AN ASSESSMENT OF HEALTHCARE FACILITIES IN SOME SELECTED SLUM AREAS OF MINNA, NIGER STATE

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MSUD/CHSUD/2018/8103

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A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGERIA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE MASTER IN SUSTAINABLE URBAN DEVELOPMENT (M.SUD), CENTRE FOR HUMAN SETTLEMENTS AND URBAN DEVELOPMENT (CHSUD), FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGERIA

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ABSTRACT

This research highlighted areas of intervention in addressing healthcare shortage in slum areas through the assessment of data on the types and nature of healthcare facilities, and the challenges of healthcare facilities by the use of structured questionnaires, interviews, physical observation and image capturing with digital camera. Purposive sampling technique was employed to select a total of 77 patients across the facilities which were interviewed. Data acquired were analysed using descriptive statistics and the result revealed that the primary healthcare facilities in slum settlement were in good condition though in need of some little maintenance. The six (6) sampled facilities were not evenly distributed with only two service radii intersecting with each other. A 100% coverage of the neighbourhoods by the needed health facilities is not achieved by the present distribution at both 500m and 1000m radius. At 500m radius (walkable distance), only 10-25% of patients and residents of the sampled neighbourhoods could use the facilities; at 1,000m (1km), the usage level increased to 60-85% (only Kpakungu has less than 50%) – hence, over 68% of residents travel for about a kilometre to access and use the facilities with the remaining left outside this service radius. The facilities and the patients that use them are still contending challenges of bad roads especially during the raining season, traffic congestion, absence of emergency facilities like ambulance and emergency room, inadequate number of facilities, time wasting, and inadequate space for out-patients to use. Overall, about 45% of patients and users of the facilities observed that PHCs seriously lack adequate equipment and Staff. The study came up with recommendations: the provision of more primary healthcare Staff and facilities at strategic locations – Kpakungu is presently having less than 50% of the needed facilities, each of the sampled neighbourhoods will require 2-3 additional facility to achieve satisfactory coverage within 500m radius. Encourage proper maintenance and utilization of the facilities – only 28% have tarred road access, extensive expansion of the small facilities to accommodate more out-patients and space for other activities, provide adequate portable water and efficient electricity power in order to advance the services of the primary healthcare system to achieve health related Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC).

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Health is defined in preparing for the Ottawa Charter of 1986 by the World Health Organization (WHO) as an individual's ability to actualize objectives, satisfy needs, and cope with the environment. As a result, health is a resource or means for daily existence rather than the goal of living (Brüssow, 2013). The viability and sustainability of any country's social growth and economic is dependent on its citizen's access to proper healthcare.

In order to enhance health results and to improve the chance of addressing the Sustainable Development Goals (SDGs), Nigeria in 2014, considered assuming Universal Health Coverage (UHC) as its official policy targeted at improving access to quality healthcare services for all her populace without financial destitution (Makinde, Sule, Ayankogbe, & Boone, 2016). UHC refers to a situation in which health services are available to all people who require and receive them without causing undue financial hardship (Makinde, Sule, Ayankogbe, & Boone, 2016). This is a somber topic, because the importance of quality and easily accessible health care in responding to crises in health service demand cannot be overstated (Oyekale, 2017).

However, adequate facilities are mandatory by any healthcare system to augment service delivery in an effective, efficient and appropriate style. Such facilities define the service quality rendered based on their relatively adjudicated quantitative and qualitative features. Aside from the physical appeal of healthcare facilities, their general satisfactoriness would be evident from the concept of workability of human resources and supplementary technological, pragmatism

of transport systems, water infrastructure, electricity interconnection, e-readiness of the framework, and flexibility to regulate and be reintegrated with various future changes as a lot of advanced innovation reveal, among others (Oyekale, 2017). Essential necessities are now lacking in a number of aid facilities in many developing countries.

Owoyele (2014) was of the view that inadequate access to healthcare facilities and services are responsible for most of the environmental health complications witnessed especially in the developing countries of which Nigeria is not an exception. The poor transition of the healthcare facilities and services from the city to the agricultural settlements has made the slum regions left out at the worldwide level in addition to the micro-level (Jayaweera *et al.*, 2018; Liao, Cade & Behdad, 2021). Slum-dwellers stay in an unhygienic and un-sanitized surrounding on a normal basis (Zaman & Dutta, 2018). Health is an issue, especially for people living in slums in every state or country. The inadequate health resources at their disposal make their lives vulnerable to disease risks control (Zaman, Goswami, & Hassan, 2018) that could sometimes result into disease epidemic (Wells *et al.*, 2019; Ozturk *et al.*, 2020; Wilkinson, 2020; Pawson, 2021).

The city of Minna consisting of about twenty-five residential neighbourhoods of which seven are categorised as slum settlements due to the poor human living conditions (Jemaku, 2007; Musa, 2007), the quality of dwellings and lack of access to basic services and infrastructure like sanitation and healthcare in the areas. The adequacy of healthcare resources at the disposal of the residents to reduce their vulnerability to disease risks and increase control within the neighbourhoods of Minna especially the slum area is perceived to be similar to any other city in the developing nations (Jemaku, 2007; Umar and Kawu, 2011; Dodman *et al.*, 2013).

The proper spreading of healthcare facilities in a way that guarantees equal access and satisfactory spread to all citizens especially the urban poor or slum settlers is very important. The first-rate factor to healthcare and its existence in any country is her inhabitant's access to decent healthcare services. Therefore, the requirement for a balanced distribution of healthcare facilities as an influence supporting the populace of municipalities (Fotso, Ezeh & Oronje, 2008; Luz *et al.*, 2015). The overall resolution of the study is to highlight areas of intervention in addressing healthcare shortage in the slum areas in Minna. This is bent on assisting the government to enhance healthcare delivery system and in turn the living standard of the average citizen or resident of Minna.

1.2 Statement of Research Problem

Nigeria, with a populace of over 180 million, is one of the most populated countries but with weak healthcare standards (Ugo, *et al*., 2016). Despite sizeable investments, the nation nevertheless has inadequate healthcare delivery infrastructures, terrible quality healthcare services, and inconsistently allotted human useful resource capacity. These are reflected in the nations' healthcare quality rating of 187 out of two hundred nations and its listing amongst nations with a number of the worst health signs around the world (Ugo, et al., 2016).

Although the country has an estimated 23,640 health facilities, 85.5 percent of which are primary health care facilities, these facilities serve the bulk of the population but fail to offer basic and lucrative services particularly on the outskirts of cities (Muhammed, 2011; Dodman *et al.*, 2013). This is due to a variety of causes, including inadequate health-care facilities, insufficient staffing, a lack of clearly defined responsibilities and functions, insufficient political engagement, and unaccountability (Ugo, et al., 2016).

Similarly, Nwakeze and Kandala (2011) stated that the healthcare services provided in public facilities which are persistently low in quality and, the persistent inadequacies has made the private sector an inevitable choice for consumers of healthcare and other essential urban facilities in Nigeria (Musa, 2007; Bahago, 2008). However, the state has little or no control over the clinical activities of the private sector providers (Nwakeze & Kandala, 2011). The result was the near-collapse of acute hospital services, characterized by run-down physical structures, frequent drug shortages and the influx of highly skilled but de-motivated medical specialists.

According to the OECD/WHO (as cited in Nwakeze and Kandala, 2011), inconvenient opening and or closing hours, lack of physical access, Inadequate and or broken equipment and dirty facilities, hidden costs of getting treatment, behaviour of medical and health workers, absenteeism and or shortage, quality of services and poor availability of medicines are factors that can affect demand for health services (Smit *et al.*, 2011a; Porio, 2015; Hawas and Hawas, 2016; Goodwin, 2020). Hidden costs include the opportunity cost of travel time, waiting for treatment and buying medication, and the cost of transportation, medication, and informal payments required of health workers and other personnel (Nwakeze and Kandala, 2011). The majority of the obstacles to health-care delivery originate from labour shortages and distributive inequities. In Nigeria, this is a one-of-a-kind occurrence. This is due to the fact that the majority of health workers, particularly doctors in the public sector, also give services to the private sector (Nwakeze & Kandala, 2011).

Afsana and Wahid (2013), stated that inadequate attention has been given to the delivery of basic healthcare to slum-dwellers and access to health care for the populations of urban poor

is disheartening. It has been further reported that the poor health of urban slum dwellers was further aggravated by low-quality and unlicensed private clinics, underserved populations seeking healthcare from untrained informal providers and unchecked over-the-counter drug selling (UN-HABITAT, 2003; Ziraba *et al.*, 2009; Peprah *et al.*, 2015).

The primary healthcare system in Minna city is characterised by facilities shortage and distributional imbalance and the centres faces problems of: inadequate facilities and equipment, inadequate potable water supply, lack of understanding from relatives, poor electricity supply and as a consequence, there are delays in services rendered. These shortcomings and challenges are all acting at different levels and impacting on people's health and livelihoods at diverse intensity. Hence, the need to assess the healthcare facilities in the slum areas of Minna with the view of identifying intervention areas that needs addressing.

1.3 Aim and Objectives of the Study

1.3.1 Aim of the Study

The aim of this study is an assessment of healthcare facilities in some selected slum areas of Minna, Niger State.

1.3.2 Objectives of the Study

The objectives of the study are to:

i. Examine the nature of healthcare facilities in slum settlement of Minna.
ii. Evaluate the type of healthcare facilities.
iii. Examine the challenges of healthcare facilities.

1.4 Research Question

a. What is the state of the healthcare facilities in the selected slum settlements?

b. What are the types of healthcare facilities available?

c. What are the challenges facing healthcare delivery?

1.5 Scope of the Study

The research focuses on the government owned healthcare facilities within Five (5) out of the Seven (7) major slum Neighbourhoods within the city of Minna. These neighbourhood are; Bosso Town, Dutsen Kura Hausa, Dutsen Kura Gwari, Fadikpe and Kpakungu. The study also identified and assessed the other types of healthcare facilities presently in use within these neighbourhoods.

1.6 Justification of Study

Many researches surrounding health of the city populace, healthcare service and healthcare facilities have been commenced from fluctuating viewpoints. Some of these revisions orbited round the dependence of the sustainability and the viability of the economy on the healthcare sector (Eme, Uche & Uche, 2014; Nwakeze and Kandala, 2011). The common tendency with these revisions is that good health is vital to intensification productivity of labour.

However, as cities in Niger State, including Minna, grow, their management and the provision of services such as health care are also becoming an increasing challenge, particularly given the increasing share of poor people in these places, as well as the fact that the growth pattern has fully outstripped the capacities of the current basic services. There are various other issues, such as the issue of inadequate housing, poor hygiene and environmental conditions, and insufficient access to resources and utilities, all of which are common in slum settlements.

Studies, including Owoyele (2014) and Owoyele, Ajobiewe, Idowu, Musa, & Ohadugha in (2015) have pointed out that most health problems, especially in urban centres in emerging nations, are due to an inadequate access to healthcare facilities and inequalities in the spatial location and distribution of healthcare centres and have thus not only become a critical health threat to the well-being of city dwellers, but also of development and productivity concern (Ridderström, 1999; Mohamed, Diamond-Smith and Njunguru, 2018; Venugopal *et al.*, 2020).

Numerous reasons have been mentioned as the reasons for inequality in distribution health facilities by some studies. Indifference of locational problems and the costs of implementing a specific spatial form of health care service conveyance amongst others, have been identified as the reasons for distributional imbalance in many developing countries, Nigeria inclusive (Owoyele, Ajobiewe, Idowu, Musa, & Ohadugha, 2015). Studies by Ademiluyi & Aluko-Arowolo, (2009); Eguagie & Okosun, (2010) have also identified that health guidelines generally aim to provide the basic infrastructure and adequate workforce to consistently provide health care to a skyrocketing populace at the primary, secondary, and tertiary levels (Dodoo, Zulu and Ezeh, 2007; Jiang *et al.*, 2013). But, little has been done to promoted easy access for the end users as emphasis was dwelled much on relationship between health facility, population and, the adequacy based on performance toward assessing the progress in determining the intervention of public health facilities to the communities.

There is an increasing effort globally at increasing access to health services and addressing the root cause of distributional imbalance of health facilities. Most of these efforts in Minna had been undertaken majorly by politicians, influenced by traditional leaders with no technocratic approach which is also evident in the developing countries. The role and effectiveness of urban

land-use planning and circle of influence as means of increasing access to and equal distribution of health facilities has not been adequately explored. Few studies (Zaman & Dutta 2018; Afsana & Wahid 2013) had sought to understand the healthcare facilities situations within slum settlements as regard distribution and accessibility, with most undertaken in foreign countries while researches are still evolving within the national context. This research consequently, not only make available a comparatively new viewpoints to the resolution healthcare facility shortage within slum neighbourhoods but also accentuate the role of unproductive land use planning and circle of influence as contributing influence to urban ill-health.

The research therefore, has the possibilities to categorise the effect of the nature and type of healthcare facilities, challenges facing healthcare delivery to residents as determinants of the degree and level of accessibility, affordability and distribution of these facilities and thereby refocusing attention on the need for more effective and deliberate efforts in the location of facilities in urban slum neighbourhoods as means of increasing access to basic and primary healthcare.

1.7 The Study Area

Minna is the capital and the administrative headquarters of the Niger state, it is a city in the Northcentral zone and one of the six geopolitical zones of Nigeria. The municipality of Chanchaga is the seat of the state of Niger, which belongs to the 36 states of Nigeria. (Facts and Figures from the State of Niger, 2009). Minna makes up about 0.10 percent of the total area of the entire state of Niger and also represents 0.0082 percent of the total area of the country (Jemaku, 2007; Musa, 2007; Bahago, 2008). The city is located in the eastern part of

the state and is bordered by Shiroro L.G.A (to the north), Wushishi L.G.A (to the west), Katcha L.G.A (to the south) and Paiko L.G.A (to the east). Minna had a projected population of 201,429 in 2006, a population density of 2,744 per square kilometre, it is the 28th largest city in Nigeria and also the 5th largest city within the state by population size (NPC, 2006). See Figure 1.1.

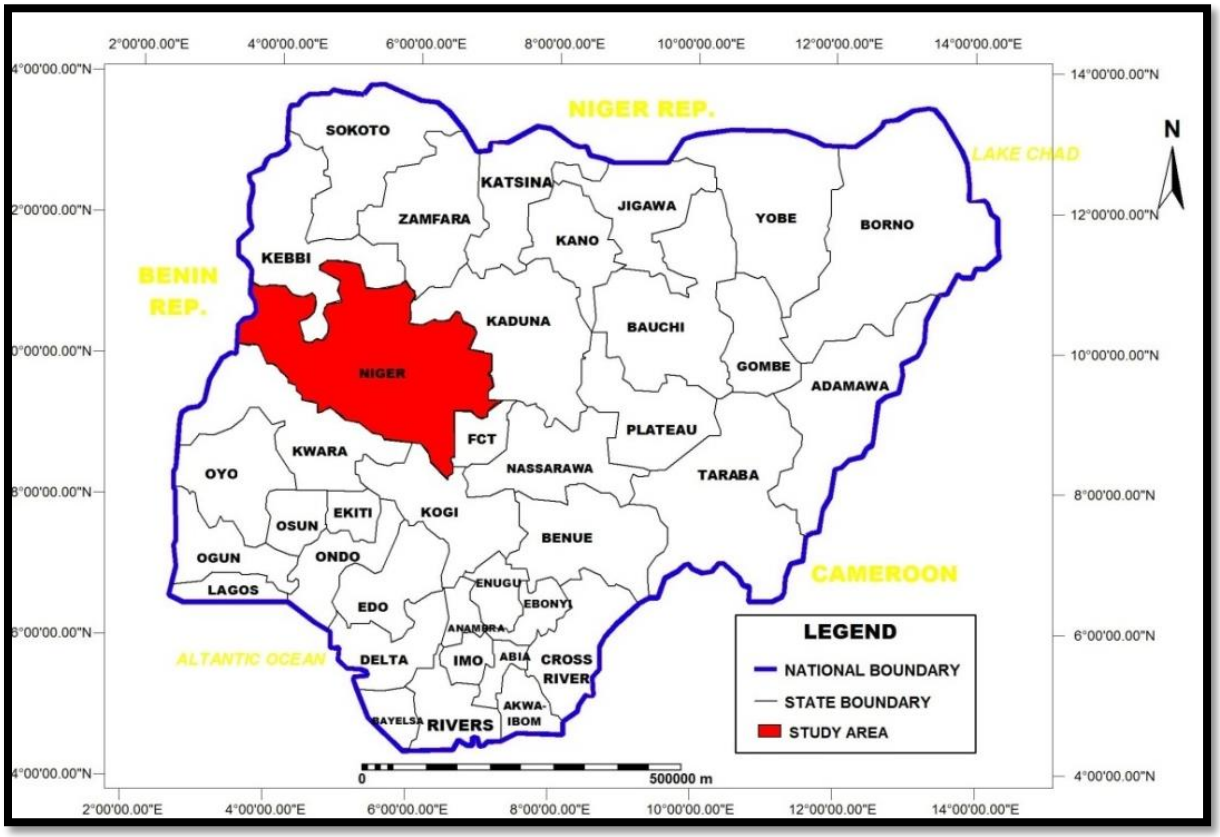

Fig 1.1: Location Map for Nigeria showing Niger state
Source: Oguh et al (2019)

1.7.1 Historical Background of Minna

The city's name, “Minna” is derived from the Gwari term "Minna," which means "to spread the fire." In Gwari, the phrase is derived from a traditional celebration that is held every year at New Year (Lock,1980). However, before the city was expanded and converted into the new

and contemporary Minna, it went through four main metamorphic phases of growth. First, in 1905, the train connecting the northern portion of the country with the western part of the country that runs through Minna was built (completed later in 1911). Second, it was the development of an airstrip in 1929, followed by the construction of the Bosso dam in 1949, which served as a water source for the population. The choice of Minna as the capital of the newly formed state of Niger in February 1976 resulted in a change in the city's administrative status. As a result of the transition, today's Minna has essentially laterally expanded the main streets from Bosso in the north to Chanchaga in the south, and encompasses the majority of the services and amenities that are limited to most other Nigerian cities (Jiya, 1977; Bussu & Kawu, 2007; Ndayako & Kawu, 2011).

1.7.2 Location of Minna

The metropolis of Minna is located at latitude 9 37'' north and longitude 6 33" east on a geographical base of the undistinguishable complicated of a layer of in the main magnetite and gneiss and covers approximately 73.4km^2 (NSBS, 2010 & 2012). Situated along the eastern part of Niger state, Minna shares boundary with Shiroro L.G.A. in the North, with Katcha L.G.A. in the South, at the Eastern part of the city, it is bounded by Paiko L.G.A. at the East, and at the West by Wushishi L.G.A. respectively. See Figures 1.2 & 1.3.

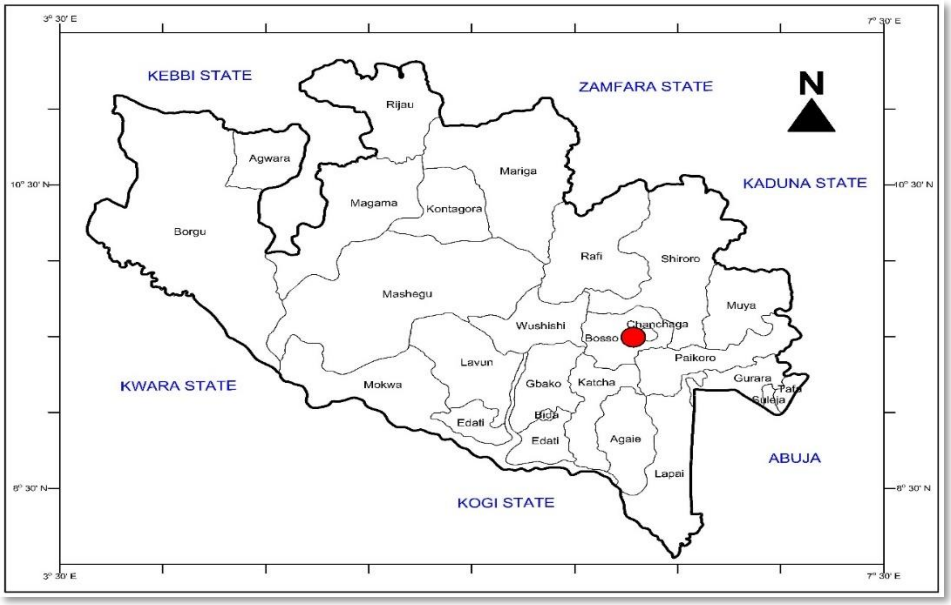

Fig 1.2: Location Map for Niger state showing Minna
Source: Idowu, Bako & Aduloju, 2020 (Modified).

