



Research Paper

Analysis of Healthcare Facilities in Zaria Local Government Area, Kaduna, Nigeria

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ABSTRACTS

This study accesses the location of healthcare facilities in Zaria Local Government Area. It focused on the availability, ownership, type, spatial distribution, and capabilities of the healthcare facilities. The results revealed that there are 54 healthcare facilities spread across the 13 wards of the study area with two non-functional public primary healthcare facilities. It further showed that there are two tertiary (public) healthcare facilities, three secondary (private) healthcare facilities, one secondary (public) healthcare facility, and 46 primary (public) healthcare facilities functioning in Zaria Local Government Area. It also revealed that the healthcare facilities are clustered within the study area. The result also showed that 13.5% of the healthcare facilities have very good capabilities while 86.5% are in need of attention for efficient service delivery. The healthcare facilities although are available in sufficient quantity, they do not have the capabilities to provide healthcare services with required quality. The study therefore recommends that there should be strict penalties on healthcare facilities that fail to meet the minimum standard of healthcare facilities by Government.

KEYWORDS: Healthcare facilities, Capabilities, Public, Private

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I. INTRODUCTION

Health is necessary for people to be able to enjoy and appreciate all other aspects of life, it is a key to community wellbeing and to personal welfare (Knox, 1979; Gerard 2015). An effectively functioning healthcare system requires a robust financing mechanism, a well-trained and adequately paid workforce, reliable information on which to base decisions and policies, well maintained healthcare facilities, logistics to deliver quality medicines and technologies. A healthcare can be described based on cultural, political organizational and disciplinary perspective (Danjuma, 2015).

A facility is a place where a certain function is carried out, it could be an amenity or a piece of equipment provided for a particular purpose to make the function easier to perform. It is an amenity that helps for effective and efficient delivery of service. Healthcare facilities include hospitals, primary healthcare centers, isolation camps and burn patient units (Van, 2015). Health is a very significant element to man's existence and its unavailability or inadequacy can lead to drastic outcomes such as rise in mortality rate (WHO, 2006). Attention on social indicators of health such as education, economic stability, community stability as well as presence of adequate housing and healthful food shows their relation with healthier population. (Office of Disease Prevention and Health Promotion (ODPHP), 2017)

Healthcare facility is defined as all units owned by public and private authorities as well as voluntary organizations that provide healthcare services including hospitals, maternity and healthcare centers (Onokerhoroyaye, 1999). Healthcare facility is a place where healthcare service is provided, it serves as the first point of contact between a patient and a healthcare provider. The size of a healthcare facility is determined by its workload and patient load (Julius, 2014). Healthcare facilities may be described based on the type of care rendered, which include primary, secondary or tertiary healthcare facilities. The primary healthcare facilities provide immediate care; the secondary provides mostly referral services and the tertiary provides advanced healthcare services usually in large buildings with sophisticated equipment (Lawn, Rhode and Rifkin, 2008).

The quest to attain a good standing health sector in nations especially the developing nation is still on the rise. Health is wealth and thus all environmental activities aimed at a nations development are centered around quality health (Lekan, 2010). Health is one of the measuring elements for an areas standard of living and prosperity (Sanusi, 2017). Despite this, WHO (2012), identified Nigeria among countries with relatively poor health indicators in the world as a result of poor staffing, servicing and equipment as well as majority of healthcare facilities serving the country's population are primary healthcare providers yet insufficient in the rural areas (Adeniyi, Ejembi, Igbeneosun, and Mohammed, 2001). Increased community engagements, establishment of more structures and improving the quality of available healthcare facilities would help strengthen the health system in Nigeria (Okoli, Eze, Oludipe, Ekezie and Ohiri, 2016). In line with this, the Federal Government of Nigeria in a bid to alleviate the burden of healthcare facility on its population created the National Health Insurance Scheme in 2005 (Ibiwoye and Adeleke, 2010; Danjuma, 2015).

Division of healthcare facilities may be based on factors such as the type of services they render, specialization, technology, level of care and sophistication (Danjuma, 2015). According to Pavignani (2007) the three main levels of healthcare institutions based on the services they deliver are the primary, secondary and tertiary healthcare institutions. The primary healthcare facilities are those institutions devoted to simple diagnosis and treatment of mainly out patients. These facilities may also carryout special functions such as immunization, Tuberculosis treatment, safe motherhood and family planning, examples include small facilities easily accessible to the community such as dispensaries, clinics and primary healthcare centers (PHCs) (Adeboyega and Abioye, 2017).

