	9	97
	26.7%	27.3%	26.8%
40,000-60,000	36	24	60
	10.9%	72.7%	16.6%
60,000-80,000	55	0	55
	16.7%	0.0%	15.2%
above 80,000	19	0	19
	5.8%	0.0%	5.2%
Total	**329**	**33**	**362**
	100.0%	**100.0%**	**100.0%**

Source: Field Work, 2023

Pearson Correlation Test

Symmetric Measures		Value	Asymptotic Standardized Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.118	.028	2.255	.025[c]
Ordinal by Ordinal	Spearman Correlation	.175	.031	3.376	.001[c]
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

Researchers' Computation, 2023

Decision Rule

The decision rule on the formulated hypothesis for this study states that when the Pearson approximate significance (p-value) is less than the significance level ($\alpha = 0.05$), i.e., $0.025 < 0.05$, we reject the null hypothesis which states that there is no significant relationship between level of income and healthcare facilities patronage, and accept the alternative hypothesis which states that there is a significant relationship between the level of income and health facilities patronage. This result indicates that there is sufficient evidence to conclude that there is a significant relationship between the level of income and health facility patronage.

DISCUSSION OF FINDINGS

This study assessed the level of income on health facility patronage in Kogi East, Kogi State, Nigeria and it shows that the majority of the respondents (35.7%) earn less than N20,000 per month, followed by 26.7% who earn between N20,000 and N30,000 per month. According to this survey, 16.38% of the respondents earn between N40,000 and N60,000 per month. This figure is followed closely by the respondents earning between N60,000 and N80,000 (16.1%) and 5.2% of the respondents (representing the least percentage) earning above N80,000 per month. This figure further shows that there was a general low level of income in the study area.

The study discovered that the major sickness that is prevalent in the study area is malaria, as 69% of the respondents (representing 274 people) picked malaria as the major illness affecting them, while 47 people (12%) indicated that cholera is the major illness affecting their household. Thirty-five (35) respondents (9%) picked pneumonia as the major illness affecting their household, 22 (6%) of respondents picked diarrhea, while the remaining 17 (4%) of the respondents account for other respective ailments. This result indicates that the highest percentage of respondents are affected by malaria, while the least percentage of respondents are affected by diarrhea and stomach ache. The result agrees with the work carried out by Akpomuvie (2010) on poverty, access to healthcare services and human capital development in Nigeria in which he opined that malaria is the most common illness that affects Nigerians in the past one year.

The study also revealed that 58.80% of the respondents do not patronize healthcare facilities due to the high cost of treatment, 29.40% indicated that they do not patronize healthcare facilities due to poor service delivery, while 11.80% do not patronize health facilities due to poor or inadequate staff. The high percentage of respondents who picked high cost of treatment as the reason for not patronizing health facilities could be linked to the high percentage of low income earners in the study area. This result also agrees with the research work carried out by Omotayo (2017). The study shows that income is a measure of wealth and will reflect the ability of a household/resident to make decisions on the type of healthcare facility to patronize. The research further disclosed that the type of facility visited, duration of visit and action taken after sickness is a function of their income.

The research work further found that the majority, that is, 222 (72.3%) of the respondents usually obtain care from government-owned facilities. However, 60 (19.5%) of the respondents usually obtain care from private hospitals while 25 (2.9%) of them utilize patent medicine shops usually for their healthcare needs. The result of this research further confirms the work carried out by Uchendu et al. (2013) who assessed the factors influencing choice of healthcare and opined that choice of healthcare providing facility is an important decision that involves the interplay of several factors such as quality of services provided by the health care facilities.

CONCLUSIONS

The results obtained in this study support the following conclusions:

There is variation in patronage patterns of healthcare facilities in the study area; this pattern is influenced by the cost of treatment and the level of income of patients and residents of the area. Although respondents would prefer to patronize private healthcare facilities due to the quality

service delivery rendered there, the cost of accessing treatment in private institutions is usually expensive, which would result in residents with low income seeking medical attention from public health institutions with cheaper cost of treatment but lower service delivery, or it may result to some other residents resorting to other forms of medical treatment such as self-medication, traditional/herbal treatment, and patronizing quack doctors. Consequently, it can be concluded that the lower the income of an individual, the more limited their access to health facilities and vice versa.

RECOMMENDATIONS

In light of the conclusions reached, the following recommendations are considered appropriate:

a. Government's commitment in terms of public expenditure to health as a percentage of GDP should be increased.

a. Governments at both federal, state and local government level as well as the organized private sector should carry out massive public awareness on the importance of health insurance schemes.

b. Efforts should be put in place to improve the socio-economic status of individuals through multi-sectoral development activities such as micro-credit facilities and provision of employment opportunities which is believed will invariably improve their access and utilization of healthcare facilities.

c. There should be a ban on the financing of government officials going overseas for medical treatment. This way, the government would be serious about investment on health facility infrastructure within the country.

d. Improved partnership and synergy among the stakeholders namely public, private, household and communities, research and training institutions.

e. State health insurance: Policymakers and political actors need to devise health care reforms to address the lack of social and financial protection for the poor and vulnerable populations.

Competing interests

The authors declared that they have no competing interests.

Authors' Contributions

OSO and **GGO** drafted the manuscript and carried out the research work.

TIG supervised the research work.

JOO proofread the manuscript.

All authors read and approved the final manuscript.

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