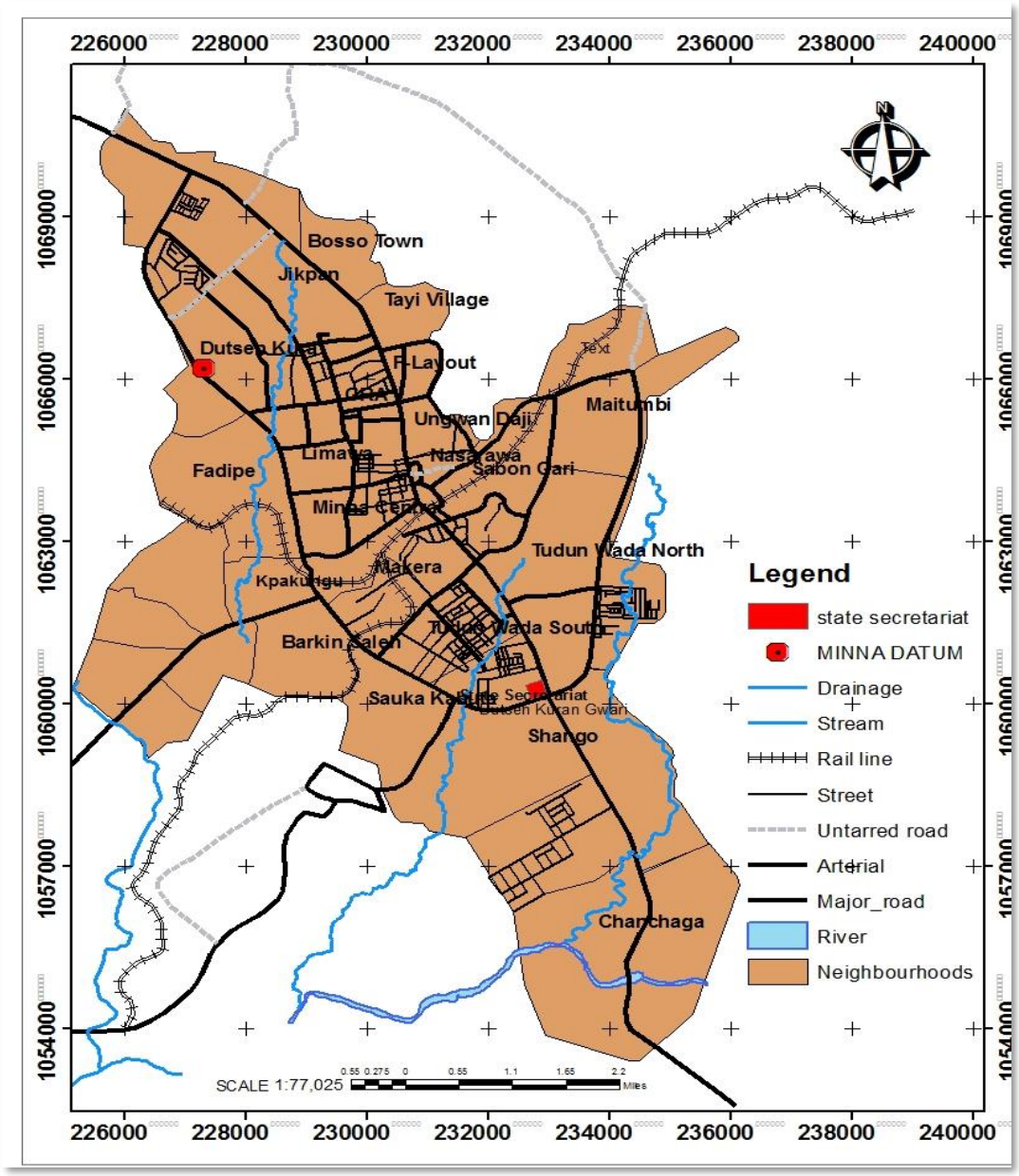

Fig 1.3: Location Map for Minna, Niger state
Source: Author (2021)

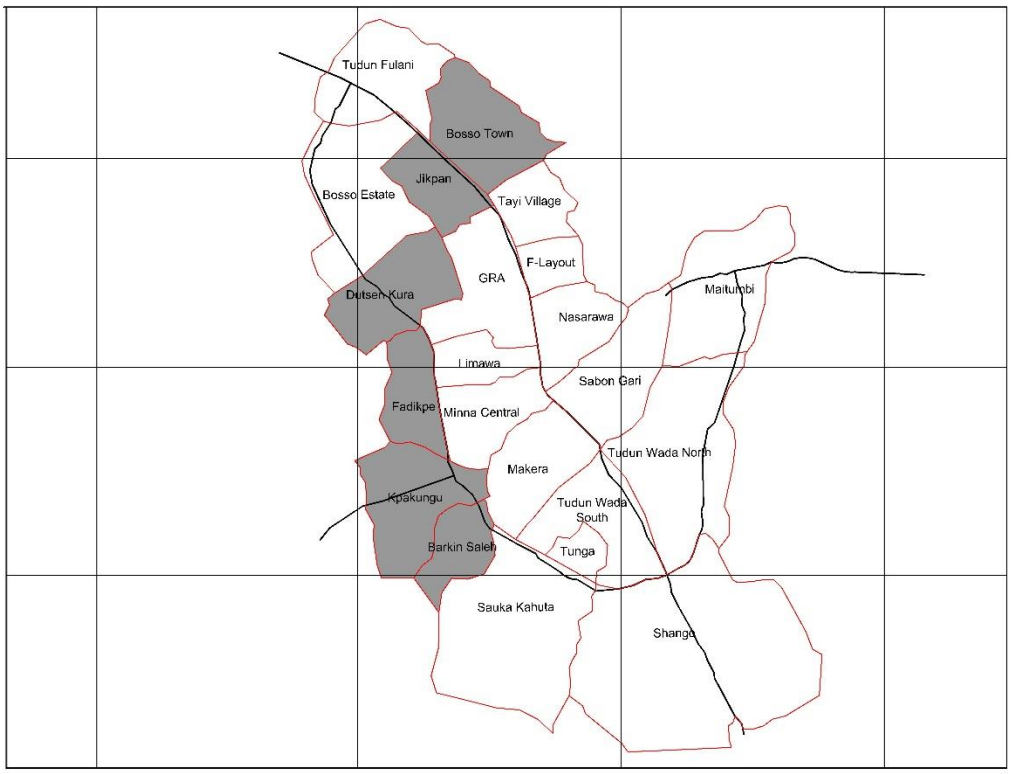

Fig 1.4 Map of Minna Showing the Slum Neighbourhoods
Source: Ojigi 2012 (modified)

1.7.3 Climate of Minna

1.7.3.1 Rainfall of Minna

The average annual rainfall in Minna is estimated at 1,334 mm. The highest monthly average rainfall of 300mm (11.7in) is usually experienced in September. Minna experiences its rainy season between April and September. brought by the monsoon winds from the southwest (Olawale, 2010).

1.7.3.2 Temperature of Minna

The city's average monthly temperature is often at its highest point around March, around 30.5°C (87°F), and its lowest point in August at 21.5°C (77°F). This is due to the seasonal difference in solar disparity during the dry and rainy seasons of the year.

1.7.3.3 Wind of Minna

Minna, which is located in the north of the country, also experiences strong wind movements: the strong wind that blows from the Sahara is carried by the northeast trade wind towards Minna.

1.7.3.4 Relief Features of Minna

The city's terrain consists of a diverse yet isolated range of rocky ridges and several areas of uniform scenery. The northeast wing of the city is made by a more or less continuous granite rock (Paida and Bosso hills), while the east wing of the city is created by a variety of tiny hills, some of which were reclaimed and erected to become the old GRA (Lock,1980).

1.7.3.5 Drainage of Minna

The most well-known streams in the city are the Chanchaga river, which is located south of Minna, and the Suka river, which is also located southwest. Some major drainages go from the city centre to the south-western part of the city, with numerous lesser drainages feeding into the major ones with hurricane water run-off from the hills to the east. In a few areas, these streams form large areas of flood land.

1.7.4 Characteristics of the Slum Neighbourhood in Minna

Slum areas and neighbourhoods of Minna are growing and are also having similar characteristics that are mostly related to the features they are known for globally. These features include: land uses are predominantly residential with commercial along the major roads; there is poor accessibility within the neighbourhoods; water supply is majorly through water vendors, wells and manual boreholes machines where available; there is also the visible presence of dilapidated

structures; and, the areas generally have poor drainage systems within the neighbourhoods. See Table 1.1.

Table 1.1: Characteristics of the slum neighbourhoods and identified healthcare facilities

S/N	Neighbourhood	Characteristics of Neighbourhood		Government-owned Healthcare Facilities	Other Health Facilities
1	Bosso Town	• Located opposite FUT Bosso campus with Tudun Fulani to the left and Tayi village • Total of five identified healthcare facilities	• Land use is predominantly residential with commercial along the major roads • Poor accessibility within the neighbourhoods • Water supply is majorly through water vendors, wells and boreholes where available • Presence of dilapidated structures • Poor drainage systems within the neighbourhoods	- PHC Bosso II - PHC Anguwan Biri	1 Dispensary 2 Private Clinics
2	Jikpan	• Stretches from Garima junction to Bahago Roundabout • Total of four identified healthcare facilities		- PHC Jikpan	1 Specialist Clinic 2 Dispensaries
3	Dutsen-Kura	• Comprises two sub-neighbourhoods which are Dusten Kura Gwari and Dusten Kura Hausa • Total of six identified healthcare facilities		- PHC Dutsen Kura Hausa (Adamawa Road) - PHC Dutsen Kura Gwari (Kwaso)	2 Private Clinics 2 Dispensaries
4	Fadikpe	• Located south west part of town along the western by-pass • Total of three identified healthcare facilities		- PHC Kutirko Fadukwai	1 Dispensary 1 Private Clinic
5	Kpakungu	• Locate also at south western part of Minna • Total of three identified healthcare facilities		- PHC Kpakungu	1 Dispensary 1 Private Clinic
6	Barkin Saleh	• Also locate along the western by-pass between Kpakungu and Sauka Kahuta • Total of three identified healthcare facilities		- PPFN Barkin Saleh	2 Private Clinics

Source: Author, 2020

Note: PHC = Primary Health Care, PPFN = Planned Parenthood Federation of Nigeria.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Classical Location Theory

In the classical location theory, the spatial structure of economic activities is mainly explained by transportation costs, which include transportation costs that prompt producers to locate their markets or raw materials nearby - that is, customers and purchase raw materials from a distance (Yates *et al.,* 2011; Billen *et al.*, 2012; Mulligan, Reid and Moore, 2014; Bondi, Radoji˘ci´c and Rheinländer, 2020; Cowling, Brown and Lee, 2021; Rodríguez Bolívar, 2021). These activities depend on the relative costs of material supply and finished product distribution, so many industrialists tend to settle in places with the lowest total transportation costs (Gbakeji, 2014).

Transfer costs are generally reduced by bringing producers and consumers closer together in the transport and communication network so that for-profit companies react to transfer costs by trying to reduce them. in the transport and communication network and all types of production to find favourable locations at the transhipment and hubs in the transport network (Sorrell, 2007; Nordesjö, 2021). The concept of relocation costs has a strong impact on the spatial distribution or location of public facilities. Public facilities have many important properties, many of which the following two are particularly relevant to current purpose (Howley, Scott and Redmond, 2009; Neuman and Smith, 2010; Tumwebaze *et al.*, 2013; Balogun, Okeke and Chukwukere, 2014; Radulescu *et al.*, 2016; D'Ayala *et al.*, 2020):

1) The services they produce are mainly intended for end use and

2) Public services usually require personal contact between consumers and producers.

Because of these two characteristics, public facilities are located typically and primarily for distribution purposes and are therefore geared towards the consumer market.

Location theory also draws important conclusions about the spatial distribution of producers and consumers. The positional relationship between manufacturers in a competitive market is usually disgusting. This is mainly because manufacturers are looking for markets with the least competition and standardization which implies there is no reason to satisfy consumer preferences other than low prices. Every point-of-sale purchase from every production centre that can provide cheaper. The cost of shipping a product or product to any market is the cost of the factory plus the cost of distribution (Salema, Barbosa-Povoa & Novais, 2010; Zoppi, Argiolas and Lai, 2015; le Polain de Waroux *et al.*, 2019). Therefore, the spatial structure of producers and consumers is a function of competition among producers, and to a large extent depends on the structure of transfer costs. (Gbakeji, 2014).

2.1.2 Central Place Theory

The idea of the central place refers to the position and distances of service centres, among other things, so it may be helpful to highlight some notions, particularly those of location, that are directly related to the subject of the spatial management of public facilities. are simply locations that provide a convenient focal point for people to purchase goods and services, and the essence of the focal point is centrality. The quality of being in the centre of the traffic system is referred to as centrality (Gbakeji, 2014). As a result, the concept of central placement is relative. It depicts the relationship between a point and other points in the area, with the

central position being the point that can be more than one. This concept is essential to the geographical distribution of public amenities since the central location theory's major aim is to design a spatial arrangement of central locations that reduces the population's travel expenses in order to receive the required services.

Customers who are centrally located are more likely to use service centres that will transform them and satisfy their desires with the least amount of effort. In other words, customers choose places that require the least amount of time or money spent on transportation. Among the factors frequently recommended as influencing travel patterns, travel expenditures have gotten the most attention. It is suggested that the expense in money, time, or effort involved in going to various service centres supplying the needed products and services influences consumer travel behaviour. (Gbakeji, 2014).

2.1.3 Welfare Economics

The social welfare function and the distribution of welfare among members of society are two ideas in welfare economics that encapsulate some concepts of central placement and have substantial consequences for the spatial arrangement of public services. The typical concern in location theory has been to minimize expenses while boosting revenues (Billon, 2008; Nijkamp and Abreu, 2009; Huang *et al.*, 2019; Afuecheta and Omar, 2021). the system's total cost of production and distribution, according to Chrisholm; Aguda (as cited in Gbakeji, 2014). This involves limiting the total amount of time, money, or labour required to get to and from public services.

The second argument is about the distribution of well-being among all citizens, which is a component of location theory that has received little attention. Losch (as cited in Gbakeji,

2014) proposed two theses about the distribution of well-being in one of his writings. To begin, the market area network must cover the entire area in question; second, the number of companies must be as large as feasible, with the opposing reasoning that their market areas must be as tiny as the first phrase implies that all customers have access to supply, while the second indicates that supply price discrepancies between various clients in different places must be as modest as is compatible with the store's remaining business (Brennan and Israel, 2008; Scholfield and Brockington, 2008; Binder and Coad, 2011; Daw *et al.*, 2011; Nikkanen, Räsänen and Juhola, 2021). While the second theory necessitates care in private firms, it is less so in public organizations. The hierarchy of central sites implies a distribution of well-being among citizens (Gbakeji, 2014).

Even in market area analysis, welfare perspectives have a significant impact. Traditional location literature defines efficient market areas as those with the shortest overall distance to supply centres. As a result, every consumer uses the closest provider, and consumers are merely indifferent along the market's boundaries. the centre that they frequent, especially if the goods and services are uniform in all aspects

This research is primarily based on the central place theory as its sought the service radii of the healthcare facilities within the slum neighbourhood of Minna so as to highlight possible area devoid of service coverage due their far proximity to the facilities that are meant to serve them.

2.2 Review of Past Literatures

2.2.1 Health, Healthcare Service and Healthcare Facilities

World Health Organisation (WHO) in 1948 (cited in Jakab, 2011), defined health as a state of comprehensive mental, social, and physical well-being and not just the absence of illness or susceptibility and the capability to lead a economically and socially industrious life (Alderton *et al.*, 2019; Sign *et al.*, 2020). Huber, *et al*. (as cited in Kajang & Keswet, 2016) sees health as the capacity to acclimatize and to self-sustenance. Oloyede (2011) also identified good health as a prerequisite for general human viability, as it can be viewed as a critical component of social needs. Ademuwagen and Odanton (as cited in Kajang & Keswet, 2016) explained it to mean a quality resulting from his surroundings enabling him to lead a personally satisfying and socially useful life, while Uche (1991) (as cited in Kajang & Keswet, 2016) affirms that it is a feeling of well-being that people enjoy when the body systems work together affectively and are in harmony with the environment (Basiago, 1998; Nwaka, 2005; Crist, 2014; Ghisellini, Cialani and Ulgiati, 2016; Giakoumi *et al.*, 2019). Health can be viewed as a term used to keep the body, mind, and all systems at the highest possible level of efficiency in order to best achieve the goal of a good life. This is very possible if it is good. Health policies, facilities, and systems are provided. (Kajang & Keswet, 2016).

Indeed, no meaningful assessment can be made without turning to health care and health services. Then what is medical care? Health care is nurturing and developing the full potential of people through the provision of an appropriate environment. it is recognizing people's health needs and problems and providing them with the necessary medical care (Diener and Seligman, 2004; Dolan, Peasgood and White, 2008; Knol *et al.*, 2009; Jiang *et al.*, 2013; Antonson and

Levin, 2018). Health services consist of medical professionals, organizations and complementary health workers who provide medical care to people in need. Rehabilitation, long-term, hospital, diagnostic, primary, palliative and home care. These services are geared on making healthcare more accessible, high-quality, and patient-centred. To deliver good healthcare services, several different types of care and providers are required. The Oregon Legislature in 2017 (Warden *et al.*, 2011; Jaeger, Plantinga and Grout, 2012) defined health services as the provision of medication, medical or surgical treatments, nursing, hospital services, dental services, optometric services, complementary health services, or any or all of the listed services or other required services of a similar nature, whether or not based on illness or personal injury, as well as the provision of any other services a person may require.

According to WHO, safe, accessible, high-quality, people-centred, and integrated health-care systems are important to the transition to universal health care. Service delivery systems are in charge of providing health services to patients, individuals, families, communities, and populations in general (Pierre, 2009; Kayser *et al.*, 2013; Roelich *et al.*, 2015), rather than clinical encounters, and include health care for people in their communities as well as their vital role in shaping health policies and services (WHO, 2020).

Shrestha, (as cited in Ayuba & Wash, 2016) defines Health facilities as the physical structure and support instruments established to provide health services. In general, it is a structure with facilities for the various needs of health services, equipment such as cold chain facilities for management, use, and storage in providing health services to the populace. (Ayuba & Wash, 2016). Health facilities includes all community-based, non-governmental, public, and private healthcare facilities well-defined as a stationary facility in which general healthcare services

are obtainable or rendered (Kaczynski, Potwarka and Saelens P, 2008; Noga and Wolbring, 2012; Roy and Pramanick, 2019). Health posts can be counted as static facilities, but since they are generally small and have minimal supply, they may need to be broken down for purposes of interpretation (WHO, 2010; cited in Jakab, 2011).

According to Eme, Uche, and Uche (2014), healthcare facilities include basic supplies, supplies of medicines, vaccines, portable water, constant energy supply (electricity), medical history tools, ambulances for patient mobility, solar freezers, availability of qualified health and medical staff, etc. Improving the healthy life of patients. Hospitals, clinics, dentistry practices, outpatient surgery centres, maternity wards, and nursing homes are all examples of health facilities. When examining these amenities, keep in mind that the surrounding environment is a significant consideration. Having an impact on people's health, three types of surroundings can be mentioned here: natural, built, and social environments (LaGro, no date; Smit *et al.*, 2011b; Revi and Rosenzweig, 2013; Aguilera *et al.*, 2020). In the framework of this environment, evaluation of health determinants, such as clean water and air, decent housing and safe neighbourhoods, good roads, and so on, which contribute to good health and should thus be appropriately integrated in health services (Eme, Uche, & Uche, 2014).

2.2.2 Health and the Economy

The widespread slogan "health is wealth" is a cliché. Bad health is indeed an impediment to development, so it is necessary to break the cycle of poverty and ill health. According to Eme, Uche, & Uche (2014), the viability and sustainability of any nation’s social and economic growth hang on the health care sector. Access to quality health care ought to be seen as a elementary right attributable to the big profit it'll wear the individual and also the economy. It

has also been established by various scholars that enhanced health has an unswerving link with efficiency of labour force of a given nation be it developed or developing (Denno, Hoopes and Chandra-Mouli, 2015; Jayaweera *et al.,* 2018; Singh *et al.,* 2018; Arend and Bruijns, 2019). Bloom & Canning, Castro-Lea, et. al, Hamoudi & Sachs and Barro (as cited in Nwakeze and Kandala 2011), were amongst a few of the authors who have recognized this link amongst health and commercial growth of a country. Nwakeze and Kandala (2011) further stated that, there was a consent of judgement by these authors on the necessity of a competent healthcare rendering system of which changeable methods and models have been postulated or developed. Hamoudi and Sachs (as cited in Nwakeze and Kandala 2011) contend that there is a cycle of instantaneous influence sandwiched between health and wealth.

Correspondingly, Castro-Lea, et. al (as cited in Nwakeze and Kandala 2011) was of the belief that healthcare is the most indispensable service in any determination to decrease poverty and accomplish sustainable growth. Therefore, guaranteeing the health of the large population (which is increasing daily) who are below the poverty line will go a long way in increasing their productivity which will in the long term reduce poverty. The World Health Organization (WHO) defines good health as a condition of complete social, mental, and physical well-being, not only the absence of sickness or disability. This implies that being exposed to an unhealthy environment, as well as stressful living and working conditions, will result in illness, lowering labour productivity. It can thus be deduced that a state's wealth is dependent on the health of its citizens. (Nwakeze & Kandala, 2011).

In Nigeria, human capital development is viewed as the foundation for economic development and growth, with an effective and sound healthcare delivery system. Since the post-colonial

era, this ideology has clearly guided economic development and planning agendas (Mitlin, Satterthwaite and Bartlett, 2011; Hansmann, Mieg and Frischknecht, 2012; Pacheco *et al.*, 2012; Al-Hasan, Momoh and Eboreime, 2015; Tan, Harland and Daniel, 2021). Among other things, the fundamental prerequisite for reenergizing a national workforce capable of driving development requisites in an efficient manner is properly embedded in a systemically structured health service delivery system.

Unbendingly augmented, health as an essential but unsatisfactory input into country development progressions reinvigorates the populace to tactically seize critical development chances. As a result, a nation with a healthy population will be able to maximize development efforts through maximizing the use of technological innovations.

2.2.3 Type of Healthcare Facilities

According to Flavin (2018), most people think of a hospital or clinic when they hear the term "healthcare facility," but even a cursory examination of the business reveals that there are many other options available that aren't immediately apparent. As more consumers want holistic, precise, and cost-effective care, the healthcare industry is increasing its options and reach. Specialized clinics and outpatient centres appear to be helping to relieve hospital overcrowding, and new long-term care facilities are springing up to serve patients who require months or years of medical assistance. Many people don't think about these services until they require them. (Flavin, 2018). Types of healthcare facilities therefore include:

2.2.3.1 Ambulatory Surgical centers

Outpatient surgical activities, often known as outpatient surgery centers, allow patients to get various surgical operations outside of a hospital setting. Because patients are there for surgery,

not to recover from sickness and disease, these environments generally offer procedures at a lesser cost than hospitals while simultaneously minimizing the danger of infection (Flavin, 2018).

2.2.3.2 Birth Centers or Maternity

According to the American Association of Birth Centers, this is a childbirth healthcare center that concentrates on the midwifery approach. They strive to provide a more comfortable delivery environment for the mother, as well as a cost-effective, family-inclusive birth.

2.2.3.3 Blood banks

Donors can give blood and platelets at these facilities, which also store and sort the blood into components that can be utilized most efficiently by patients. Occasionally patients require these precise components, and other times they simply require a large amount of blood.