Furthermore, Muhammed, Ibrahim, Abubakar, Idoma, Akhadolor, Amina and Abubakar (2014) stated that according to the classification of healthcare in Nigeria, the primary healthcare is the responsibility of the Local Government Authority, the secondary is the responsibility of the State Government and the tertiary; the responsibility of Federal and State Governments.

II. STUDY AREA

Zaria Local Government Area is located between Latitudes $11^{\circ}04'N$ and $11^{\circ}07'N$ of the equator and Longitudes $7^{\circ}42'E$ and $7^{\circ}00'E$ of the Greenwich meridian. It covers a land mass of about 563km^2 . Zaria LGA has a total population of 406,990 (NPC, 2006). It is bounded to the North by Sabon-Gari LGA, to the East by Soba LGA, West by Giwa LGA and to the South by Igabi LGA. The administrative headquarter of Zaria Local Government Area is located in Zaria city. Zaria LGA is about 70km from Kaduna the capital of Kaduna State. Zaria LGA has 13 wards namely Dambo, Dutsenabba, Gyallesu, Kaura, Kufena, Kwarbai "a", Kwarbai "b", Limancin-kona, Tudun Wada, Tukur-tukur, UnguwanFatika, Unguwanjuma, and Wucicciri (Abubakar, 2012). The soil is mainly loamy and sandy but with a reasonable amount of clay soil. The natural vegetation of Zaria LGA belongs to the Guinea savannah zone which implies woodland vegetation type. (Abubakar, 2012)

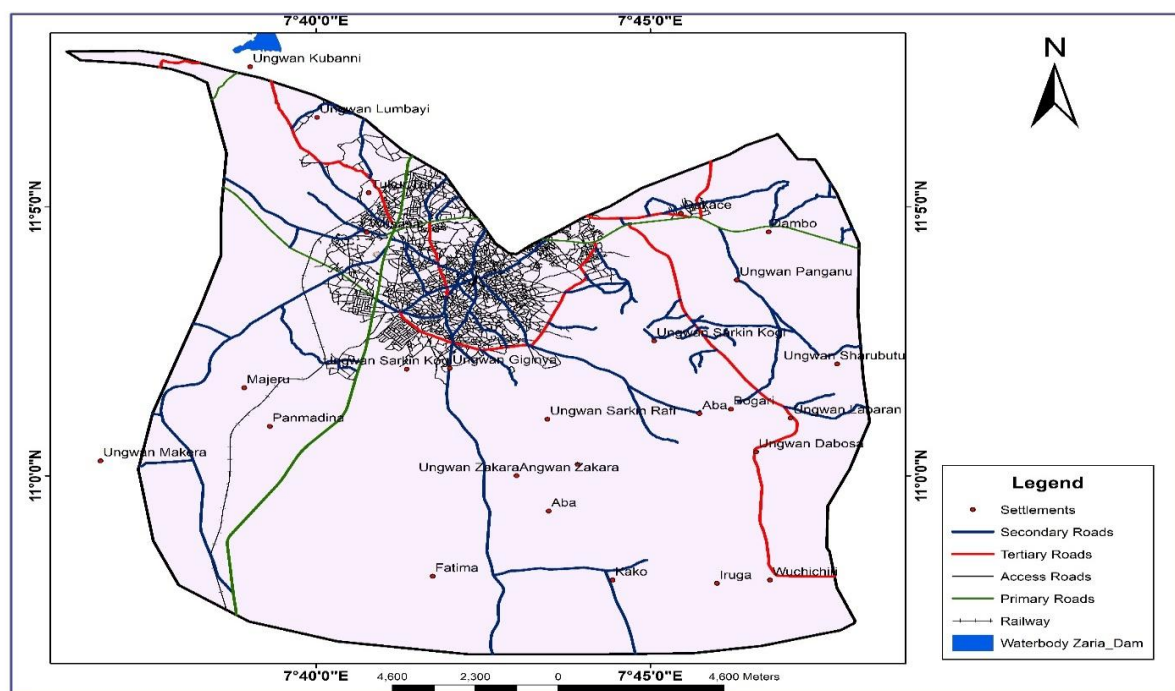


Figure 1: The Study Area

Source: Kaduna Geographic Information System (2018)