2.2.3.4 Clinics and Medical Offices

This is a centre for outpatient management and therapy. Throughout a wide range of treatment disciplines, there are several healthcare facilities that meet that criterion. Many people visit a clinic for routine checks and medical appointments. A physician's individual office, a group practice environment, or a corporately owned clinic that is tied to a larger healthcare system or hospital are all examples of healthcare facilities. In the field of medicine, clinics cover a lot of ground (Flavin, 2018).

2.2.3.5 Diabetes Education Centers

In the Western World, diabetes is a highly terrible disease. According to the Centers for Disease Control and Prevention, about 30 million people have diabetes, and several of them are unaware

of it (CDC). To keep diabetes from becoming life-threatening, patients must manage the condition and often undertake lifestyle changes. Diabetes education centers often include classes, instruction, supportive services, and a variety of services to assist people in managing their diabetes and living a life free of complications.

2.2.3.6 Dialysis Centers

People with kidney dysfunction frequently require dialysis treatments on a regular basis. Dialysis is a procedure that cleanses and purifies the blood artificially, replacing the function of the kidneys. Renal dysfunction disease affects about 14% of Americans.

2.2.3.7 Hospice Homes

The term "hospice" is often misunderstood. It refers to a set of insurance benefits for those who are nearing the end of their lives. It also refers to a concept of care for terminally ill people as well as established hospice networks. Hospice is also a term for a type of healthcare facility that focuses on end-of-life care.

2.2.3.8 Hospitals

The quintessential "catch-all" healthcare facility is a hospital. The services provided by a hospital vary greatly depending on its size and location, but the goal of each hospital is to save lives. Most hospitals have a range of departments that can be classified as either intensive care or non-intensive care. Intensive care units handle life-threatening situations as well as the most acute incidents. Patients who are facing a life-threatening situation should come here. Non-intensive acute care includes childbirth, procedures, recovery, step-down units for patients who have recently been managed in critical care, and many other services.

2.2.3.9 Imaging and Radiology Centers

Patients can get diagnostic imaging services at these institutions, just like they do at hospitals. CT scans, ultrasounds, X-rays, MRIs, and other types of diagnostic imaging are available. While imaging centers can be found in hospitals and even clinics, outpatient facilities assist keep expenses down and provide patients with greater flexibility in scheduling.

2.2.3.10 Mental Health and Addiction Treatment Centers

This category of healthcare facility encompasses a wide range of facilities. Mental health treatment facilities are sometimes general institutions that treat all mental health issues, and other times they are specialized. Suicidal ideation (or suicidal ideation) psychotherapy, depression treatment, trauma and post-traumatic stress disorder (PTSD) treatment, anxiety disorder treatment, behavioral difficulties, and other services are examples of these types of facilities.

2.2.3.11 Nursing Homes

These facilities provide a living environment for people with medical demands that aren't serious enough to require to be hospitalized but are too severe to maintain at home. Approximately nursing homes provide services such as speech and occupational therapy for those with more serious medical requirements. Other nursing homes strive to offer a more homelike environment, and may function similarly to an apartment complex with medical personnel on hand. These centres provide long-term homoeopathic care ranging from basic to complex needs in an environment designed for residents to stay for several weeks or months rather than just a few weeks or months.

2.2.3.12 Orthopedic and other Rehabilitation Centers

Muscles and bones are the focus of orthopedic medicine. Patients who have issues in certain parts of the body usually go to a physical therapist. If you have chronic lower back pain, for example, you should see a physical therapist at an orthopedic hospital or clinic to get a diagnosis and treatment plan. Orthopedic centers handle anything from sports injuries to therapy for the disabled. They typically offer problem evaluation and diagnosis, as well as prevention, treatment, and rehabilitation for bone, tendon, ligament, muscle, and joint issues (Flavin, 2018).

2.2.3.13 Urgent care

Urgent care (UR) clinics are for on-demand healthcare requirements that aren't acute enough for the emergency department but are too serious or worrisome to wait for a medical appointment. When children become ill and require fast diagnosis or comfort from symptoms, urgent care is a popular option.

2.2.3.14 Telehealth

While telehealth isn't technically a sort of healthcare facility, it is worth mentioning because of its significant development potential in the coming years. A digital form of healthcare facility can be represented by telehealth, ophthalmology, and remote healthcare. According to the Federal Health Resources and Services Administration (HRSA), telehealth is the use of electronic communication technologies to facilitate long-distance health treatment and health education (Flavin, 2018).

According to Wikipedia (2020), hospitals, healthcare centers (including clinics, doctor's offices, urgent care centers, and ambulatory surgery centers that serve as first points of contact with a

health professional and provide outpatient medical, nursing, dental, and other types of care services), medical nursing homes, pharmacies, and drug stores.

2.2.4 Spatial Analysis and Distribution of Healthcare Facilities

Because good health is such an important aspect of societal requirements, there is a need for an equal distribution of healthcare facilities as a factor in city population sustainability. Planners place a premium on the geographical arrangement of health facilities. There is a concern about the unfair and unjust allocation of space, which has led to the issue of facility provision and effective utilization (Ayuba & Wash, 2016). It is thought to be abundant in metropolitan areas, and the quality and quantity of health facilities in a country or region is a frequent indicator of that area's affluence and standard of living (Rizyada, as cited in Ayuba & Wash, 2016).

The geographical accessibility of health services for an individual, as well as the physical accessibility of a household member to healthcare facilities, are both significant, however they are both restricted by remoteness. According to Owoyele (2014), a lack of access to health facilities is the root cause of the bulk of environmental health hazards in impoverished countries, particularly in metropolitan regions. As a result, there are various dimensions to health-care access, including geographic accessibility, which is well-defined as the degree to which the populace deems the distance, travel time, and method of transportation to healthcare services satisfactory (World Health Organization, 1978).

According to Fox et al., (as cited in Owoyele, et al., 2015), efficient allocation of healthcare facilities is one of the indicators for achieving equal access to health care services, but there are impediments to achieving this goal that vary by location, including accessibility, availability, affordability, social acceptance, and accommodation. The unhappiness with the quality of health

facilities in Nigeria has centred on its unbalanced spatial distribution and inaccessibility, as a result of increased population, rapid rural-urban migrations, and urbanization, as well as huge problems of negative health. The haphazard location of available healthcare services, which a large percentage of the population does not have access to, is a key driver of this tendency (Owoyele, Ajobiewe, Idowu, Musa, & Ohadugha, 2015).

The spatial distribution of health facilities is influenced by a variety of communal and marketable factors, as well as the population's healthcare demands. In a study carried out by Owoyele, Ajobiewe, Idowu, Musa, & Ohadugha in (2015), the research was conducted with the goal of analyzing the service radii and accessibility of health services to individuals in various areas in Suleja, Niger state, where data was obtained from patients of the thirty-seven (37) healthcare institutions identified in the study region. The findings demonstrated disparities in the spatial location and distribution of health care facilities. The Lorenz curve was used to show the degree of mismatch between the population and accessible health services. Hospitals and clinics showed symptoms of clustering in two districts (Madalla and Kabula).

The identified reasons for the inequality in distribution were a disregard for locational issues and the consequences of adopting a particular spatial pattern of healthcare service delivery. According to the findings, 34.35 percent of people travelled less than 1 kilometre to get to the hospitals and clinics of their choice, while only about 11 percent of patients travelled more than 4 kilometres from their homes to get to the health facility of their choice. Using the established standard, as stated by Onokerhoraye, (as cited in Owoyele et al., 2015) the research recommended rigid compliance to established standards, ideal for minimum distances to health facilities and thoughtful oversight of population health needs when future provision for health

facilities is decided to focus on, which is ideal for minimum distances for health facilities should not be more than 1 kilometre health clinics, 2 kilometres maternity homes, and 3-4 kilometres for a general hospital (Owoyele, Ajobiewe, Idowu, Musa, & Ohadugha, 2015).

2.2.5 Accessibility to Healthcare Facilities

Because healthcare is an important indicator of social development, access to healthcare facilities is an important component of the overall healthcare system and has a direct impact on the illness burden that plagues the health conditions of many developing countries. As a result, measuring access to healthcare facilities contributes to a greater knowledge of how health systems work both within and between countries, as well as the design of evidence-based health policy (Mainardi, as cited in Islam & Aktar, 2011). According to Islam and Aktar (2011), access to healthcare refers to a population's ability to get a specified set of health-care services. Topographical accessibility is also known as spatial or physical approachability in this context. The intricate link between population dispersion and healthcare facility supply is addressed by physical accessibility.

Ease of access to healthcare facilities has been divided into several categories, based on the circumstances of the submission. New Zealand research estimated the geographical accessibility of public hospitals. Using cost–path analysis, the shortest travel time and distance to the nearest hospital via a road network were established. Local average time and distance statistics were obtained by modelling an individual's total travel time, with the assumption that everyone visits a hospital at least once. These data can be generated for a number of population groups, and comparisons between regions can be made (Brabyn & Skelly; as cited in Islam & Aktar, 2011). Operating in partnership with a numeral of academic organisations, the World

Health Organization (WHO) has been assessing access to healthcare services in poor nations (Black et al, as cited in Islam & Aktar, 2011). To calculate accessibility, they used the standard Cost-distance function in the Spatial Analyst extension for ArcView 3.x, which estimates the geographic extent of catchment regions corresponding to an accumulated cost surface. This Cost-distance function is an isotropic algorithm, which means that each cell in the cost surface that acts as the function's input grid contains a single value that represents the cost of traveling across that location (cell) in any direction (Islam & Aktar, 2011).

Likewise, the terminology and characteristics of the idea of access to healthcare facilities can be evaluated and incorporated into a framework that sees health policy as impacting characteristics of the healthcare delivery system as well as the population at risk. The goal is to promote client happiness and consumption of healthcare services (Aday & Andersen, as cited in Islam & Aktar, 2011). The socio-organizational and geographic aspects of accessibility are both involved. Other than spatial qualities, the socio-organizational component comprises any resources characteristics that help or hinder the client's efforts to access to healthcare facilities. They take into account things like the gender of the specific medical care provider, the fee scale and speciality of the provider, and so on. Geographic accessibility, on the other hand, is a consequence of travel time and physical distance between healthcare providers. As a result, accessibility comprises a network of complicated socio-cultural aspects that determine an area's eventual healthcare condition, rather than just the existence or availability of resources.

Luo and Wang (as cited in Islam & Aktar, 2011) used two ways to determine accessibility. They merged two GIS-based accessibility measures into a single framework and investigated

geographic accessibility to primary healthcare in the ten counties of the Chicago region. The fluctuating catchment area (FCA) technique determines a physician's service area based on a threshold travel time while taking into account their availability based on their current demand. The gravity-based method takes into account that a physician who is close by is more accessible than one who is far away, and decreases a doctor's obtainability by a gravity-based potential. The researchers were able to evaluate the variation of spatial accessibility to primary healthcare in the Chicago region and analyse the sensitivity of the ripple effect by experimenting with different ranges of threshold travel times in the FCA method and different travel interpenetrates in the gravity model. For evaluating physical accessibility, Lee and McNally (as cited in Islam & Aktar, 2011) utilized a GIS-based approach. It is built on space–time prism notions that can detect viable opportunities in various settings of complex trip behaviour. They are attempting to determine whether or not a site can be substantially gotten. If a centre is not accessible by the quickest route, it can be expected that it will be unavailable within the allocated time frame (Islam & Aktar, 2011).

Individual house location and travel factors were incorporated into the proposed accessibility measure. The government's services and facilities are distributed around the country. City centres are hubs of commercial activity and magnets for amenities. Many individuals who live on the outskirts of town lack access to reliable transportation, and in an emergency, the time it takes to get to a hospital becomes a serious concern. An enhanced healthcare system is one of the primary indicators of societal well-being. As a result, healthcare is a critical component of societal progress. (Islam & Aktar, 2011).

According to Markus and Makanjuola (as cited in Islam & Aktar, 2011), health policies are typically directed toward the creation of a basic infrastructure and sufficient manpower for

effective delivery of health services for the rapidly growing population at the primary, secondary, and tertiary levels, but little has been done to promoted easy access for the end users. Although much work has been done by Basu & Friedman; Doherty; Rispel & Webb; (as cited in Islam & Aktar, 2011) in accessing the availability and adequacy of healthcare facilities, emphasis was dwelled much on relationship between health facility, population and, the adequacy based on performance toward assessing the progress in determining the intervention of public health facilities to the communities and mostly in relation to urban and rural areas.

2.2.6 Healthcare Services in Slum Areas

The United Nations Human Settlements Programme (UNHS) defines a slum as a wide range of low-income communities and/or poor human living circumstances. This includes the huge shantytowns, which have quickly become the most conspicuous embodiment of poverty and crime. The level of housing in such settlements ranges from a simple hut to permanent constructions, with limited access to water, power, sewage, and other necessary amenities and infrastructure, such as healthcare. (Akinwale, *et al*., 2013).

According to the 2016 World Cities Report, the quantity of people living in slums in emerging nations increased from 689 million to a staggering 880 million in 2014. It further noted that slums are home to a large number of people, accounting for a quarter of the world's total urban population. Health is a major concern, particularly for those who live in slum areas in any state or country. Because of the limited healthcare resources available to them, their lives are at risk in the event of disease and its treatment. The most essential areas where urban poverty offers a great risk are shelter, housing, sanitation, water, social security, education, health, and livelihoods of susceptible groups such as women, children, and the elderly, as well as their specific needs. Problems with public health and social issues have arisen, lowering the quality

of life. The spread of infectious diseases such as tuberculosis, pneumonia, and diarrhoea was aided by poor hygienic conditions in densely populated metropolitan areas and insufficient waste disposal. (Zaman, Goswami, & Hassan, 2018).

In Target 11 of the Millennium Development Goals, the WHO had expressly recognized the need to improve the lives of not less than 100 million people living in slums (Zaman, Goswami, & Hassan, 2018). Due to the informal character of slum settlements and cultural, social, and behavioral aspects that are specific to slum people, little is known about the health and quality of life difficulties they face. The Nigerian Demographic and Health Survey (NDHS), which is done on a regular basis, focuses on metropolitan regions rather than slums. As a result, a lack of health-related data from slums could lead to public and commercial health providers allocating healthcare resources in an inefficient and unrealistic manner. (Akinwale, et al., 2013).

Zaman and Dutta (2018), observed that slum areas are neglected due to the underprovided evolution of the services and facilities from the state to the local level, not because of the government or the concerned authorities' lack of resources but because the slums lack proper hygiene and sanitation on a regular basis. They further stated that the Slum dwellers frequently lack fundamental healthcare skills, such as how to boil water for drinking, how to use soap before and after meals, how to wash hands after faeces, and so on. Traditions, superstitions, societal conventions, and ideals from the past serve as a form of resistance to contemporary healthcare facilities. This frequently leads to negligence and a failure to utilize healthcare services on time. Rapid urbanization is also connected with many health issues associated to the injury, violence, water and environment, non-transmittable diseases (NTDs) and their

related risk influences such as unhygienic and unhealthy diets; tobacco chewing and smoking; lack of physical activity, alcoholism as well as disease outbreaks risks. This will directly affect their health status and health-seeking behaviour (Zaman & Dutta, 2018).

Afsana and Wahid (2013), reported that access to healthcare for the populations of urban poor in Bangladesh was depressing due to the fact that inadequate attention was been prearranged for the delivery of essential healthcare to the inhabitants of slum coupled with the fact that the administration health system was weak. The Local Government Division which was accountable for rendering primary healthcare services to the populaces of municipal poor for the past 15 years, has been incapable of meeting their demands and needs satisfactorily and the tertiary and secondary healthcare services rendered by the Ministry of Health and Family Welfare were correspondingly insufficient (Afsana & Wahid, 2013). In addition, lack of coordination and planning, conflict amongst the two agencies, and ambiguity in roles and responsibilities have been blamed for fragmentation in the delivery of healthcare services to slum settlers. Moreover, low-quality unlicensed private clinics, underserved populaces looking for healthcare from untrained unceremonious providers and unchecked over-the-counter drug selling aggravated the poor health of municipal slum-dwellers. The state of affairs in due course results in high healthcare expenses and calamitous health consequences in Bangladesh (Afsana & Wahid, 2013).

2.2.7 History of Public Health and Hospitals in Nigeria

Nigeria offers a wide range of healthcare options and services. Traditional, biomedical, or western orthodox healers, synthetic healers, bone settlers, and so on are all available (Erinosho; Owumi, as cited in Ademiluyi & Aluko-Arowolo, 2009). This variation includes information

about the company's history, as well as its distribution, maintenance, and management infrastructure. The existence of several types causes ongoing friction, conflict, and mistrust among practitioners. (Ademiluyi & Aluko-Arowolo, 2009).

To recall, the nineteenth-century Industrial Revolution seemed to have a tremendous impact not just on the creation of modern healthcare, but also on other elements of social growth. The Revolution ushered in a shift away from rural and community sustenance economic patterns in which performance is dependent on individualism, or face-to-face relationships, and toward urban/metropolitan specialized economies based on universalism, or bureaucracy, in which relationships are essentially formal. The division of labor, specialization, bureaucracies, and considerable skill acquisition through lengthy training and higher education are all stressed here (Ademiluyi & Aluko-Arowolo, 2009). This transition had an impact on the development of public health, hospitals, and their infrastructure, which was later guided by this shift. Due to the failure of the industrial environment to manage sustainability, the indulgences resulted in appallingly bad health and life chances. As a result, a vast array of diseases and injuries previously unknown to rural people appeared, putting a strain on emerging metropolitan governments.

In the United Kingdom, this resulted in far-reaching social and public health decisions, culminating in the Public Acts of 1848, 1875, and 1936. Endall (as cited in Ademiluyi & Aluko-Arowolo, 2009) defines formalized formal The bills were primarily proposed to collect social and medical statistics and to analyze social pathology at the time, with a special emphasis on the environmental, social, and economic circumstances of the working population (Gill, as

cited in Ademiluyi & Aluko-Arowolo, 2009). It was also designed to simultaneously control, prevent, and treat diseases, illnesses, and infirmities.

As a result of the foregoing, the state, meaning the United Kingdom [including all of its colonies], assumed direct responsibility for the people's health. As a result, vital healthcare services are now supplied by healthcare centres or hospitals (Park, as cited in Ademiluyi & Aluko-Arowolo, 2009). In response to advances in medical technology, new discoveries, and the structure and distribution of healthcare and illness patterns, the evolution of healthcare centres resulted in substantial specialisation. Disease outbreaks, on the other hand, were not uncommon in this area, owing to the migration of people from various backgrounds into urban areas to work in factories.

Nigeria's development as a British colony reflects the foregoing, i.e., colonization imposed this age on us till it ended in October 1960. Furthermore, our growth tactics have remained largely unchanged from those handed to us by our old colonial masters. As a result, the form of medical care delivery has favoured the municipal populace in specific, at the cost of rural inhabitants, since the colonial time (Ademiluyi & Aluko-Arowolo, 2009).

This is due to the fact that healthcare services are hospital-based, with two key drivers driving technology: administration and specialization. Specialization comprises the acquisition of competence and mastery of specific areas in healthcare delivery, whereas bureaucracy specifies out the norms and mechanisms of its operation. Although Christian missionaries established the initial therapeutic centres in Nigeria in rural areas (Onokerhoraye, as cited in Ademiluyi & Aluko-Arowolo, 2009), this was not lacking of the expatriate masters' secret support for the spread of Christianity.

Because the purpose of evangelism was to encourage the rural people to join the fresh religious conviction, the medical centres constructed by the missionaries were mostly centred in rural areas. These medical centres, on the other hand, were just mobile clinics or, at the very least, community dispensary outposts that treated primary health issues such as bites from snake and negligeable wounds. The administrators supported the formation of medical facilities in the true logic of hospitals to contend with epidemics such as malaria, small pox, sleeping sickness, and additional main medical anxieties in years later, when British administration had become well entrenched (Ademiluyi & Aluko-Arowolo, 2009).

Hospitals, on the other hand, were only found in urban areas with a significant population of Europeans and administration bureaucrats (Akin-Aina; Home as cited in Ademiluyi & Aluko-Arowolo, 2009). Government senior workers were housed in Government Reserved Areas (GRAs) such as Jericho in Ibadan, Ikoyi in Lagos, and other locations. European Quarters were the name given to such restricted regions. Lagos (Ikoyi / Victoria Island), Kaduna, Ibadan, Ikeja, Enugu, Jos, and other large cities have such quarters.

Two separate side effects of this specific configuration could be recognized right away: first, a complete disregard for rural settlements in terms of healthcare, and secondly, a well-established discrimination in metropolitan centres amongst colonialists, together with their black companions, and the common populace. Despite the fact that we gained independence nearly seventy years ago, same suburban forms are still visible in our municipalities and conurbations (Mabogunje; Home, as cited in Ademiluyi & Aluko-Arowolo, 2009). Apart from them, no attention was placed on traditional health care types, resulting in a vast void that

exacerbated discrimination amongst the have-nots and haves, as well as amongst rural and municipal areas.

The inconsistency highlighted the challenges in the health care system and additional related services, in those personnel and infrastructure that are critical to a convenient hospice system, such as pipe-borne water, electric power, food, and roads for drug surgical operations and storage, were not made available (Aluko-Arowolo, as cited in Ademiluyi & Aluko-Arowolo, 2009). Later Nigerian governments' health policies were affected by this. Based on the foregoing, a 'roadmap' for Nigeria's healthcare system and other services was developed, which positioned healthcare services on three platforms: primary, secondary, and tertiary establishments for the rural, mixed populace, and municipal middle class, correspondingly (Ademiluyi & Aluko-Arowolo, 2009).

2.2.8 Healthcare Delivery in Nigeria

The principle of Universal Health Coverage (UHC) after the 2015 development programmes, according to Oyekale (2017), re-emphasizes distributional impartiality and effectiveness in health care service delivery by providing financial and technical support to health care centres at all categories of service administration. This is linked to the achievement of a number of health-related milestones in the Sustainable Development Goals (SDGs). Despite agreements by the world's key wellbeing policy group of actors (World Health Organization and World Bank) to deploy needed funds in the direction of some of the specified goals, constrictions on service availability are frequently overlooked at the countrywide level of healthcare development. Contradictory partisan perspectives on what is regarded the superlative

possibility in health care administration, economical restrictions, and the perseverance of some covariate and different financial shudders exacerbate this (Oyekale, 2017).