III. STUDY METHODS

In conducting this study, data was obtained of available healthcare facilities in Zaria LGA from Kaduna State Ministry of Health. A reconnaissance survey was carried out to identify the location of healthcare facilities in the Zaria LGA. During this survey, contact was made with some personnel and patients which helped to understand the area coverage, the types of healthcare facilities, language to use and in the construction of questionnaire (Appendix I) and to ascertain the statistical techniques to employ. The handheld Global Positioning System (GPS) was used to acquire the coordinates of the healthcare facilities

IV. RESULTS AND DISCUSSIONS

A. Availability of Healthcare Facilities in Zaria LGA

This is important in ascertaining the distribution pattern of the healthcare facilities within the study area. The list of healthcare facilities in Zaria LGA is shown in Table 1.

Table 1: Availability of Healthcare Facilities in Zaria LGA

S/No	Wards	Name of Facilities	Type	Status
1	Dambo	a. PHC Dambo	Primary	Functioning
		b. HC Dakace	Primary	Functioning
		c. HC Kakiyayi	Primary	Functioning
		d. Sunseed Hospital	Secondary	Functioning
2.	Dutsen Abba	a. PHC Majeru	Primary	Functioning
		b. PHC Dutsen Abba	Primary	Functioning
		c. MPHC KasuwanDutse	Primary	Functioning
		d. HC KafinMardanni	Primary	Functioning
		e. HC Kako	Primary	Functioning
		f. HC Pammadina	Primary	Functioning
		g. HC UnguwanMallamai	Primary	Functioning
		h. HC Tankarau	Primary	Functioning
		i. HC Dorayi	Primary	Functioning
		j. HC Kwaba	Primary	Functioning
3.	Gyellesu	a. PHC Gyellesu	Primary	Functioning
		b. HajiyaGamboSawaba Health Center KofarGayan	Secondary	Functioning
		c. HC Kaku	Primary	Functioning
4.	Kaura	a. PHC RiminDoko	Primary	Functioning
		b. MPHC UnguwanBishar	Primary	Functioning
4.	Kufena	a. PHC UnguwanDankali	Primary	Functioning
		b. HC Gabari	Primary	Functioning
		c. HC RafinMagaji	Primary	Functioning
		d. HC KauranJuli	Primary	Functioning
		e. HC Kake	Primary	Functioning
		f. St. Lukes Anglican Hospital	Secondary	Functioning
	Wusasa	g. St. Martin Anglican Hospital	Secondary	Functioning
	Wusasa			
5.	Kwarbai 'A'	a. PHC Kwarbailyal	Primary	Functioning
		b. HC Amaru	Primary	Functioning
		c. HC Magajiya	Primary	Not Functioning
		d. HC Jushi	Primary	Functioning
		e. HC KofarGaladima	Primary	Functioning
		f. ABUTH Banzazzau	Tertiary	Functioning
6.	Kwarbai 'B'	a. PHC Anguwan Alkali	Primary	Functioning
		b. PHC Anguwan Liman	Primary	Functioning
		c. HC IyaAbdallahi	Primary	Functioning
		d. HC Kakaaki	Primary	Functioning
8.	Limancin Kona	a. PHC Baban Dodo	Primary	Functioning
		b. PHC Jakara (1)	Primary	Functioning
		c. PHC Jakara(2)	Primary	Functioning
		d. HC Durumi	Primary	Functioning
		e. HC Salmanduna	Primary	Functioning
9.	Tudun Wada	a. PHC Tudun Wada	Primary	Functioning
		b. PHC Dandutse	Primary	Not Functioning
		c. ABUTH TudunWada	Tertiary	Functioning
10.	TukurTukur	a. PHC TukurTukur	Primary	Functioning
		b. PHC TudunJukun	Primary	Functioning
11.	UnguwanFatika	a. PHC AnguwanFatika	Primary	Functioning

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		b.	HC KofarKibo	Primary	Functioning
12.	UnguwanJuma	a.	PHC Dan Jinjiri	Primary	Functioning
		b.	Mal. Ubaidu Memorial PHC KofarKuyambana	Primary	Functioning
		c.	HC Alfadarai	Primary	Functioning
13.	Wuciciri	a.	PHC Wuciciri	Primary	Functioning
		b.	HC Aba	Primary	Functioning
		c.	HC Rubuci	Primary	Functioning