The level of service delivery in Nigeria's healthcare industry has been a source of constant criticism for decades. In order to work toward achieving health-related SDGs, it is critical to assess the availability of healthcare facilities for service delivery. Given Nigeria's current dismal performance in some healthcare measures, this is crucial. According to the WHO, Nigeria, which has a population of less than 1 per cent of the world's populace, counts for nearly 19 per cent of worldwide motherly demises, with a motherly death rate of 814 in 100,000 live childbirths. Despite the fact that access to high-quality healthcare is important for minimizing motherly death, the National Population Commission (NPC) reported that maternity care utilization in Nigeria was low in 2013, with only about 36% of births taking place in hospitals and only 38% being assisted by trained manpower. (Oyekale, 2017).

In Nigeria, there are variances in the quality of healthcare services supplied by commercial and state providers, as well as regional differences. Obi et al., in particular, came to the conclusion that privately owned healthcare institutions provide superior service than state ones. Nigeria's northern and southern regions have markedly different socioeconomic development. Northern Nigerians are overwhelmingly Muslims, with lifestyles resembling those of Arab states in North Africa and the Middle East. In contrast, Christianity is the major religion in southern Nigeria. Communities in southern Nigeria are better educated and more likely to adopt Western lifestyles, as indicated by their religious orientation, which was mostly taught by foreign missionaries. Differences in demand for healthcare services and household healthcare seeking

behaviour reflect the effects of Nigeria's existing socio-political, ethnic, economic, and religious differences on health inequities (Oyekale, 2017).

Primary healthcare (PHC) is organised by local government bodies, whereas secondary healthcare is provided by the state, according to the Nigerian constitution. The federal government, supplementary, receives government and tertiary healthcare services. Diverse echelons of government have a history of not adhering to their constitutional obligations (Makinde, Sule, Ayankogbe, & Boone, 2016). Additionally, providing health care services to the public is the responsibility of local government bodies, who often have the weakest system of governance, making it difficult for them to perform their responsibility. The National Primary Healthcare Development Agency (NPHCDA) was established in 1992 to assist in the support of the country's underdeveloped PHC system. However, it has experienced numerous obstacles in carrying out these obligations, resulting in continuous low performance of the PHCs (Makinde, Sule, Ayankogbe, & Boone, 2016).

According to Makinde et al., the NPHCDA has been constructing PHCs in communities around the country with the purpose of shifting these healthcare centres to local governments and societies for administration. This top-down method does not appear to be working since numerous numbers of the local governments and societies that should own and administer these healthcare centres are not well equipped to do so. Through the NPHCDA, the recently enacted National Health Act offers supplementary funds for the administration of PHCs recognised as the elementary healthcare fund, which will help to improve healthcare service delivery in the country. Nevertheless, this is still in its early stages and requires careful consideration before a public launch (Makinde, Sule, Ayankogbe, & Boone, 2016). Although attempts to overcome

the quality of care as a contributory reason to the country's negative health outcomes have gotten less attention throughout the years, it is vital. Clinical governance, defined as a systematic strategy to preserving and increasing the quality of care for patients within a health system, should be at the heart of any endeavour to improve healthcare (Ugo, et al., 2016).

2.2.9 The Levels of Health Care Institutions in Nigeria

In Nigeria, there are three health care structures that are organized in a hierarchy system. These are primary, secondary, and tertiary care facilities. Primary health care (PHC) is defined by the Alma Ata Declaration of 1978 (WHO, 1978) as "essential healthcare based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford at every stage in their development, in a cost that the community and country can afford at every stage in their development, in a cost that the community and country can afford at every stage in their development It is the individuals, families, and community's first point of contact with the national health system, providing healthcare as close as possible to where people live and work (Ayuba & Wash, 2016). Similarly, Ademiluyi & Aluko-Arowolo, (2009) opined that grounded on the outstanding act of the Local Government Authority, PHC is within the scope of Local Government.

Primary health care facilities are unquestionably the foremost port of contact for injured and sick people. They handle minor medical issues such as malaria, fever, colds, and nutrition disorders, among others. They're designed for people with minor health issues and for health education. They also deal with infants, mothers, and pregnancies. Basic healthcare services

will be provided at healthcare centres, clinics, and outpatient sections of hospitals in rural, suburban, and metropolitan areas.

Family planning and immunization are two other health considerations in their care (Badru, 2003). Finally, primary health care centres place a strong emphasis on patient care and are involved in record keeping, case reporting, and patient referral to higher levels of treatment. Within the system, primary health centres are classified as health centres, maternity homes/clinics, and dispensaries.

Challenging cases are referred to secondary general hospitals from primary healthcare centers. Primary health centers, according to the Medical and Dental Council of Nigeria (MDCN) in Badru [2003], are also to provide health diagnosis, education and treatment of communal sicknesses using adequate equipment, structure, and an indispensable medicine list.

Secondary health centres (SHC) are designed to give specialized treatments to patients who have been referred from primary care. It was created with the intention of providing general and specialized healthcare services, mostly at general hospitals, as well as referral support to the Basic/PHC level (Ayuba & Wash, 2016). Secondary healthcare centres are responsible for not just preclusion, but also all handlings and care of minor to moderately difficult cases (Ademiluyi & Aluko-Arowolo, 2009). The more difficult patients, on the other hand, are passed on to a tertiary or specialist infirmary. All-inclusive healthcare centres and general hospitals are examples of secondary categories.

According to the Medical and Dental Council of Nigeria, any general hospital should have at least three doctors who can provide medical, surgical, paediatric, and obstetric care.

Furthermore, in order to fulfil its position as a second-tier health institution, the general hospital combines primary healthcare facilities into its own (Ademiluyi & Aluko-Arowolo, 2009). In reality, in order to be considered qualified, it ought to be capable of delivering basic clinical services, as well as bedding and beds for a minimum of 30 sick people. Auxiliary facilities for effective management and therapy of common diseases should also be available.

Tertiary health centres (THC), commonly known as specialist/teaching hospitals, are the pinnacle of the country's healthcare system, offering highly specialized services. They were to be offered in specialized and teaching hospitals, as well as other similar institutions, to support the healthcare delivery system at the primary and secondary levels (Ayuba & Wash, 2016). It takes on complex medical problems and patients as medical appointment from normal hospitals or as straight admissions to its peculiar facility. It has an emergency and accident unit, a diagnostic unit, divisions, an outpatient session unit, and a treatment unit among other things. All of these units must have the proper equipment and be staffed by qualified workers. Teaching hospitals also carry out research and report the findings to the government in order to influence health policy (Ademiluyi & Aluko-Arowolo, 2009). This elucidates wherefor this type of healthcare facility is frequently housed at a college.

Additionally, teaching hospitals are expected to be properly built and ascribed for therapeutic education in a variety of fields. They must adhere to internationally recognized and acceptable standards. It is also important to note that, in addition to providing infrastructure for health-related issues, there is a need for training specialists and materials in fields such as general medicine, surgery, paediatrics, psychiatry, dentistry, and obstetrics, amongst others. To this aim, each department should have its own outpatient clinics, consultation sessions, ward units,

and surgical sessions, as well as professional personnel and administrative personnel to staff these units.

The basic types of health organisations are connected with rural and semi-municipal areas or diverse populations, whereas general hospitals are sited in administrative capitals and in a few supplementary large cities, as a point of emphasis. The federal government and those states that have and manage state campuses are in charge of and fund tertiary health institutes. As a result, speciality or teaching hospitals are primarily located in cities.

Personnel shortages are also mentioned as a result of insufficient general hospitals, with majority of the population being attended to. Specialised medical workers are suspiciously distributed to teaching hospitals, according to Adebayo and Oladeji (2006), while urban based institutions are considerably well stocked with various types of medical practitioners, far beyond the average achieved.

Aside from that, life chance resources such as water, power (electrical energy), good transportations, housing, employment for married person, and school for children are not commonly covered, which are probable to fascinate these employees to sub-municipal and rural areas, and shattered surroundings or slum zones in cities. And if they are available, they are woefully insufficient (AkinAina, 1990; Aluko-Arowolo, 2005). This may provide more information on the allocation of human resources and infrastructure for Nigeria's healthcare consumption system (Ademiluyi & Aluko-Arowolo, 2009).

2.2.10 Health Facility Policy Development in Nigeria

The Federal Government made it a priority to provide healthcare facilities for the public's welfare since "not much can be expected from a sick labour force, no matter how skilled" (Scott-Emuakpor, 2010). According to sources, the Church Missionary Society opened the country's first health care center in Obosi in 1880, followed by some in Onitsha and Ibadan in 1886. The first hospital in Nigeria, however, was the Sacred Heart Hospital in Abeokuta, which was founded in 1885 by the Roman Catholic Mission.

In Nigeria, healthcare services have always been defined by short-term development, as has been the situation with most elements of Nigerian life. The chief national growth plans are as follows:

1. The First Colonial Development plan from 1945- 1955 (Decade of Development)
2. The Second Colonial Development plan from 1956- 1962
3. The First National Development Plan from 1962- 1968
4. The Second National Development Plan from 1970- 1975
5. The Third National Development Plan from 1975- 1980
6. The Fourth National Development Plan from 1981- 1985
7. Nigeria's Five-year Strategic Plan from 2004 – 2008

General Yakubu Gowon, the then-Head of the Military Government, referred to the Third National Development Plan as "A Monument to Progress" when it was released in 1975. The focus of this expansion plan appears to be on increasing the numerical strength of current facilities rather than developing a coherent health-care policy. According to Scott-Emuakpor (as cited in Ayuba & Wash, 2016), the Fourth National Development Plan (1981-1985) was

the first to address the subject of preventative health services. The Basic Health Services Scheme (BHSS) calls for the construction of three levels of health-care facilities. (Ayuba & Wash, 2016)

2.2.11 Functions of the Primary Health Centres

According to the World Health Organization (WHO) declaration of 1978, primary health care centers are mandated to provide essential healthcare based on practical, scientifically sound, and socially acceptable methods and technology that are made universally accessible to individuals and families in the community or neighbourhood through their full participation, and the services are to be provided at a cost that is affordable to them.

According to Adeyemo; and Ademuwagun et al. (as cited in Eguagie & Okosun, 2010), primary health care consists of ten subsystems: education about contemporary health problems and methodology for controlling and preventing them, endorsement of food supply and better nutrition, equitable distribution of safe water and basic sanitation, material and child health care including birth control, tetanus vaccination, and vaccination against polio (Eguagie & Okosun, 2010).

The primary health care centre was created with the intention of bringing health nearer to members of the community and neighbourhood through greater engagement. In 1987, the World Health Organization (WHO) defined the goals and expectations of primary health care centres as follows: make healthcare services readily accessible to all people regardless of where they live or take a job, resolve the health complications causing the greatest morbidity and mortality at an expense that the society can afford, and guarantee that the technological advances used is within the public's ability to use. (Eguagie & Okosun, 2010).

In summary, Primary health centres are fundamentally perform the following functions within the neighbourhood or community for which they are located. These basic functions include:

i. Promoting the fundamental health of the people and community

ii. Preventing the outbreak or spread of common diseases

iii. Curing such diseases

iv. Acclimatising people to live full and ordinary lives after an infection or incapacity.

Put simply, primary health care centres are responsible for providing general health services of a preventative, promotional, curative, and rehabilitative character to the community at the point of entry into the health care system.

According to Adeyemo (as cited in Eguagie & Okosun, 2010), the primary healthcare system also recognizes locals with little or no recognised schooling who can be proficient to provide certain elementary healthcare services. In other words, traditional birth attendants, midwives, and traditional healers are essential in slums and communities. Community health professionals play an important role in the administration of preventative healthcare services. They carry out basic functions such as: (i) providing high-quality emergency first aid; (ii) recognizing risk factors of more serious illnesses; (iii) delivering babies under more sanitary settings; and (iv) enlightening their fellow villagers about the disease process in their neighbourhood.

2.3 Summary of Literature Review

This study looked at a variety of topics, including health, healthcare service delivery, and healthcare facilities, notably in cities, as well as the geographical distribution of healthcare

facilities, even in slum regions. Studies (Owoyele, et al., 2015; Flavin, 2018) on different forms of healthcare facilities have been investigated, as well as those on geographical analyses and theories developed to explain the idea of health facility distribution. Several researches (Owoyele, et al., 2015; Kajang & Keswet, 2016) looked at healthcare challenges from various angles and views, according to the report. Although some of these revisions concentrated on the types of healthcare facilities in the nation, such as hospitals, healthcare centres, therapeutic nursing homes, dispensaries and drugs stores and therapeutic laboratories and study, others have provided and actually analyse the importance of good health to the economy (Nwakeze & Kandala, 2011).

During the review of past literatures, literatures on the spatial analysis and distribution of healthcare facilities, access to healthcare facilities, healthcare services in slum areas, health care delivery in the country and levels of health care institutions in the country were reviewed. Owoyele, et al., (2015); Ayuba & Wash, (2016), on the spatial analysis and distribution of healthcare facilities revealed that impartial distribution of healthcare structures is one of the directories to accomplishing equivalent access to healthcare services, nevertheless there are such impediments like: availability, accessibility, affordability, acceptability, and accommodation which differs from place to place. On access to healthcare facilities, it was revealed that accessibility of healthcare centres is a significant constituent in the general health care system and has a unswerving influence on the weight of sickness that hinders health situations. Slum dwellers' lives are also prone to diseases and their management, according to the authors, because of the restricted healthcare resources available to them. Due to the informal character of slum settlements and cultural, social, and behavioural aspects that are specific to slum people, little is known about the health and quality of life difficulties they face.

On the subject of health delivery in Nigeria, it has been stated that there are variances in the eminence of health care services given by public and commercial service benefactors, as well as provincial alterations between Nigeria's many regions, it was decided that privately held healthcare facilities provide superior service than public healthcare facilities. A brief history of healthcare in Nigeria was reviewed while the three levels of healthcare institutions in the country were discussed.

2.4 Research Gap

Several factors have been identified by Owoyele, *et al.*, (2015) as the reasons for distributional imbalance in many developing countries, Nigeria inclusive but none has been established in the study area. Little has also been done to promoted easy access for the end users as emphasis was dwelled much on relationship between health facility, population and, the adequacy based on performance. The role and effectiveness of urban land-use planning and circle of influence as means of increasing access to and equal distribution of health facilities has not been adequately explored. Efforts to understand the healthcare facilities situations within slum settlements as regard distribution and accessibility occurs in foreign countries while researches are still evolving within the national context. This research consequently, not only make available a comparatively new viewpoints to the resolution healthcare facility shortage within slum neighbourhoods but also accentuate the role of unproductive land use planning and circle of influence as contributing influence to urban ill-health.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology refers to the methods that must be followed in order to achieve the study's objective. It follows a stage-by-stage procedure, beginning with study design and ending with data presentation.

3.2 Research Design

This study is designed to achieve the study's objectives, and it includes the design and organization of essential and relevant materials as a foundation for obtaining valuable information for the research activity. This stage necessitates the creation and usage of research tools such as questionnaires for data gathering, as well as data collation and analysis methodologies.

Table 3.1: Research Matrix

S/N	Specific Research Objectives	Data Required	Method of Data Collection	Method of Data Analysis
1	Nature of healthcare facilities in slum settlement	List and location of healthcare facilities in the area	Interview Guide	Descriptive
		Service radii of the facilities	Planning Standards and Questionnaire	
		Conditions of the facilities	Observation	
2	Challenges of healthcare facilities in the study area	Challenges faced by the facilities in healthcare delivery	Interview Guide	Descriptive
		Challenges faced by the residents in accessing healthcare	Questionnaire	
	Type of healthcare facilities in the study area	Types of healthcare facilities	Interview Guide and Literature Review	Descriptive

3.3 Sources of Data

The data for this research project was gathered from two main sources: primary and secondary data sources.

3.3.1 Primary Data

The primary data required in this study were data generated from the healthcare facilities in the sampled slum neighbourhoods regarding the healthcare delivery system in the study area. However, the researcher essentially focused on the nature, challenges faced and categories of

the healthcare facilities taking into consideration the service radii and the structural conditions of the health facilities.

Physical observation, interview guides, and questionnaires were used to collect this data, which also addressed the socioeconomic and demographic characteristics of the population of the research area. In addition to individual assessments of the healthcare facilities in the research region, a survey of the spatial distribution of the facilities was conducted using a Global Positioning System (GPS) to get the geographic coordinates of the facilities. This in turn aided the mapping and determination of the facilities' service radii. The data obtained from this survey was later used to determine and highlight intervention area for healthcare delivery in the selected slum areas. With the aid of a well-structured interview guide, challenges faced by the various facilities was obtained while the challenges of the residents in accessing proper healthcare was acquired through the use of a questionnaire. Recognised healthcare facilities within Bosso Town, Dutsen Kura Hausa, Dutsen Kura Gwari, Fadikpe and Kpakungu areas of Minna were also be obtained through a survey of the above listed neighbourhoods.

3.3.2 Secondary Data

The secondary data employed for this study were composed from innumerable sources. These include selected information on the nature and levels of healthcare facilities in the country from Ademiluyi & Aluko-Arowolo, (2009). Google maps of the study areas were also sourced from Google-image.

3.4 Method of Data Collection

The methods used for collection of data from various sources includes;

3.4.1 Reconnaissance Survey

The purpose of this survey was to become acquainted with the research field. It was carried out in order to obtain first-hand knowledge about the research area's surroundings which in turn aid the selection of the sampled neighbourhoods from the total number of slum neighbourhoods in Minna. It also enables the researcher to gain basic information about the healthcare facilities within the study area, determine the nature, locations and type of healthcare facilities, the average numbers of patients that visit the healthcare facilities in a day was observed which was in turn used to determine the sample size of the survey.

3.4.2 Physical Observation

In research of this nature, especially as it reputes assessment, there is a necessity for all-embracing physical observation. As a result, vigorous observation was carried out at all sampled healthcare facilities. The emphasis of the physical observation was to establish the structural and physical conditions of the healthcare facilities and its immediate environment in the study area. A camera was used to take images of these facilities and presented in plates.

3.4.3 Questionnaire

A questionnaire structured to integrate the respondents or patient’s view or opinion, on challenges faced in the process of accessing proper healthcare, their socio-economic characteristics as well as the distance travelled to access the healthcare facility, were administered to patients in the healthcare facilities in the various neighbourhoods. The questionnaire includes both closed-ended and open-ended questions. Both types of questions, particularly the closed-ended ones, were designed to elicit information on their socioeconomic

and demographic origins, as well as their personal and communal healthcare issues and the distance travelled to reach available healthcare facilities.

3.4.1 Interview guide

This involves the use of structured interview questions or guides to conduct personal interview with the management of the healthcare facilities to obtain the type and distribution of health facilities in the area and the challenges faced by the facilities in healthcare delivery to the population of the urban poor.

3.5 Instruments for Data Collection

The tools that were used for acquiring information for the study are;

1. Questionnaires
2. Interview guide
3. Observations
4. Understanding of information from text books, mass media, journals, and internet
5. Camera and
6. Global Positioning System (GPS)

3.6 Population and Sampling Technique

3.6.1 Population of Study

The total population of the seven slum neighbourhoods in Minna was estimated at 127,504 (Ode, 2016). This research focuses on the population of patients or people that patronises the healthcare facilities located within these slum neighbourhoods in the study area. Although the total population figure of 127,504 was estimated in 2016, the study is only concern with the

population or number of people from this population that frequents the healthcare facilities within these neighbourhoods.

Table 3.2: Population of Slum Neighbourhoods in Minna

S/NO	Neighbourhood	Population (2016)
1	Barkin Saleh	7480
2	Bosso Town	51054
3	Dutsen Kura Gwari	11693
4	Dutsen Kura Hausa	17536
5	Fadikpe	5846
6	Jikpan	11214
7	Kpakungu	22681
	Total	127504

Source: Ode, 2016

To obtain the average daily number of patients, a reconnaissance survey of the facilities was carried out and samples were drawn from the acquired number of patients for administration of questionnaire.

The total number of government owned healthcare facilities (Primary Health Care) in the seven neighbourhoods is eight (8). Two in Bosso Town while the remaining neighbourhoods has one each.

3.6.2 Sample Frame

The sampling frame for the purpose of this study comprises of Five (5) neighbourhoods selected out of the seven (7) slum neighbourhoods in Minna, because the healthcare facilities

in these neighbourhoods were bigger, more organised and had more patients. They include: Bosso Town, Dutsen Kura Hausa, Dutsen Kura Gwari, Fadikpe and Kpakungu.

The sample frame for the purpose of this study also comprises of number of patients that patronizes the healthcare facilities within slum settlements in Minna. The study covered all government owned healthcare facilities which were located within the five selected slum settlements.

3.6.3 Sample Size

For the purpose of the research, a total of 77 patients present at the healthcare facilities were purposively sampled. Therefore, the sample size was acquired from the total number of patients present at the time of visit to the healthcare facilities which determined the total number of people interviewed. Table 3.3 shows the total number of samples drawn from each neighbourhood.

Table 3.3: Number of Respondents in the Selected Neighbourhoods in Minna

S/N	Neighbourhood	No of Questionnaire
1	Bosso Town	20
2	Dutsen-Kura Hausa	8
3	Dutsen Kura Gwari	21
4	Fadikpe	10
5	Kpakungu	18
	Total	77

Source: Author, 2020

3.6.4 Sampling Techniques

For the purposes of this study, purposive sampling technique was used. A purposive sampling technique objective is to produce a sample that can be logically assumed to be representative of the population (Lavrakas, 2008). It is the deliberate choice of a respondent due to the qualities the respondent possesses (Tongco, 2007). Therefore, the number of patients available in the primary healthcare centres were purposively sampled because of their patronage and knowledge of the facilities. The study's sample was based on the daily average population of out-patients at each of the healthcare facilities. The available out-patients in the facilities were all chosen and questioned.

3.7 Methods of Data Analysis and Presentation

The descriptive statistics were used to analyse the various data collected for the study. The Statistical Product and Service Solution (SPSS) was used to do frequency counts and cross tabulations analysis of the various data collected for the healthcare facility assessment survey, as well as scrutinises of the socio-economic and problems faced surveys. The data collected for the study was further analysed using a variety of statistical methodologies. The results were presented in the form of graphs, photos, and tables. In addition, key technologies such as AutoCAD, Google Earth, Microsoft PowerPoint, Microsoft Excel, and others were used to show and analyse the data collected.