Source: Fieldwork, 2018

Table 1 shows the names, location (wards), ownership, types and status of the healthcare facilities in Zaria LGA of Kaduna state. It reveals that there are 54 healthcare facilities in Zaria LGA ,Dambo and Kwarbai 'B' wards each has 4 healthcare facilities, 10 HCFs are in Dutsen Abba ward, 3 of the HCFs each in Gyallesu, Tudun Wada, UnguwanJuma, and Wuciciri wards. Kaura, TukurTukur, and UnguwanFatika each has 2 of the total HCFs. The result also shows that 7HCFs located in Kufena, 6 in Kwarbai 'A', and 5 HCFs in Limancin Kona wards respectively. It also shows that of all these healthcare facilities 2 were not functioning during the time of the study(PHC Dandutse and PHC Magajiya inTudunwada and Kwarbai 'A' wards respectively).

The result further shows that 48 of the healthcare facilities are primary HCFs, 4 are secondary healthcare facilities and 2 are tertiary healthcare facilities. This implies that there is a large number of PHCs at least one in each ward which helps to reduce health disasters that may occur due to lack of immediate medical assistance.

Table 2: Ownership of Healthcare Facilities in Zaria LGA

s/no	Name	Ownership	Northings	Eastings
1	PHC Dambo	Public	11.07595074	7.77247193
2	HC Dakace	Public	11.080915	7.754636667
3	HC Kakiyayi	Public	11.11354216	7.755995192
4	Sunseed Hospital	Private	11.08114333	7.754596667
5	PHC Majeru	Public	10.98764229	7.641442074
6	PHC Dutsen Abba	Public	11.01860315	7.627754147
7	MPHC KasuwanDutse	Public	11.01856833	7.627758333
8	HC KafinMardanni	Public	11.05564174	7.585203305
9	HC Kako	Public	11.0469236	7.699754
10	HC Dorayi	Public	11.00744484	7.685980113
11	HC Pammadina	Public	11.13	7.392
12	HC UnguwanMalamai	Public	11.00431721	7.621300143
13	HC Tankarau	Public	11.232	7.382
14	HC Kwaba	Public	11.01547197	7.528032025
15	PHC Gyellesu	Public	11.08894667	7.725705
16	HajiaGamboSawabaHcKofarGayan	Public	11.04122126	7.699031191
17	HC Kaku	Public	11.04590559	7.728963625
18	PHC RiminDoko	Public	11.04610805	7.70829672
19	MPHC UnguwanBishar	Public	11.04166075	7.71194886
20	PHC UnguwanDankali	Public	11.079265	7.682763333
21	HC Gabari	Public	11.11083	7.679881667
22	HC RafinMagaji	Public	11.10651663	7.661066149
23	HC KauranJuli	Public	11.06606	7.684606667
24	HC Kake	Public	11.09948615	7.686800276

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25	St. Luke's Anglican Hospital Wusasa	Private	11.0763094	7.679391868
26	St. Martin Anglican Hospital Wusasa	Private	11.07420364	7.68399526
27	PHC Kwarbailiyal	Public	11.06500421	7.71510763
28	HC Amaru	Public	11.0499844	7.71629447
29	HC Magajiya	Public	11.05760167	7.718356667
30	HC Jushi	Public	11.07308833	7.717835
31	HC K/Galadima	Public	11.05196667	7.721165
32	ABUTH Banzazzau	Public	11.0672799	7.717558942
33	PHC Anguwan Alkali	Public	11.07210936	7.703852379
34	PHC Anguwan Liman	Public	11.05813828	7.711762737
35	HC IyaAbdullahi	Public	11.06928142	7.7075251
36	HC Kakaki	Public	11.05946658	7.70510628
37	PHC Baban Dodo	Public	11.05885462	7.701294408
38	PHC Jakara	Public	11.0487402	7.697514482
39	PHC Jakara	Public	11.96659358	7.8638112
40	HC Salmanduna	Public	11.05512048	7.70029783
41	HC Durumi	Public	11.05813963	7.69898112
42	PHC Tudun Wada	Public	11.09014749	7.718745591
43	PHC Dan Dutse	Public	11.08297253	7.7190281
44	ABUTH Tudun Wada	Public	11.08378333	7.714628333
45	PHC Tukur-Tukur	Public	11.09234885	7.69738123
46	HC TudunJukun	Public	11.09662333	7.704556667
47	PHC AngwanFatika	Public	11.06286752	7.691364319
48	HC KofarKibo	Public	11.07683667	7.694533333
49	PHC Dan Jinjiri	Public	11.04857682	7.6927897
50	Mal. Ubaidu KofarKuyambana	Memorial PHC	11.05171467	7.689220408
51	HC Alfadarai	Public	11.05347318	7.69418101
52	PHC, Wuciciri	Public	10.97047676	7.77966097
53	HC Aba	Public	11.02077082	7.76121466
54	HC Rubuci	Public	10.93250787	7.78522386