3.7.1 Mapping and mapping techniques

As part of the research, three different sets of maps were created. The first image depicts the overall number and location of healthcare facilities in the research region, organized by kind. The second sort of map depicts the service radius of each of the healthcare facilities found in the study area, while the third depicted intervention areas inside neighbourhoods in need of

healthcare. The intervention area mapping was based on a statistical analysis of the patients' socioeconomic characteristics, which were then connected with the distance travelled to reach the study region's healthcare services.

For the purpose of mapping the healthcare facilities in the study area, a downloaded Google-Earth imagery of Minna was use to deliver mandatory base map afterward the images were been geo-referenced. The geo-referenced image was then digitalized on the AutoCAD environment using polygon and line tools. The polygon tool was use to demarcate the neighbourhoods within the city, while the line shape-file was use to digitize the major road network within Minna. Hence, a street guide map of Minna including the neighbourhood was produced in vector format.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Data Analysis

This section focuses on the exhibition, argument, and analysis of the numerous data acquired with the help of the research instruments, such as the nature of healthcare services in the selected slum settlement in Minna, as well as other topics. Types and functions of healthcare facilities in the study region, challenges faced by facilities in healthcare delivery and those faced by inhabitants in accessing healthcare services, when necessary, these statistics are provided in tables, plates, and figures, and appropriate explanations are promptly followed.

4.2 Nature of Healthcare Facilities in Slum Settlement

This sub-section analyses the list and location of the healthcare facilities, their service radii and the physical condition of the facilities. Tailor-made questions were asked on location of the healthcare facilities within the neighbourhood while a camera was used to take pictures of the condition of the facilities.

4.2.1 List and Location of Healthcare Facilities in The Study Area

Although there are so many healthcare facilities ranging from traditional healers to chemist and the known clinics and healthcare centres, this study zeroed-in on the common health facilities particularly those associated with rendering approved and professional services within the seven slum neighbourhoods. These seven neighbourhoods were selected as slum settlements because of the poor human living conditions, the quality of dwellings and lack of access to basic services and infrastructure like sanitation and healthcare in the areas. The list of the identified healthcare facilities in the seven slum neighbourhoods are shown in Table 4.1.

The table shows that five (5) healthcare facilities are located within Bosso Town, four (4) in Jikpan and Dutsen-Kura Gwari while there are three (3) facilities each in Fadikpe, Kpakungu and Barkin Saleh neighbourhoods with two (2) in Dutsen-Kura Hausa.

Table 4.1: Identified healthcare facilities in the slum neighbourhood in Minna

S/N	Neighbourhood	Government-owned Healthcare Facilities	Other Health Facilities
1	Bosso Town	- PHC Bosso II	1 Dispensary
		- PHC Anguwan Biri	2 Private Clinics
2	Jikpan	- PHC Jikpan	1 Specialist Clinic
			2 Dispensaries
3	Dutsen-Kura	- PHC Dutsen Kura Hausa (Adamawa Road)	1 Dispensary
4		- PHC Dutsen Kura Gwari (Kwaso)	2 Private Clinics
			1 Dispensary
5	Fadikpe	- PHC Kutirko Fadukwai	1 Dispensary
			1 Private Clinic
6	Kpakungu	- PHC Kpakungu	1 Dispensary
			1 Private Clinic
7	Barkin Saleh	- PPFN Barkin Saleh	2 Private Clinics

Source: Author, 2020

Note: PHC = Primary Health Care, PPFN = Planned Parenthood Federation of Nigeria.

The list of all the identified healthcare facilities as shown in table 4.1. aided in the selection of five out of seven neighbourhoods as samples for the study. Therefore, the locations of the government-owned healthcare facilities within the five neighbourhood which was the focus of the study are presented in Table 4.2.

Table 4.2: Primary healthcare facilities with coordinate in the selected slum neighbourhood

S/N	Neighbourhood	Primary Healthcare Centres	Coordinates (UTM)	
			Northing	Easting
1	Bosso Town	- PHC Bosso II	1068050	229312
		- PHC Anguwan Biri	1067916	230020
2	Dutsen-Kura Hausa	- PHC Dutsen Kura Hausa (Adamawa road)	1066395	228785
3	Dutsen-Kura Gwari	- PHC Dutsen Kura Gwari (Kwaso)	1065131	227526
5	Fadikpe	- PHC Kutirko Fadukwai	1063565	227711
5	Kpakungu	- PHC Kpakungu	1061731	228940

Source: Author, 2020

4.2.2 Spatial Distribution of Healthcare Facilities in the Study Area

In an interview conducted with the management of the primary healthcare centres, the management of the primary healthcare centre in Dutsen-Kura Hausa, Kpakungu and Fadikpe opined that the healthcare facilities within the neighbourhood were adequately distributed due to the population of the area and the health needs of the people, they also stated that they had adequate personnel needed to provide treatment for minor ailment and first step treatment they are required to provide for the people. PHC Bosso stated that they are in need of other types of healthcare facilities although they have adequate primary healthcare centres with trained staff, need for basic healthcare centres with doctors and mini surgical theatres were still required. PHC Dutsen-Kura Gwari held that the healthcare facilities in the neighbourhood were inadequately distributed because they are unable to cater for the health needs or demands of the patient at some given time.

However, information on the distribution of healthcare centres obtained from the field survey undertaken in the selected slum neighbourhood show that both Kpakungu, Dusten Kura Gwari, Dusten Kura Hausa and Fadikpe have a primary health centre while Bosso town have two existing primary health facilities within its neighbourhood. The facilities were not evenly and properly distributed or situated to cater for the needs of residents in the different locations of the neighbourhoods as shown in Figure 4.1. this can be accredited to the fact that all of the facilities under scrutiny were located along the major streets passing through the neighbourhood which in most cases do not cut across the entire neighbourhood or the streets are located at one end of the area. It can also be argued that it is possible that the settlements or neighbourhoods were not as big as it is now as of the time of the establishment of these healthcare facilities because slum settlement tends to develop rapidly over a short period of time therefore justifying the idea that the neighbourhoods were not foreseen to grow in the manner in which they have grown. Another possible influence on the location of these facilities is fact that facilities generally are understood to be located near the residence of the traditional leader or ward head within such neighbourhood therefore making such facilities not equally accessible to all residents.

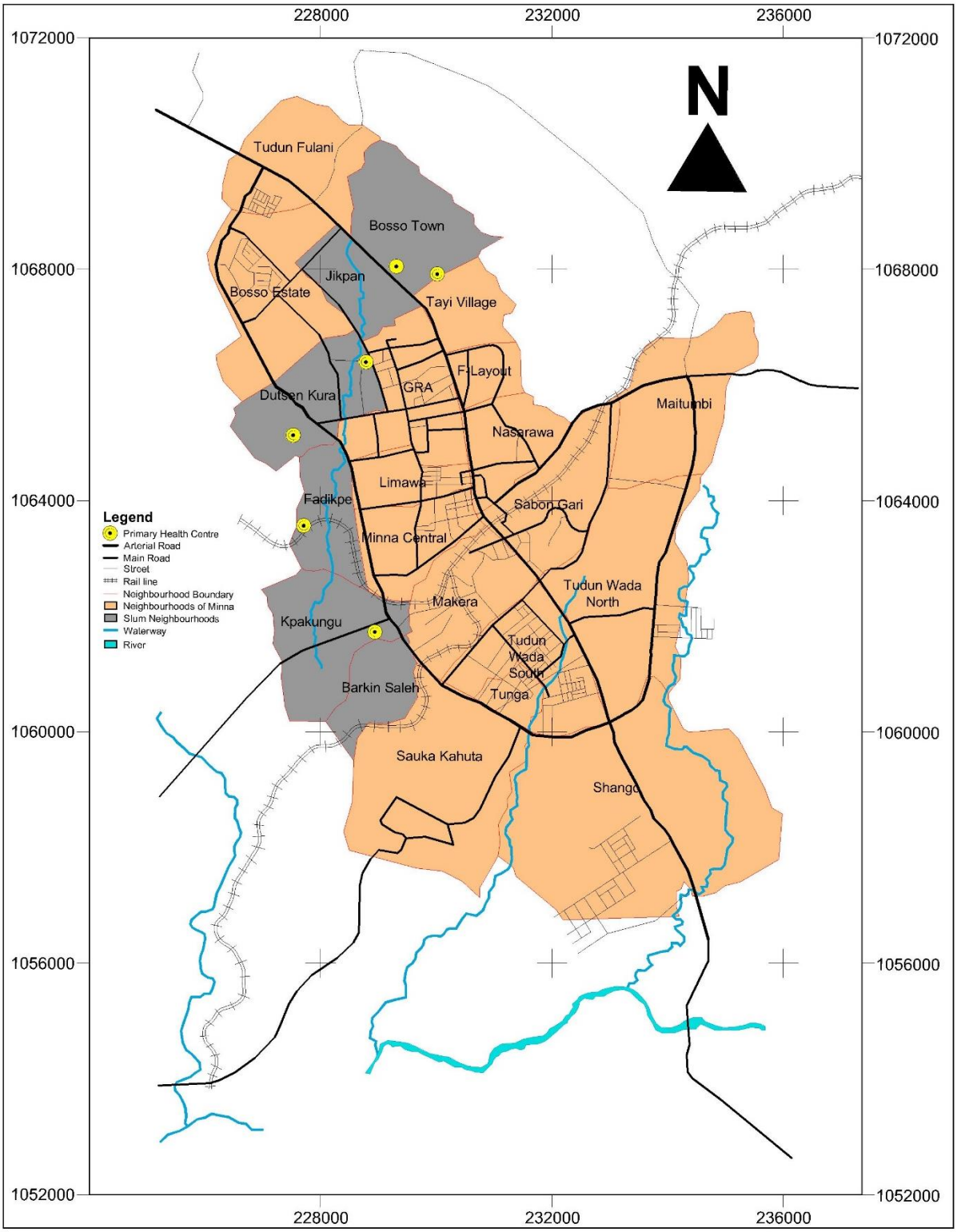

Fig. 4.1: Spatial distribution of the existing primary health centres in the selected slum areas

Source: Author's Field Survey, 2020

4.2.3 Service Radii of the Healthcare Facilities

A spatial analysis of the primary healthcare centres was undertaken using a radius of 500 metres and 1 kilometre to show first, the proximity of the healthcare facilities to one another and second, the areas within the neighbourhoods that are barely or not covered by these facilities. The result shows that the primary health facilities are not centrally located within the neighbourhood reason that their radius does not spread evenly from the facility to all part of the settlement. It also confirms that some locations do not feel the presence or influence of the health facilities because they were not covered by the radius of healthcare centres. This presupposes that access to health centres will most presumably be a problem in areas where health facilities are not encompassed, as some people will be compelled to use the supplied health facility in order to save money on transportation, time spent getting to the health facilities, and even late response to emergency cases.

Figure 4.2 shows the coverage area of 500m radius to the primary health facilities. Since the research is dealing with a population considered to be urban poor and a distance of 500m is also well-thought-out to be walkable, the healthcare facilities were cushioned to know how accessible on foot the facilities within the neighbourhood were. Figure 4.2 shows that only a few portions of the slum neighbourhoods had such access to the health facilities leaving majority of the residence not having access by foot. It further shows that only the facilities in Bosso town have their radii intersecting therefore the most of the facilities are not within trekkable distance from each other.

On the other hand, with a radius of 1km as displayed in Figure 4.3 below, the primary health facilities were seen to have more radii intersecting although a hundred percent coverage of the

neighbourhoods was still not achieved. Figure 4.3 demonstrate that the majority of the health facilities are within 1km radius distance of the other irrespective of the neighbourhood with only the facility Kpakungu being odd one out. Figure 4.2 also reveals possible intervention areas within the five neighbourhoods that are in need of more facilities for easier access.

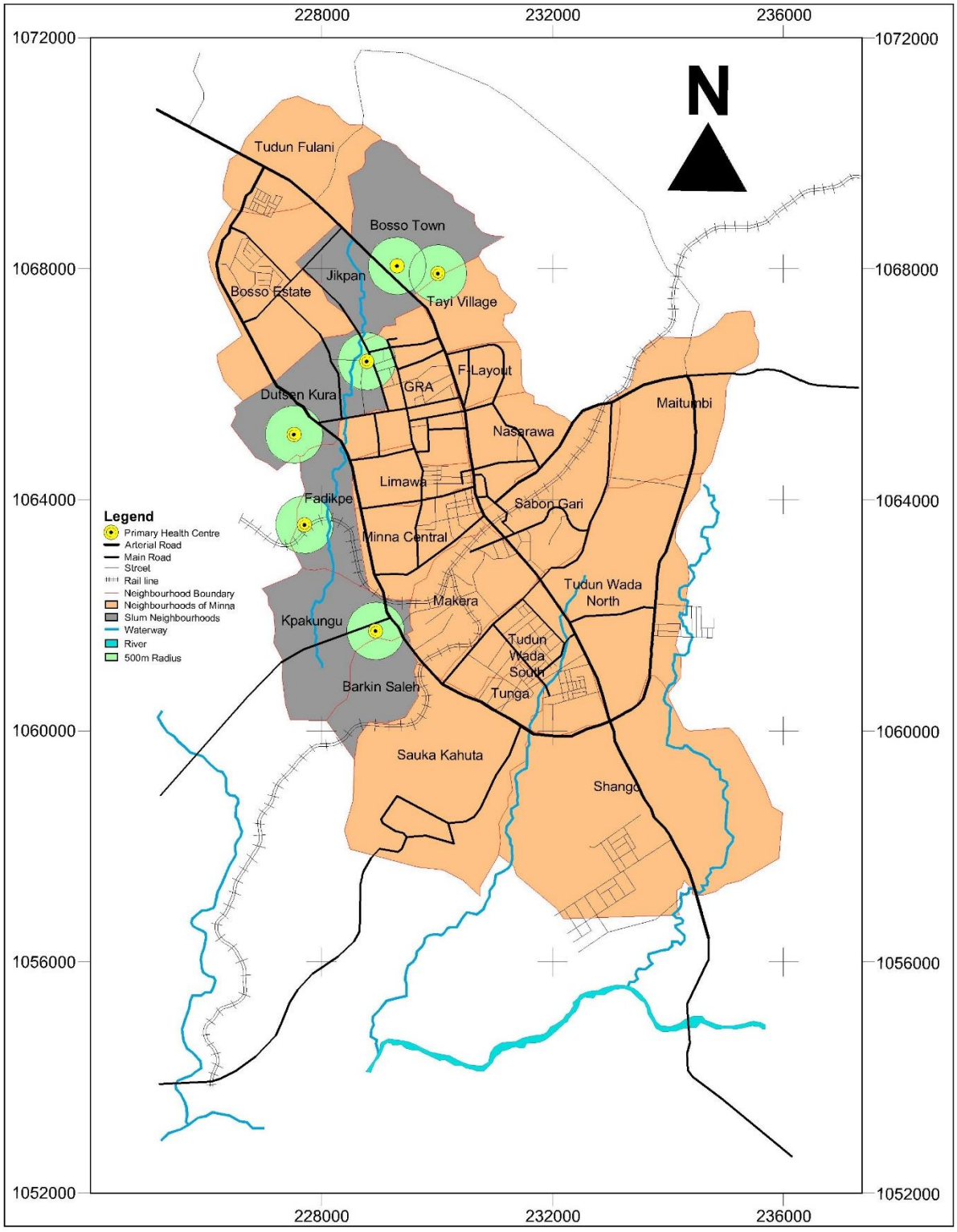

Fig. 4.2: 500-metre radius of the primary healthcare centres
Source: Author's Field Survey, 2020

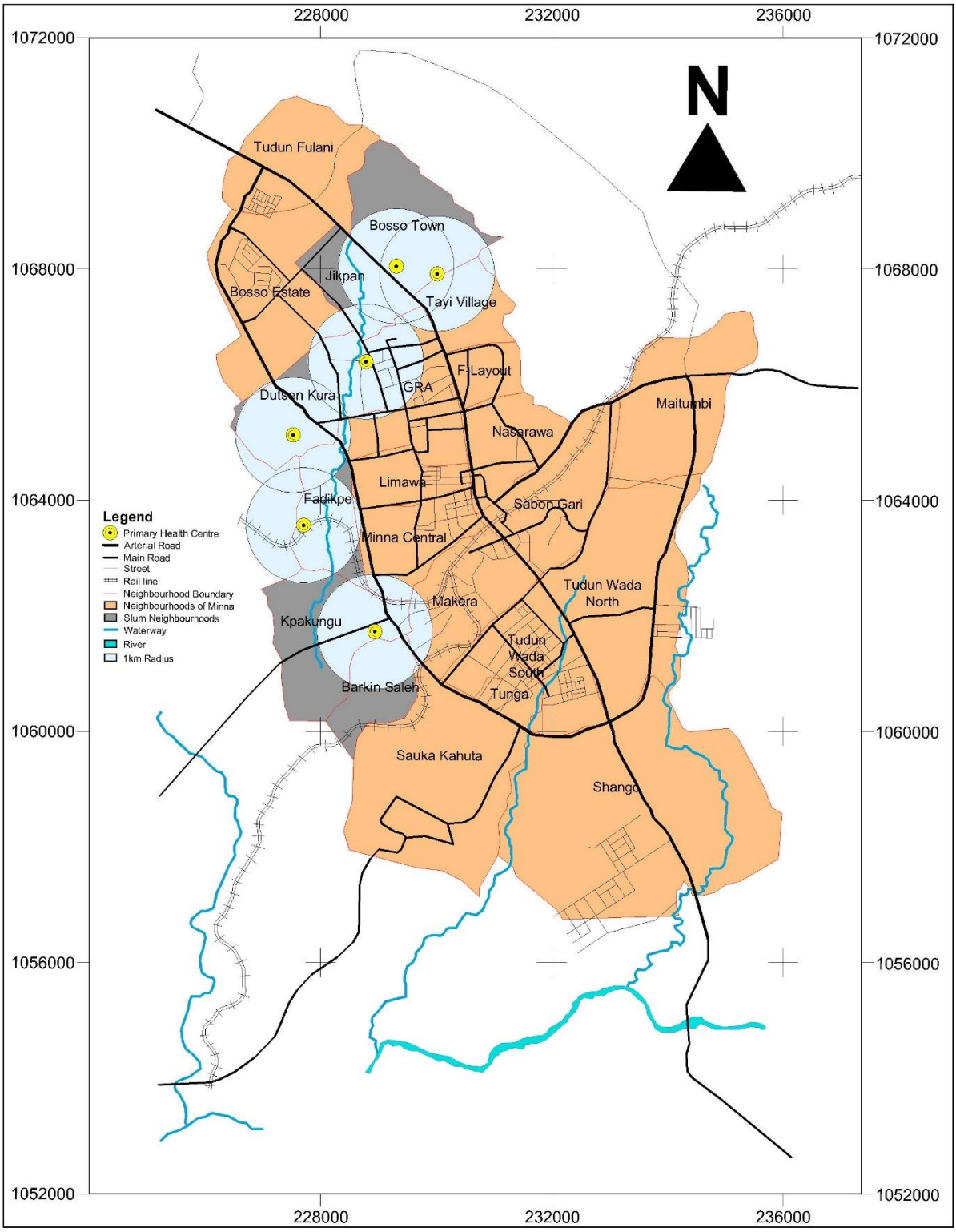

Fig. 4.3: 1 kilometre radius of the primary healthcare centres
Source: Author's Field Survey, 2020

4.2.4 Conditions of the Facilities

As part of examination of nature of the health facilities in the sampled slum neighbourhoods, the study examined the physical condition of the facilities and the environment around them. As shown in Plate 4.1 to Plate 4.4 the primary health centre are not in bad condition physically although the paint on the external walls are coming off due to harsh weather and time as in the case of the PHC in Dusten Kura Hausa (Plate 4.4) and ceiling board falling off as seen in the PHC in Anguwan Biri, Bosso, the structure are in good condition. Through the physical observation method employed in this study, particularly of the nature of road accessing the facilities, it was observed that only two PHCs namely Bosso II and Dusten Kura Hausa pick access from a tarred road, the roads leading to the other PHCs were not paved and in bad condition (as seen in Plate 4.5).

Plate. 4.1: Primary healthcare centre, Fadikpe
Source: Author's Field Survey, 2020

Plate. 4.2: Primary healthcare centre, Anguwan Sarki (Bosso II)
Source: Author's Field Survey, 2020

Plate. 4.3: Primary healthcare centre, Dusten Kura Hausa
Source: Author's Field Survey, 2020

Plate. 4.4: Primary healthcare centre, Anguwan Biri, Bosso
Source: Author's Field Survey, 2020

Plate. 4.5: Road leading to the primary healthcare centre in Anguwan Biri, Bosso
Source: Author's Field Survey, 2020

Plate. 4.6: Beds for patients in the primary healthcare centre, Fadikpe
Source: Author's Field Survey, 2020

Plate. 4.7: Out-patient waiting area in the primary healthcare centre, Kpakungu
Source: Author's Field Survey, 2020

Plate. 4.8: Primary healthcare centre, Dusten Kura Gwari
Source: Author's Field Survey, 2020

Plate. 4.9: Vacant ward in the primary healthcare centre, Fadikpe
Source: Author's Field Survey, 2020

4.3 Challenges of Healthcare Facilities in the Study Area

This sub-section analyses the challenges in healthcare delivery as faced by the healthcare facilities while rendering services as well as the challenges encountered by the residents of the neighbourhood in accessing healthcare services. This sub-section also highlighted the challenges of healthcare facility distribution in the neighbourhood as offered also by the management of the healthcare facilities. Tailor-made questions were asked the management of the health facilities while questionnaires were also administered to the patients on healthcare challenges within the neighbourhood.

The challenges of the distribution of healthcare facilities in the neighbourhood as discovered by the research includes; lack of understanding by the neighbourhood community or disregard of locational issues and poor road network or accessibility. The issues that have been identified in the study region are comparable to those that have been reported by Owoyele *et al.* (2015) in Suleja, Niger State, Nigeria. When pressed further on possible ways of mitigating these challenges, they opined that the community members should be enlighten to enable them understand that health facilities are to be located centrally not in favour of anyone's position or location and better access roads should be provided within the neighbourhood alongside additional health facilities.

4.3.1 Challenges Faced by the Facilities in Healthcare Delivery

According to the healthcare management, preference of secondary healthcare facilities, lack of adequate facilities and equipment to cater for the client's needs, lack of understanding from the patient's relatives, too much misinterpretation (difficulty in effective communication), inadequate manpower, poor electricity supply, inadequate potable water supply, inadequate space and delay in rendering services are the challenges encountered in the delivery of

healthcare services in the neighbourhood. The individual challenges of the health facilities are displayed in table 4.3.

Table 4.3: Primary healthcare facilities with challenges faced in service delivery

S/N	Primary Healthcare Centres	Challenges
1	- PHC Bosso II	• Inadequate space • Inadequate facilities and equipment
2	- PHC Dutsen Kura Hausa (Adamawa road)	• Preference of secondary healthcare facilities • Inadequate facilities and equipment • Inadequate potable water supply
3	- PHC Dutsen Kura Gwari (Kwaso)	• Inadequate facilities and equipment • Delay in rendering services
4	- PHC Kutirko Fadukwai	• Poor electricity supply
5	- PHC Kpakungu	• Inadequate understanding from relatives • Too much misinterpretation of instructions • Inadequate manpower

Source: Author, 2020

When asked for possible measures to address the challenges they face, the management of the healthcare facilities proposed seeking for assistance and intervention from the community and other Non-Governmental Organisation, community sensitization and dialogue with influential people within and outside the community on matters pertaining healthcare facilities. Dialogue with the relatives to understand and accept illnesses as undesirable in order for them to seek for treatment or cure, patients to listen attentively to any information passed on to them, alongside provision of stable electricity supply to enable the operation and provision of clinical laboratory activities and services were also recommended. Other measures offered were the

provision of Basic health centre not primary health care and provision of adequate equipment to enable speedy delivery of services to patients.

4.3.2 Socio-economic Characteristics of Patients and Challenges Faced in Accessing Healthcare Services

This section examined some of the socioeconomic characteristics of the patients who filled out the questionnaire. Age structure, sex, educational background, occupation, income, and years of residence are among them. The section also discussed the challenges faced in accessing healthcare services in the neighbourhoods where these patients lived.

4.3.2.1 Neighbourhood of Residence of Respondent

As made evident in Fig 4.4 below and out of the total of 77 respondents, 27% of the respondents reside in Dutsen Kura Gwari, 26% of the patients responded from Bosso Town, those that resided in Kpakungu constituted 23% while 13% resides in Fadikpe and the 11% of the respondents reside in Dutsen Kura Hausa. This further reveal that the patronage of the PHC in Dutsen Kura Gwari is more compares to those of the other slum neighbourhoods studied.

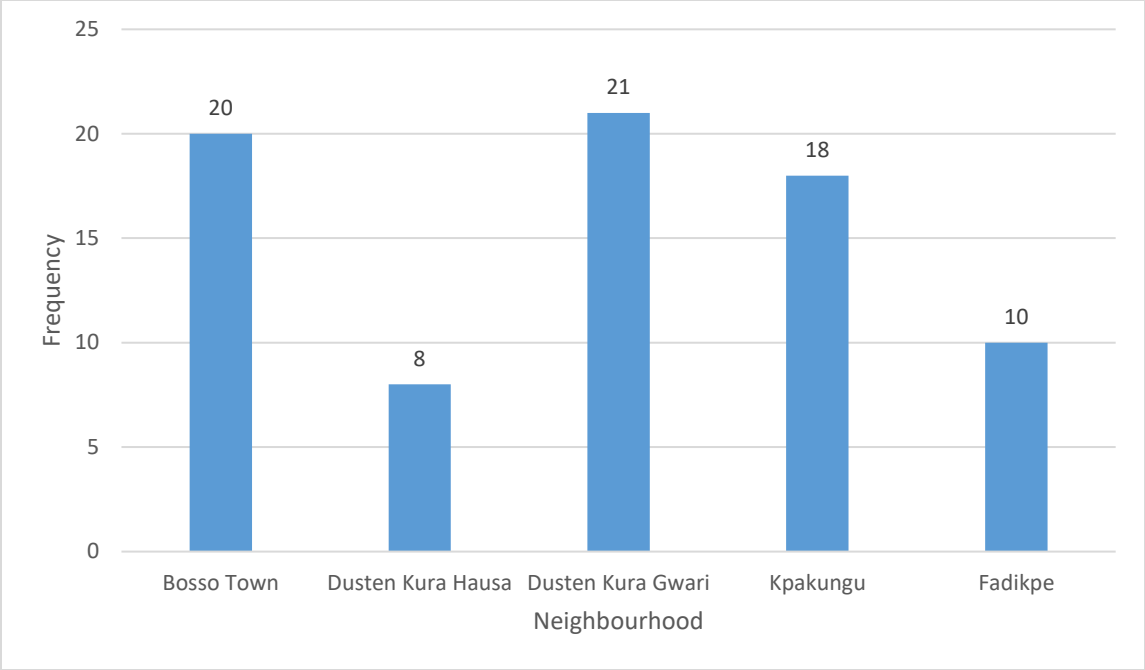

Fig. 4.4: Neighbourhood of residence
Source: Author's Field Survey, 2020

4.3.2.2 Age and Sex of Respondent

The respondents to the questionnaires cut across ten age groups. As shown in Fig 4.5, the respondents within the age group 30 – 34 years old has the highest number and constituted 23%, accompanied by those within the age bracket 25 – 29 years old which constituted 17%, closely accompanied by those within the age group 20 – 24 years old and 40 – 44 years old which both constituted 16% each, accompanied by those within the age bracket 50 – 54 years old which constituted 10%, closely accompanied by those within the age bracket 35 – 39 years old which constituted 8%.

As a result of the age distribution, a sizable proportion of the respondents are comparably young, and are thus likely to be well-informed about the issues they face, such as accessing health services.

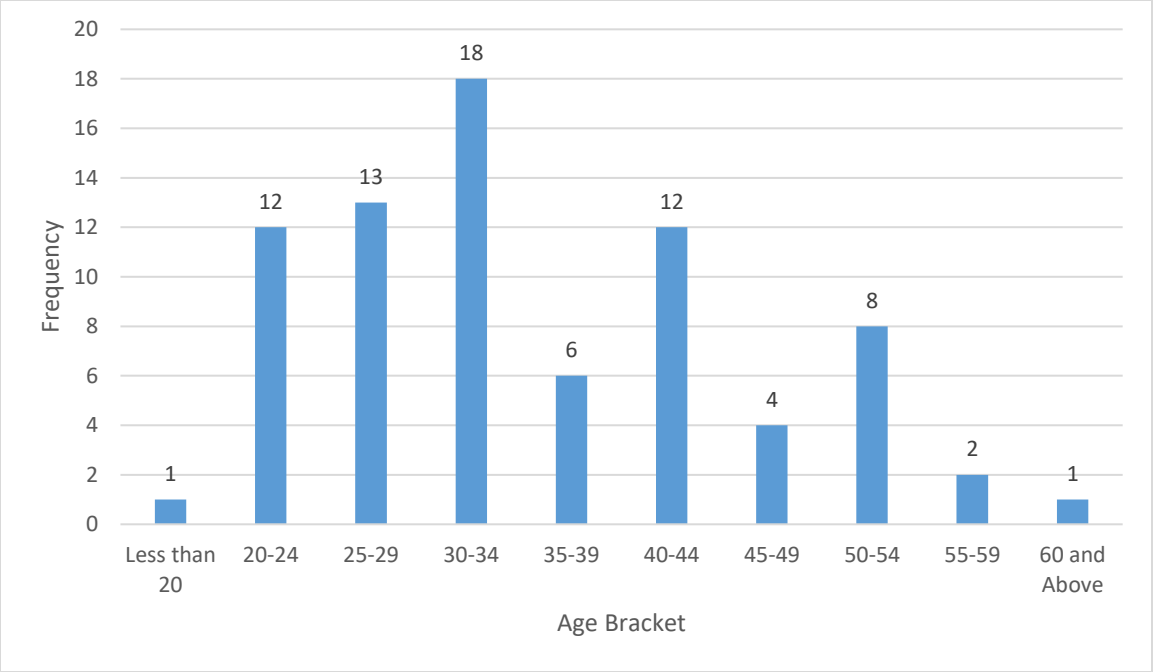

Fig. 4.5: Age structure of respondents
Source: Author's Field Survey, 2020

Regarding the sex structure, the male respondents constitute 30% while the female respondents constitute 70%. However, this is expected because of the level of health services (maternal and immunization of infants) rendered by the primary healthcare centres.

4.3.2.3 Educational Qualification of Respondent

The educational backgrounds of the respondents are also revealed in Fig 4.6. it displays that respondent with secondary education constituted the maximum proportion, which is 22%. Respondents who had acquired a Higher degree (Masters/Doctorate) accounted for 21%, while those in possession of either Higher National Diploma (HND) or university degrees followed with 18%. Respondents holding either National Diploma (ND) or National Certificate of Education (NCE) accounted for 17%, those with no formal education and those from Qur'anic school amounted to 10% and 7% respectively. A total of 5% of the respondents finished primary education.

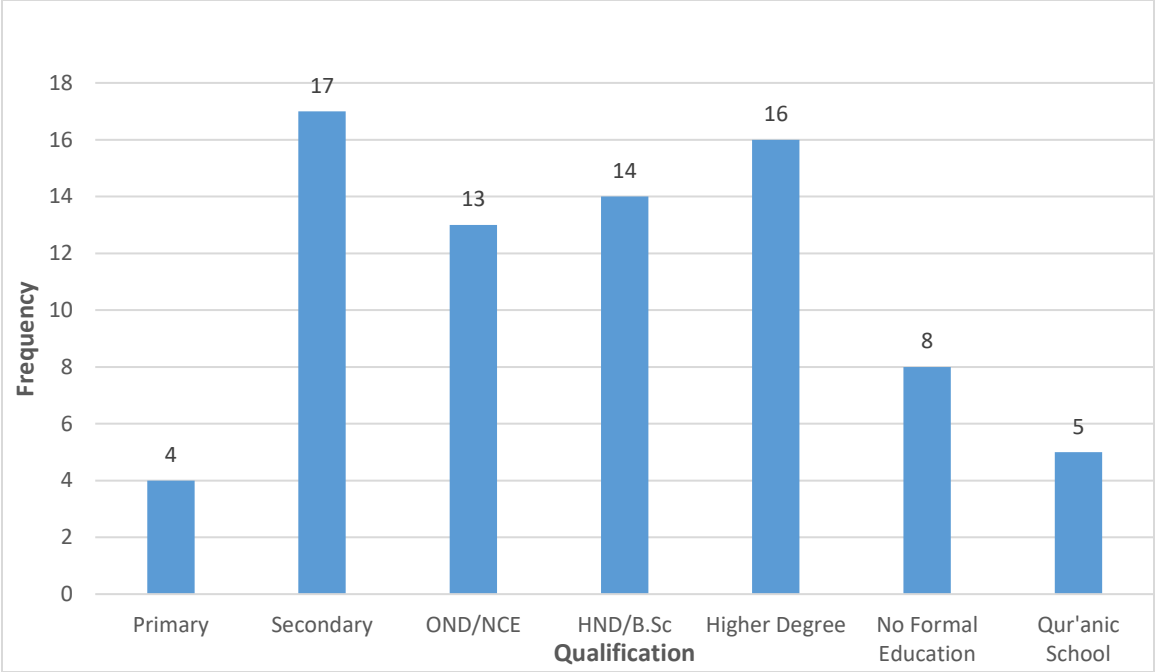

Fig. 4.6: Educational qualification of respondents
Source: Author's Field Survey, 2020

4.3.2.4 Occupation of Respondent

The occupation practiced by the respondents is shown in Fig 4.7. It parades that sizeable proportion (30%) of the respondents were engaged in numerous trading events, those among the respondents that were not employed instituted 22%, closely followed by the public/civil servants which constituted 21%, the students/apprentices amount to 13%, while 8% of the respondents were involved in farming and correlated activities like poultry and livestock ranching. Pensioners and artisans constituted 4% and 2% respectively.

As a result, the occupational characteristics of the respondents confirm that a significant fraction of the respondents work in the unorganized (informal) sector of the economy and a good percentage (22%) of the respondents are unemployed hence, they rely on beneficiaries for the financial cost of healthcare services received from the facilities.

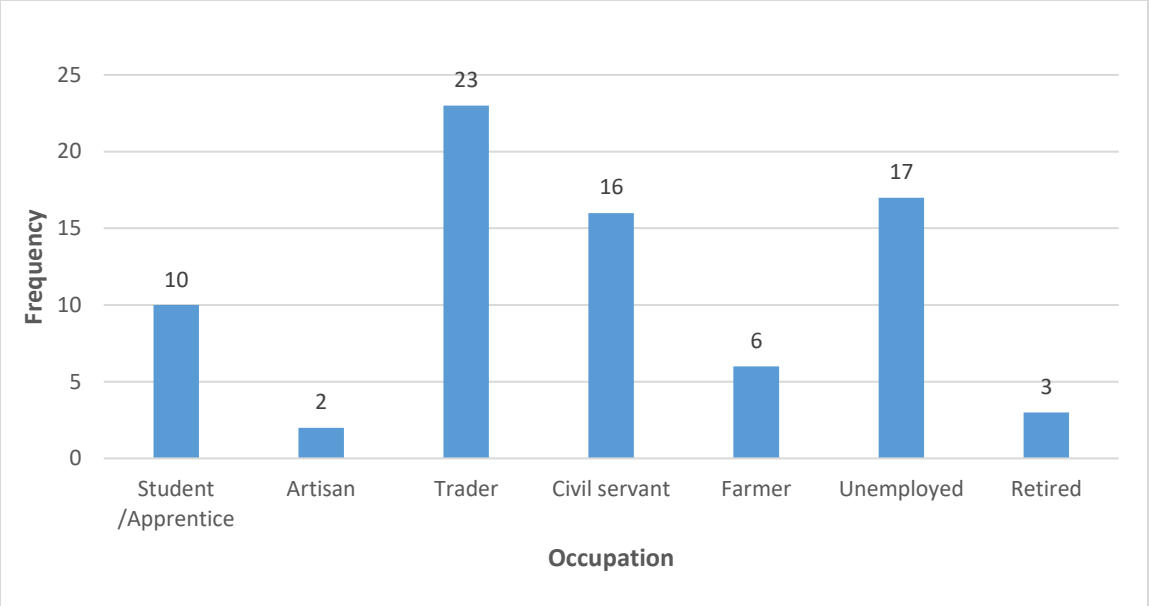

Fig. 4.7: Occupational practices of respondents
Source: Author's Field Survey, 2020

4.3.2.5 Monthly Income of Respondent

From the total of 77 respondents interviewed, 66% (51) were income earners while the remaining 34% (26) were not earners. The income structure of the earners is revealed in table 4.4. The table displays that those respondents making below N 10, 000 and between N 20, 000 and N 40, 000 monthly constituted 25% each which made up half the number of the earners, those within the income group of N 21, 000 – N 30, 000 constituted 18%, accompanied by those within the income group of N 31, 000 – N 40, 000, which was 12%, additionally 12% of the respondents earned between N 41, 000 – N 50, 000 monthly. Furthermore, 4% of the respondents earned above N 100, 000, accompanied by those within the income group of N 51, 000 – N 60, 000, which was 2%, and earners between the range N 41, 000 – N 50, 000 monthly account for another 2%. The income structure thus shows that about 69% of residents earned between eleven and sixty thousand Naira (N 11, 000 – N 60, 000) monthly.

Table 4.4: Monthly Income of Respondents

Income Level	Frequency	Percentage (%)
Below N 10, 000	13	17
From N11, 000 to N 20, 000	13	17
From N 21, 000 to N 30, 000	9	12
From N 31, 000 to N 40, 000	6	8
From N 41, 000 to N 50, 000	6	8
From N 51, 000 to N 60, 000	1	1
From N 91, 000 to N 100, 000	1	1
Above N 100, 000	2	2
Not Earning	26	34
Total	**77**	**100.0**

Source: Author, 2020

4.3.2.6 Years of Domicile in the Neighbourhood

Figure 4.8 depicts the length of time respondents have lived in their current neighbourhoods. Respondents who had lived in the same neighbourhood for more than five years made up 60% of the sample, while those who had been there for four years made up 14%. Respondents who had lived in the neighbourhood for two to three years made up 13% of the total, while those who had lived there for five years made up 9%. Those who had only lived for a year and those who had lived for less than a year made up 3% and 1% of the population, respectively.

The pattern of residency shows that after staying for at least five years, a reasonable number of respondents, more than half, had a good understanding of the healthcare delivery situation in their neighbourhoods and were thus well-positioned to assess the challenges faced when accessing healthcare services in their respective neighbourhoods.

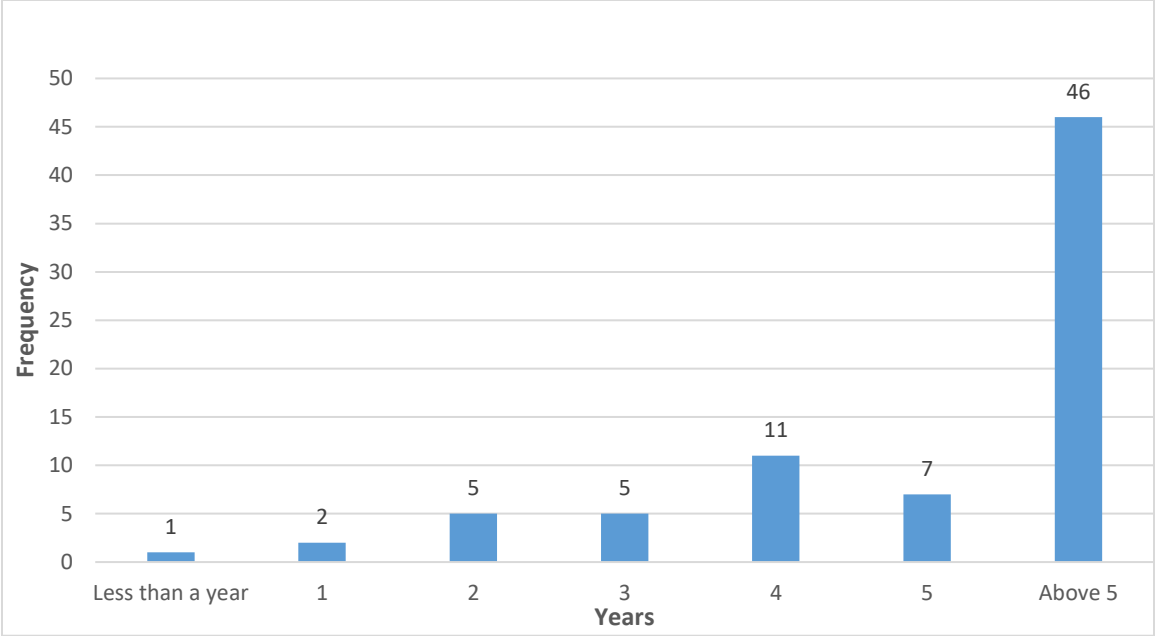

Fig. 4.8: Length of stay of respondents in their present neighbourhoods
Source: Author's Field Survey, 2020

4.3.2.7 Distance travelled to the Facility

The distance covered by the respondents to receive healthcare services is epitomised in Fig 4.9. The figure displays that 68% of the respondents covers a distance of less than a kilometre to get to the facility, those among the respondents that travels between 1-2km constituted 23%, followed by those that covers between 3-4km which constituted 7%, while only 2% of the respondents travels a distance of over 4km.

The chart of distance travelled by the respondents therefore, confirms that majority of the respondents (68%) are within a walkable distance from the healthcare facilities. As shown in Figure 4.2 and 4.3, most the respondents reside within the facility service radius of 1km while 32% of the respondents are not within the service radius of the facilities under investigation.

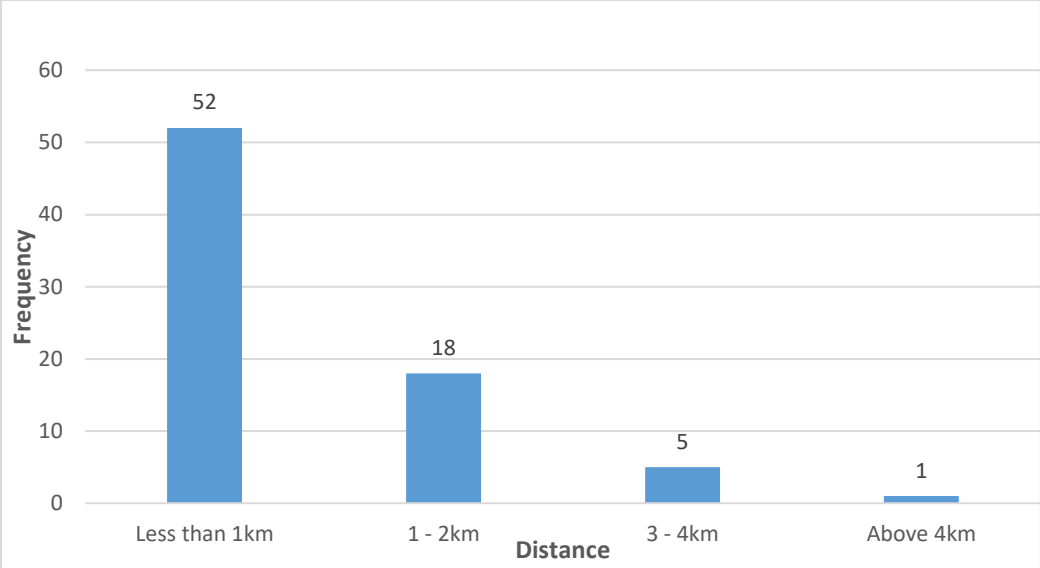

Fig. 4.9: Distance covered to access the facilities
Source: Author's Field Survey, 2020

4.3.2.8 Respondents Preferred Type of Healthcare Facility

As made known in Fig. 4.10, during the study carried out it was discovered that 68% of the respondents prefer to use primary health centre. 23% of the respondents' preferred type of healthcare facility was a private hospital/clinic while the remaining 9% of the respondents prefers to access birth centre/maternity.

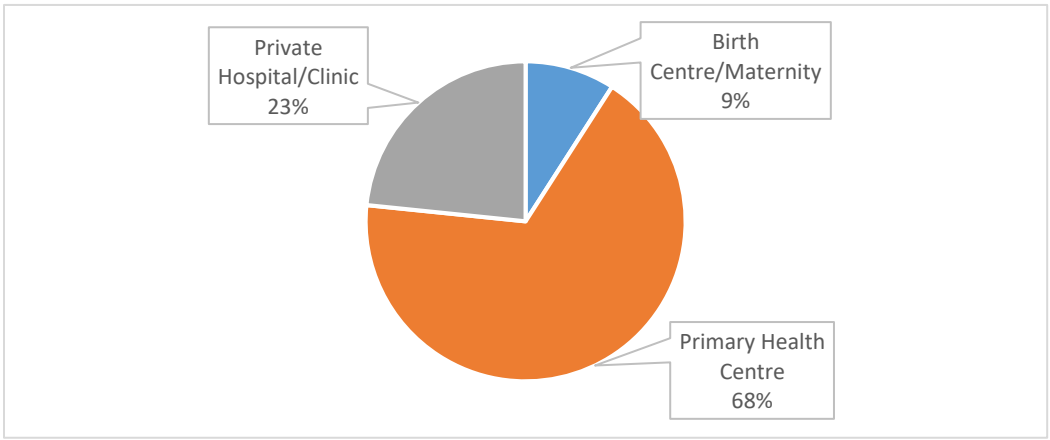

Fig. 4.10: Preferred type of health facility
Source: Author's Field Survey, 2020

4.3.2.9 Reason for the Preferred Type of Healthcare Facility

As epitomised in Fig. 4.11, 49% of the respondents indicates their favoured type of healthcare facility for the reason that it was close to them and out of this percentage, twenty-six were referring to primary health care, eight were referring to private hospital/clinic, four were making reference to birth centre/maternity. 17% of the respondents selects their preferred type of healthcare facility for their own personal preference and out of this percentage, nine people were referring to primary health care, two were referring to private hospital/clinic, also another two were making reference to birth centre/maternity. 14% of the respondents indicates their favourite type of healthcare facility for the purpose that it was affordable and out of this fraction, eight were denoting to primary health care and two were referring to private hospital/clinic while one was referring to birth centre/maternity. 10% of the respondents chooses their desired type of healthcare facility for the reason that it offers better services. Here seven persons made reference to primary health care while only one individual was signifying to private hospital/clinic. 7% of the respondents indicates their favoured type of healthcare facility was based on the fact that it was both close and affordable and out of this percentage, three were referring to private hospital/clinic and two were referring to primary health care. Lastly, 3% of the respondents chooses their preferred type of healthcare facility based on the that it was both close and offers better services and the whole of this percentage were referring to private hospital/clinic. From the data above, it shows that only primary health care is preferred mostly because of its proximity, affordability, nature of services rendered and personal preference on the side of the respondents. It can be further deduced that both primary health care and private hospital/clinic are closer than the other type. It can therefore be said

that people prefer healthcare facilities that are close to them since 49% made their choice based on reason that the facilities were close.

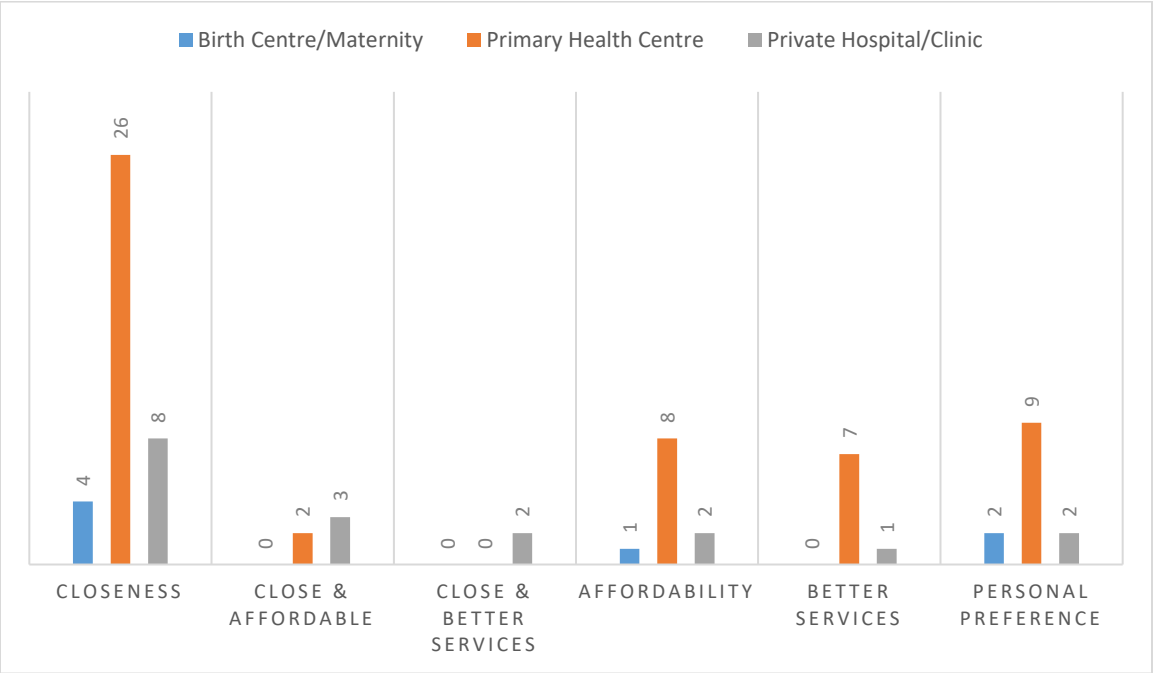

Fig. 4.11: Reason for the preferred type
Source: Author's Field Survey, 2020

4.3.2.10 Mode of Transport to Facility

The mode or choice of transport is a determinant in accessibility of the healthcare service provided. It also determines how fast a resident can get to the healthcare facility in case of emergency due to absence of an emergency response system especially in the slum areas where accessibility to facilities is a major problem. The study consequently, pursued to know the mode of transportation frequently used by respondents to access the facilities. Figure 4.12 demonstrates that 35% of the respondents frequently visit the health centre on foot, 31% in their personal vehicles, and 22% made use of commercial motorcycles popularly known as "Okada", 9% made use of commercial taxis while only 3% access the facilities using public buses.

The data on the mode of transport used by the respondents confirms that most of the respondents (35%) access the healthcare facilities on foot coupled with fact that the preferred choice of healthcare facility is based on its proximity. It further shows that people farther away from the health facilities are less likely to access such facilities because of the distance as reflected in Fig 4.9 that only 2% travelled a distance of over 4km to get to the facilities.

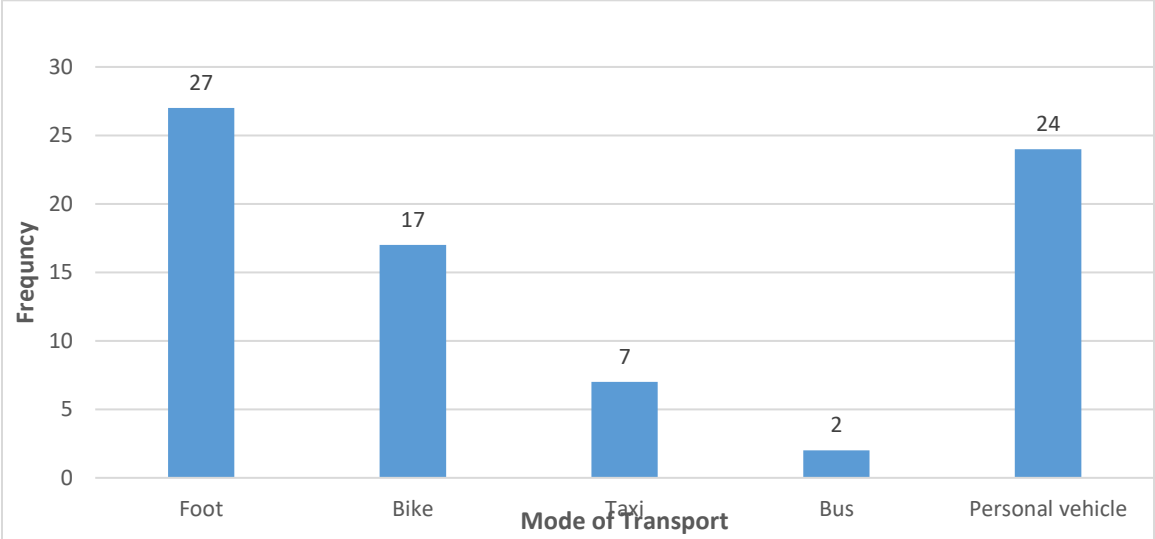

Fig. 4.12: Mode of transport to facility
Source: Author's Field Survey, 2020

4.3.2.11 Cost of Transportation to Facility

As shown in Figure 4.13, 64% of the respondents reviewed that they accrue no cost in getting to the healthcare facility and out of this percentage, twenty-seven (27) accesses the facilities on their foot while twenty-two (22) uses their personal vehicles to access the facilities. 31% of the respondents spends between 50 – 100 Naira to get to the healthcare facility and out of this percentage, fifteen (15) people access the facility using commercial bikes, seven (7) uses taxis while two (2) used bus as their mode of transport. Only 5% of the respondents spends between 101 – 150 Naira to get to the healthcare facility.

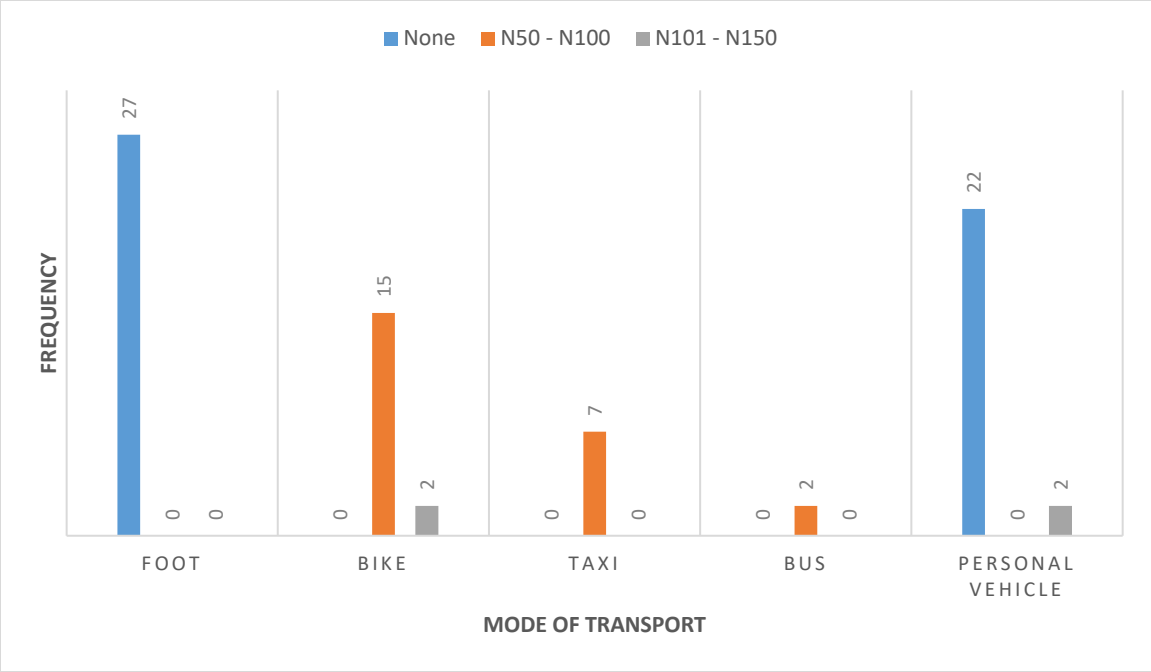

Fig. 4.13: Cost of transportation
Source: Author's Field Survey, 2020

4.3.2.12 Time Taken to Access Facility

As shown in Fig. 4.14 below, it took 57% of the respondents below 15 minutes to get to the healthcare facility and out of this percentage, sixteen (16) accesses the facilities on their foot, eleven (11) people access the facility using commercial bikes, ten (10) uses their personal vehicles to access the facilities, six (6) used taxi as their mode of transport while only one (1) access the facility in a bus. 35% of the respondents spends between 15 – 30 minutes to get to the healthcare facility and out of this percentage, twelve (12) uses their personal vehicles to get to the facilities, eight (8) people get there on their foot, five (5) access the facility on commercial bikes, one (1) uses taxis while one (1) used bus as their mode of transport. Only 8% of the respondents took between 31 – 40 minutes to get to the healthcare facility and out of this percentage, three (3) travelled on their foot, two (2) with their personal vehicles while the remaining one (1) used commercial bike.

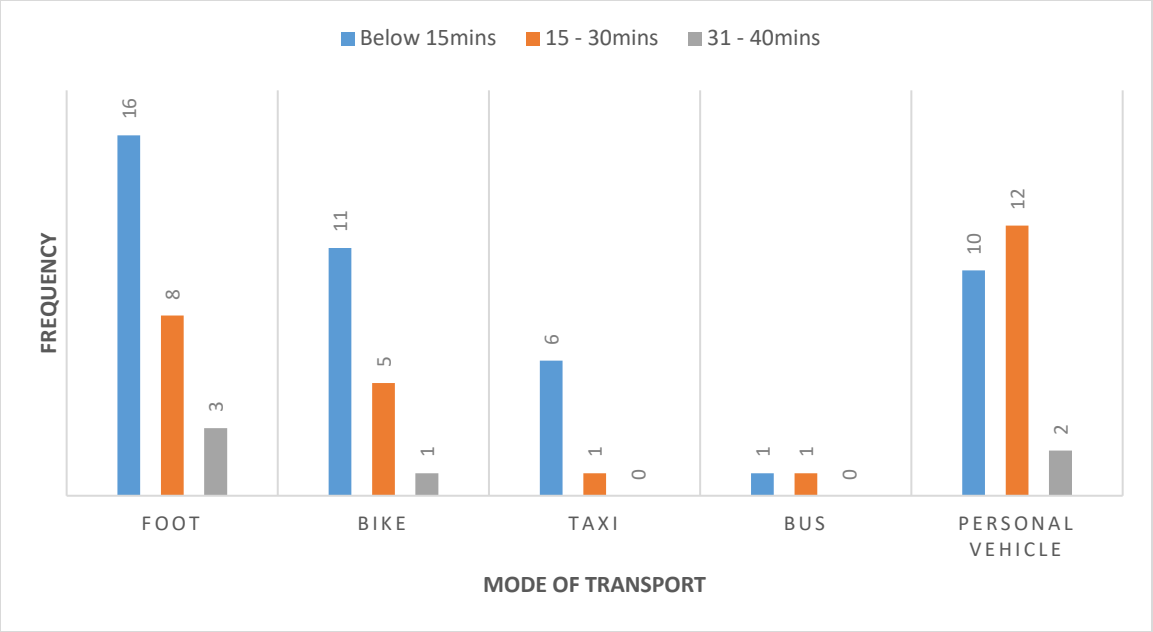

Fig. 4.14: Time taking to access health facility
Source: Author's Field Survey, 2020

4.3.2.13 Respondent's Perception of Facility's Major Problem

As publicised in Fig. 4.15, 41% of respondents were of the opinion that the healthcare facilities are suffering from lack of adequate equipment. 15% of respondents believed the healthcare facilities have other problems like unavailability of drugs, limited space for patients and small size of the facility itself. 13% of respondents voted for inadequate staff as the major problem faced by the healthcare facilities. 11% of respondents were of the view that the healthcare facilities' problem is mismanagement of the facilities while another 11% of respondents said that the presence of quacks is the major problem. 5% of the people were of the opinion that the facilities are facing both problems of inadequate staff and lack of adequate equipment while the remaining 4% of the people opined that fake drugs were the major problem of the healthcare facilities.

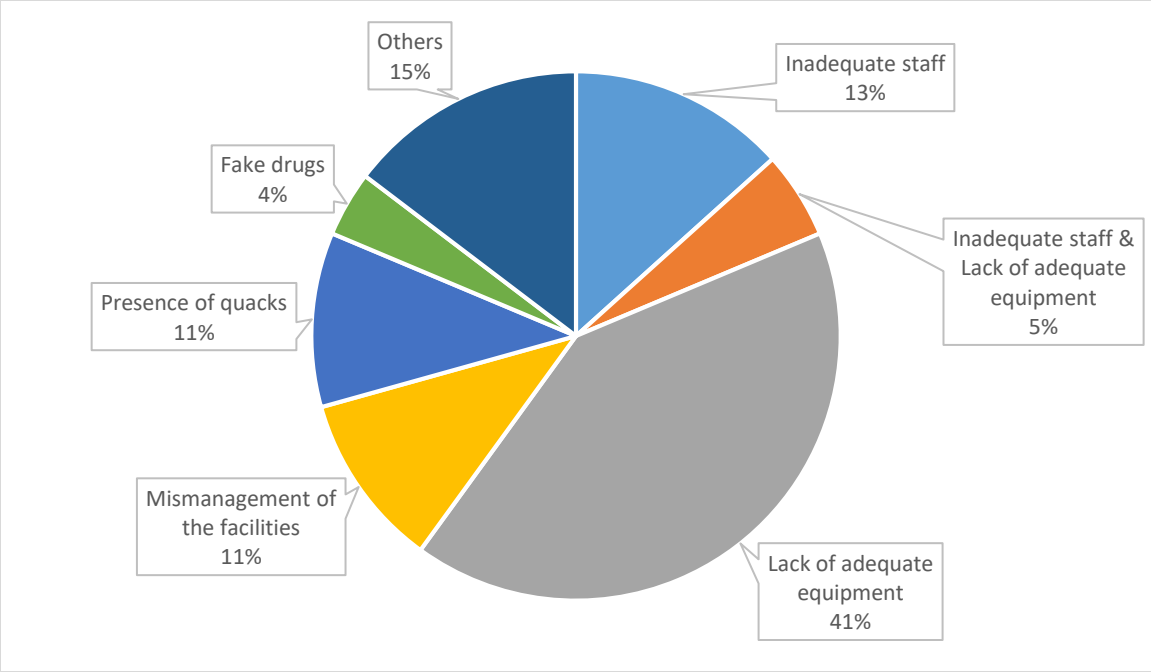

Fig. 4.15: Perception on major problem faced by healthcare facilities
Source: Author's Field Survey, 2020

It was also reported that bad roads especially during the raining season, traffic congestion, absence of an emergency transport (ambulance), inadequate facilities and stress were the challenges encountered by some of the respondents in accessing health facilities within the neighbourhoods while the challenges encountered in receiving healthcare service within the facilities include; time wasting, lack of electricity and inadequate space for out-patients to wait.

4.4 Type of Healthcare Facilities in The Study Area

This sub-section displays and discuss the types of healthcare facilities available in the neighbourhood. Four (4) basic types of healthcare facilities were identified for the purpose of the study because it was deduced that they were the only recognised types of healthcare facilities which are readily available within residential neighbourhoods (Ademiluyi & Aluko-Arowolo, 2009). Respondent's perception on type health facility needed within the

neighbourhood was also presented and discussed as this gave an insight into health facility needs of the people and the city at large.

4.4.1 Types of Healthcare Facilities Available in the Neighbourhood

In addition to the primary health centre under study, private hospital/clinics and dispensaries were also identified as types of healthcare facilities within the neighbourhoods. As represented in Fig. 4.16, Bosso town has two primary health centre, two private hospital/clinic and one dispensary while Jikpan was hosting one primary health centre, one specialist clinic and two dispensaries. Two primary health centre, two private hospital/clinic as well as two dispensaries were located within Dutsen-Kura while only a primary health centre, a private hospital/clinic and a dispensary were found in each of both Kpakungu and Fadikpe. Barkin Saleh only had a PPFN centre and two private clinics.

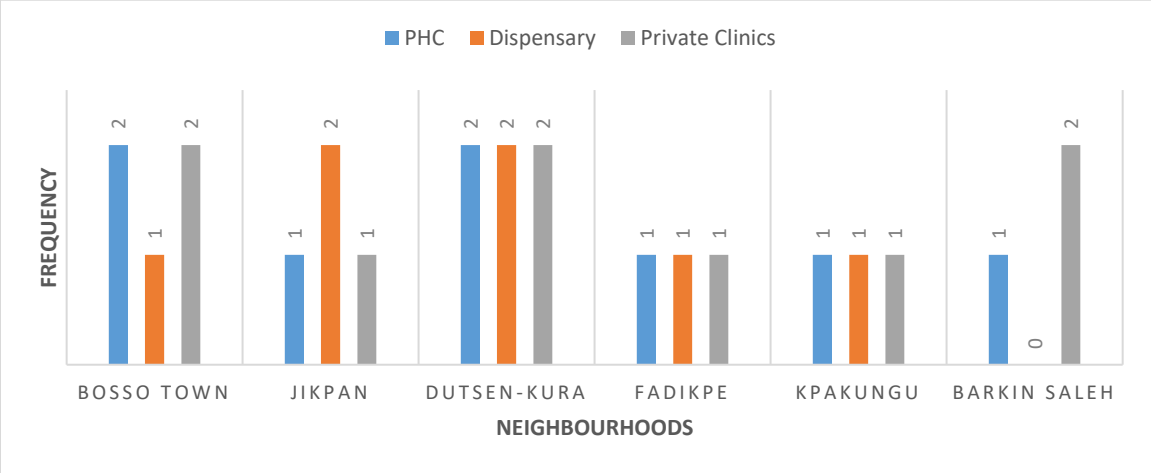

Fig. 4.16: Identified types of healthcare facilities
Source: Author's Field Survey, 2020

4.4.2 Respondent's Perception on Type Health Facility Needed in the Neighbourhood

The wholistic report during the cause of the study as represented in Fig. 4.17 above, it was revealed that twenty-five (25) of the respondents believed that they needed private hospital/clinic. Twenty-two (22) of the respondents' recommended type of healthcare facility was a birth centre/maternity while twenty-one (21) of the respondents opined that more primary health centres were needed.

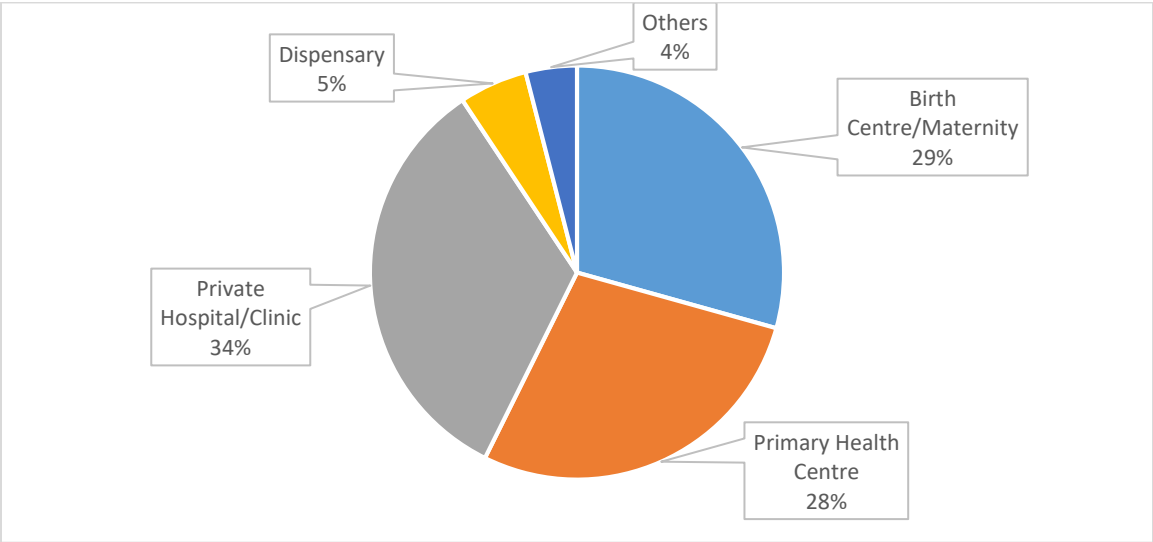

Fig. 4.17: Perception on type health facility needed
Source: Author's Field Survey, 2020

Four (4) of the respondents' required type of healthcare facility was dispensary while three (3) of the respondents believed that the existing primary health centres should be expanded and better facilities than the ones available should be provided.

When the perceptions of the respondents on type health facility needed was cross-examined with the neighbourhood in which they reside, it was revealed as displayed in Fig. 4.18 below, that majority of the respondents from Bosso town opined that they needed both private clinics and birth centres. Most of the respondents from Dutsen-Kura felt more primary health centre

and birth centres should be provided while those from Kpakungu widely held that private clinics should be provided in their neighbourhood. Respondents from Fadikpe leaned more towards primary healthcare and private clinics for their neighbourhood.

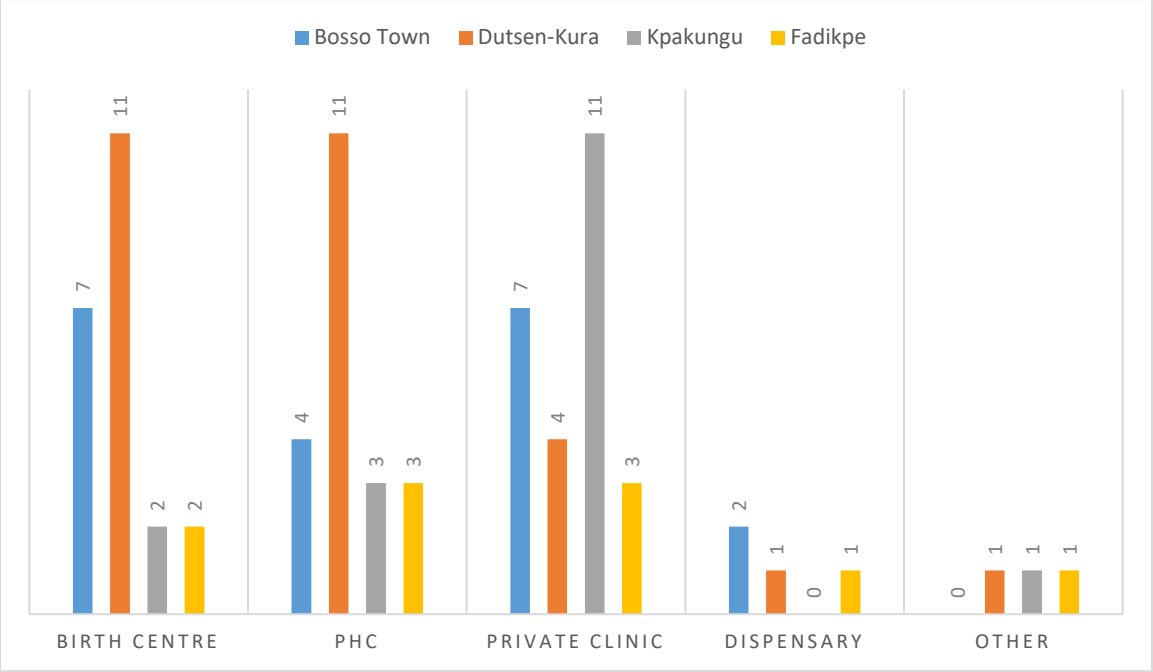

Fig. 4.18: Recommended health facilities across neighbourhoods
Source: Author's Field Survey, 2020

4.5 Total Findings

This research scrutinised the major types of healthcare facilities within the numerous slum areas of Minna, list and location as well as the spatial distribution of the facilities. A total number of six primary healthcare facilities were identified in the selected neighbourhoods and were mapped out. The facilities under study were located along the major streets passing through the neighbourhood which in most cases do not cut across the entire neighbourhood therefore the facilities were not evenly and properly distributed or situated to cater for the needs of residents in the different locations of the neighbourhoods although the management of all but PHC Dusten Kura Gwari opined that the distribution was adequate.

Among others, the study established that the primary health facilities were not centrally located within the neighbourhood and also reveals some locations that are void of the presence or influence of the health facilities because such areas were not covered by the radius of health facilities. The study revealed that only a few portions of the neighbourhood had access to the health facilities by foot (within 500m of the facilities), leaving majority of the residence not having access by foot. With a radius of 1km, intersection of the circle of influence was observed in the research area.

The research further recognised that the physical condition of the healthcare facilities and the environment around them varied among the neighbourhoods of the study area. While the primary health centres were not in bad condition physically, the paint on some of the external walls were coming off due to harsh weather and time and some ceiling board were falling off. It was also observed that only two PHCs had access from a tarred road with the roads leading to the other PHCs not paved and in bad condition.

The study revealed that preference of secondary healthcare facilities, lack of adequate facilities and equipment to cater for the client's needs, lack of understanding from the patient's relatives, too much misinterpretation (difficulty in effective communication), inadequate manpower, poor electricity supply, lack of potable water supply, lack of space and delay in rendering services were the challenges encountered in the delivery of healthcare services in the neighbourhood.

Similarly, the survey indicated variable degrees of socioeconomic features of health facility out-patients among neighbourhoods. For example, income level of the inhabitants is comparatively low in neighbourhoods, while the average distance travelled, preferred type of

facility and their reason for preference, mode of transport and cost of transportation to the facilities such as primary health centre and private clinics as well as the time taken to access the facilities also varied among neighbourhoods. Bad roads especially during the raining season, traffic congestion, absence of an emergency transport (ambulance), inadequate facilities and stress were the challenges encountered by some of the respondents in accessing health facilities within the neighbourhoods while the challenges encountered in receiving healthcare service within the facilities include; time wasting, lack of electricity and inadequate space for out-patients to wait.

The study finally exposed the four basic types of healthcare facilities which were identified based on the deduction that they were the only recognised types of healthcare facilities which are readily available within residential neighbourhoods. The functions of the primary health centres as a first point of call to treat common illnesses of the residents was also highlighted. Respondent's perception on type health facility needed within the neighbourhood of which majority felt they needed more private clinics was also presented and discussed as this gave an insight into health facility needs of the people and the city at large.

4.6 Summary of Findings

The research findings are given under three primary subheadings: nature of healthcare facilities in slum settlements, problems of healthcare facilities in the study region, and kind of healthcare facilities in the study area.

4.6.1 Nature of Healthcare Facilities in Slum Settlement

4.6.1.1 List and Location of Healthcare Facilities in the Study Area

The list of the identified healthcare facilities shows that six (6) healthcare facilities were located within Dutsen-Kura Hausa and Dusten-Kura Gwari, five (5) in Bosso Town (Anguwan Sarki and Anguwan Biri), four (4) in Jikpan while there were three (3) facilities in Fadikpe, three (3) facilities in Kpakungu and three (3) facilities in Barkin Saleh neighbourhoods. Also, the locations (coordinates) of the government-owned healthcare facilities within the selected neighbourhoods which was the focus of the study were acquired and presented in tables.

4.6.1.2 Spatial Distribution of Healthcare Facilities in the Study Area

From the interview conducted with the management of the primary healthcare centres, those of Dutsen-Kura Hausa, Kpakungu and Fadikpe opined that the facilities within the neighbourhood were adequately distributed due to the population of the area and the health needs of the people, they also stated that they had adequate personnel needed to provide treatment for minor ailment and first step treatment they are required to provide for the people. Bosso stated that they were in need of other types of healthcare facilities though they had adequate primary healthcare centres with trained staff but were in need for basic healthcare centres with doctors and mini surgical theatres. Dutsen-Kura Gwari held that facilities in the neighbourhood were inadequately distributed because of the inability to cater for the health needs or demands of the patient at some given time.

However, from the list of facilities identified, it was revealed that both Kpakungu and Fadikpe had a primary health centre each while Bosso town and Dusten Kura both have two existing primary health facilities within their neighbourhood. The facilities were observed to be unevenly

distributed to cater for the needs of residents in the different locations of the neighbourhoods. This was attributed to the fact that all of the facilities under study were located along the major streets passing through the neighbourhood which in most cases do not cut across the entire neighbourhood or the streets are located at one end of the area. It was further argued that there was possibility that the settlements were not as big as they are now as of the time of the establishment of these facilities. Additionally, these facilities were also located close to the residence of the ward head within such neighbourhood therefore making such facilities not equally accessible to all residents.

4.6.1.3 Service Radii of the Healthcare Facilities

Spatial analysis of the primary healthcare centres was undertaken using a radius of 500 metres and 1 kilometre, the result showed that the primary health facilities were not centrally located within the neighbourhood because their radius did not spread evenly from the facility to all part of the settlement. It was further confirmed that some locations did not feel the influence of the health facilities because they were not covered by the radius of these facilities. It was determined that access to health facilities from such areas would most probable be a delinquent for the reason that individuals would be compelled out of their choice of using the provided healthcare centre in order to diminish conveyance costs, time expended accessing the healthcare facilities, and even late response to emergency cases from those locations.

4.6.1.4 Conditions of the Facilities

From physical observation, it was revealed that the healthcare centre were not in bad condition physically though paint on the external walls (wall finishing) were coming off due to harsh weather and time as in the case of the structure in Dusten Kura Hausa and ceiling board falling

off as observed in the facility in Anguwan Biri, Bosso, generally, the structure were in good condition. On the nature of road accessibility to the facilities, it was observed that only two facilities namely Bosso II and Dusten Kura Hausa pick access from a tarred road, the roads leading to the other PHCs were not paved and in bad condition.

4.6.2 Challenges of Healthcare Facilities in the Study Area

4.6.2.1 Challenges Faced by The Facilities in Healthcare Delivery

From the management of the facilities, it was stated that preference of secondary healthcare facilities, lack of adequate facilities and equipment to cater for the client's needs, lack of understanding from the patient's relatives, too much misinterpretation (difficulty in effective communication), inadequate manpower, poor electricity supply, lack of potable water supply, lack of space and delay in rendering services were the challenges encountered in the rendering of services for healthcare inside the neighbourhood.

4.6.2.2 Socio-economic Characteristics of Patients and Challenges Faced in Accessing Healthcare Services

From the questionnaire administered, most of the respondent were female within the age of thirty to thirty-four with secondary education qualification and were mostly traders. It was discovered that most of them travel less than a kilometre to access the facilities. It was also revealed that primary health centre was the most favoured type of healthcare facility and likewise the category that is used more regularly because of its proximity to them. Due to the closeness, most respondent access the facilities on foot therefore incurring no further cost in terms of transportation and this process took them below fifteen minutes to get the facility.

On respondents view of the facility's major problem, majority opined that the healthcare facilities were suffering from lack of adequate equipment while others believed unavailability of drugs, limited space for patients and small size of the facility itself, inadequate staff, mismanagement of the facilities, presence of quacks and fake drugs were the major problem of the healthcare facilities.

Bad roads especially during the raining season, traffic congestion, absence of an emergency transport (ambulance), inadequate facilities and stress were the challenges outlined by some of the respondents in accessing health facilities within the neighbourhoods while the challenges encountered in receiving healthcare service within the facilities include; time wasting, lack of electricity and inadequate space for out-patients to wait.

4.6.3 Type of Healthcare Facilities in the Study Area

4.6.3.1 Types of Healthcare Facilities Available in the Neighbourhood

Four (4) basic types of healthcare facilities were identified for the purpose of the study because it was deduced that they were the only recognised types of healthcare facilities which are readily available within residential neighbourhoods. Of these types, Bosso town has two primary health centre, two private hospital/clinic and one dispensary while Jikpan was hosting a primary health centre, one specialist clinic and two dispensaries. Two primary health centre, two private hospital/clinic as well as two dispensaries were located within Dutsen-Kura while only a primary health centre, a private hospital/clinic and a dispensary were found in each of both Kpakungu and Fadikpe. Barkin Saleh only had a PPFN centre and two private clinics.

4.6.3.2 Perception on Type Health Facility Needed in the Neighbourhood

From the questionnaire administered, majority voiced that private hospital/clinic were needed while birth centre/maternity was second on the list with primary healthcare centre third and dispensary last. Some respondents believed that the existing primary health centres should be expanded while others opined that, better facilities than the ones available should be provided in the neighbourhood.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

An evaluation of the healthcare facilities in the selected slum neighbourhoods of Minna, Niger state, must, to a considerable extent, uncover specific concerns and features illustrating the existing healthcare delivery system in the study area. Having followed that, this chapter explained the major planning component of this investigation by having an integrated succinct summation from the earlier sections of all key discoveries related to this research with the purpose of attaining possible answers to the questions by making appropriate recommendations on potential future procedures that, if executed properly, will make healthcare system in the study area accessible.

5.3 Conclusion

The demands of good health care facilities and services have become more on the increase particularly in slum neighbourhoods and peri-urban. Issues pertaining accessibility and availability has been in the fore front. As a result, there is a greater need for the health system to expand its coverage in order to fulfil the ever-increasing and changing need and inclination of patients, as well as advancing medical technology. The study revealed that the existing primary health centres in Minna's slum neighbourhoods are insufficient and unevenly distributed, and that supporting facilities such as electricity and drinkable water, as well as equipment and staff, are in low supply and, in some cases, unavailable.

As a result of these deficiencies and knowing the elements that influence service delivery and patient patronage is critical to meeting the ever-increasing health requirements of all

socioeconomic classes in Minna. As a matter of fact, there is a need to advance primary healthcare system services, in order to accomplish health-related Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC).

5.4 Recommendations

The following recommendations are aimed at facilitating and addressing healthcare shortage in the slum areas in Minna.

i. Provision of at least a primary healthcare centre at strategic locations (where the influence of the existing ones are not felt) in the five neighbourhood understudy to increase accessibility and improve the coverage of the primary healthcare scheme which is known to be the front door of the health system.

ii. While providing, the location of the new facilities should be sited closer to the people using a minimum of 500 metres between facilities so as to reduce distance travelled.

iii. To promote better and proper utilisation of the facilities, the relevant authorities should conduct comprehensive public awareness campaigns to improve knowledge of patients' families and the general public, as well as stimulate community participation in the management of such facilities.

iv. Due to the capital-intensive nature of the primary health care system, it is suggested that the government strengthen its collaboration with local and international organizations in order to provide quality pharmaceuticals, current equipment, and more staff training in the treatment and management of recent diseases like COVID 19.

v. The facilities in Bosso II and Dusten Kura Hausa should be expanded to have more space both for out-patients and vehicles to enable efficient delivery of services.

vi. Provision of portable water and stable electricity to enable smooth operation of the primary health centres.

vii. Enlightenment of the slum dwellers to accept illnesses as undesirable and to seek for treatment on time and to also listen attentively to information pass on to them and follow instruction on medications.

viii. Development of the primary health care system as a multi-sectoral framework of measures and activities designed to address the upstream and broader health determinants, motivating and supporting communities, families, and societies for increased social participation, and improving self-care and self-reliance in health.

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APPENDIX I

QUESTIONNAIRE ON: *THE ASSESSMENT OF HEALTHCARE FACILITIES IN SOME SELECTED SLUM AREAS OF MINNA, NIGER STATE*

Dear Respondent,

I am a Master's student of the Federal University of Technology, Minna and your assistance is required in providing information regarding the distribution and intervention areas in addressing healthcare shortage in the slum areas in Minna, Niger State. All information supplied will be used purely for this academic purpose and shall be treated with utmost confidentiality. Please, kindly tick (✔) from the options provided. **Thank You**

QUESTIONNAIRE FOR THE PATIENTS IN THE HEALTHCARE FACILITIES

PERSONAL DATA

1. Place of residence (a) Bosso town__ (b) Jikpan___ (c) Kpakungu__(d) Barkin-Saleh___.
2. Gender (a) Male_____ (b) Female_____
3. Age in years (a) less than 20_____ (b) 20-24__ (c) 25-29____ (d) 30-34___ (e) 35-39_____ (f) 40-44_____ (g) 45-49_____ (h) 50-54__ (i) 55-59_____ (j) 60 and above_____.
4. Marital Status (a) Single_ (b) Married__ (c) Divorced__ (d)Separated__ (e) Widowed___
5. Highest level of education (a) Pri. sch__ (b) Sec. sch__ (c) OND/NCE___ (d)HND/BSc__ (e) PG Degree__ (f) No formal education___ (g) Quranic school__.
6. Occupation (a) Student/ apprentice_____ (b) Artisan_____ (c) Trader_____ (d) Civil Servant_____ (e) Farmer_____ (f) Unemployed_____ (g) Retired_____
7. Income Per Month (in Naira)

Income	
a	Below 10,000
b	11,000 – 20,000
c	21,000 – 30,000
d	31,000 – 40,000
e	41,000 – 50,000
f	51,000 – 60,000
g	61,000 – 70,000
h	71,000 – 80,000
i	81,000 – 90,000
j	91,000 – 100,000
k	Above 100,000

8. Years of domicile in the Neighbourhood (in years). (a) Less than a year_____ (b) 1_____ (c) 2_____ (d) 3_____ (e) 4_____ (f) 5_____ (g) above 5_____

9. What health facility do you have in your Neighbourhood? (a) Birth Centre /Maternity_____ (b) Primary health centre_____ (c) Private hospital/Clinic_____ (d) Dispensary_____.
10. What is the distance from your location to these Health facilities?

Health facilities	**Distance travelled**			
	Less than 1km	1 - 2km	3 - 4km	Above 4km
Birth Centre /Maternity				
Primary Health Centre				
Private Hospital/Clinic				
Dispensary				

11. Which health facility do you go to for medical services (a) Birth Centre /Maternity___ (b)Primary Health Centre____ (c) Private Hospitals/ Clinics____ (d) Dispensary____
12. Why do you prefer this facility? (a) It is the closest to me_____ (b) It is the most affordable_____ (c) They render better services_____ (d) Personal preference_____ (e) others, Specify _____
13. What is your mode of transport to the health facilities? (a) Foot____ (b) Bike_____ (c) Taxi_____ (d) Bus_____ (e) Personal vehicle_____.
14. What is the transportation cost in accessing the medical facility (in Naira) (a) None_____ (b) 50-100__ (c) 101-150__ (d) 151-200__ (e) 201-250_ (f) 251-300__ (g) Above 300__.
15. What is the time taken to access medical facility in minutes? (a) Below 15_____ (b) 15-30_____ (c) 31-40_____ (d) 41-50_____ (e) 51-60_____ (f) Above 60_____.
16. What other challenges do you encounter in accessing health facilities in your Neighbourhood? List _____
17. What challenges do you encounter in receiving healthcare services within the health facilities in your Neighbourhood? List _____
18. What is major the problems of the health facilities in your neighbourhood? (a) Inadequate staff__ (b) Lack of adequate equipment__ (c) Mismanagement of the facilities__ (d) Presence of quacks __ (e) Fake drugs__ (f) Others Specify _____
19. In your opinion, what type of healthcare facility do you need in your neighbourhood? (a) Birth Centre /Maternity_____ (b)Primary Health Centre____ (c) Private Hospitals/ Clinics____ (d) Dispensary_____ (e) Others Specify_____

Thank you for your time

APPENDIX II

INTERVIEW GUIDE ON THE ASSESSMENT OF HEALTHCARE FACILITIES IN SOME SELECTED SLUM AREAS OF MINNA, NIGER STATE

FOR THE MANAGEMENT OF THE HEALTHCARE FACILITIES

This interview is strictly for academic purpose. No respondent or the organization he/she represents will be identified by name in the report without his/her consent. Your input to the discussion in the following areas regarding the assessment of health facilities would be highly appreciated.

1. Location _____ Coordinates _____, _____.

2. What type of health facility is this? (a) Birth centre/Maternity_____ (b) Primary health centre_____ (c) Private hospital/Clinic_____ (d) Dispensary_____.

3. How do you assess the distribution of health facilities in the area? (a) Adequate_____ (b) Inadequate_____ (c) Need twice the present number_____ (d)We need other types_____

4. State your reason for your option selected

_____
_____
_____

5. What are the challenges in the distribution of health facilities in this neighbourhood?

6.What measures do you propose to address the challenges stated above?
_____
_____
_____

7. What challenges do you encounter in delivering healthcare services in the neighbourhood?

_____
_____
_____

8. What measures do you propose to address the challenges stated above?
_____
_____
_____

Thank you for your time.