Source: Fieldwork, 2018

Table 2 shows 49 healthcare facilities (94.4%) are owned by the government which includes the local, state and the federal government as shown in Figure 4.1. The result further reveals that the private owned healthcare facilities are located in Dambo (Sunseed Hospital) and Kufena wards (St. Lukes and St. Martins Anglican Hospitals). The public owned healthcare facilities are located in Dambo (3), Dutsen Abba (10), Gyallesu (3), Kaura (2), Kwarbai 'A' (6), Kwarbai B' (4), Kufena (5), Limancinkona (5), TudunWada (3), TukurTukur (2), UnguwanFatika (2), UnguwanJuma (3) and Wuciciri (3) wards respectively.

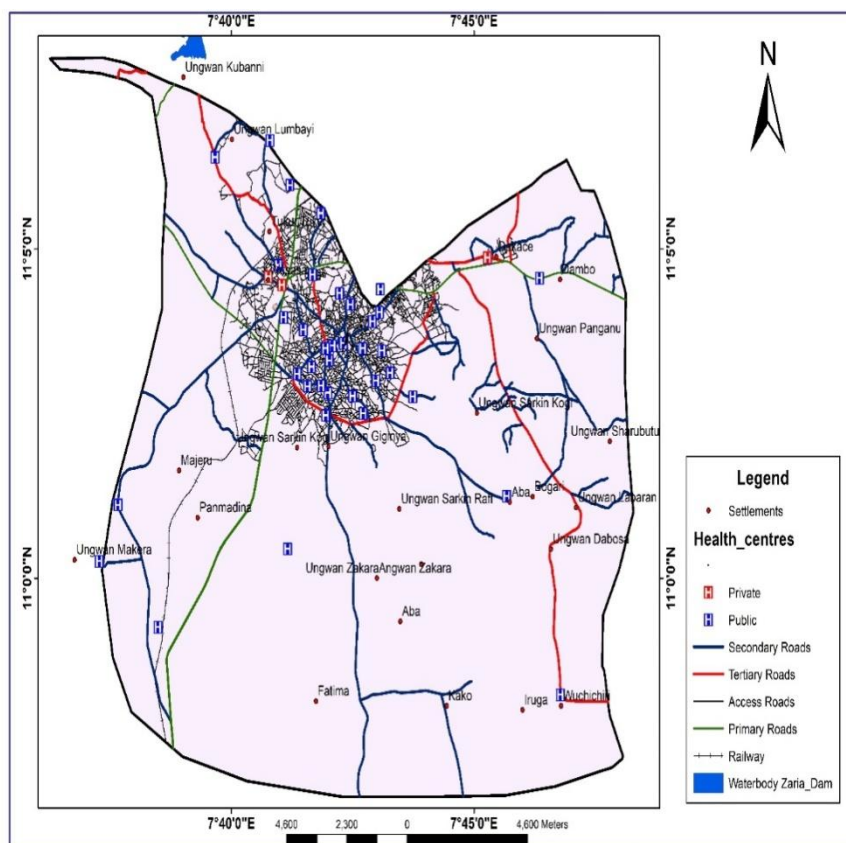


Figure 2: Distribution of Public and Private HCFs in Zaria LGA

Source: Fieldwork, 2018

Table 3: Capabilities of Healthcare Facilities

Name of HCFs	Personnel	Equipment	Structure
Primary Health Center Dambo	Good	Good	Good
Health Clinic Dakace	Fair	Good	Good
Health Clinic Kakiyayi	Good	Good	Good
Sunseed Hospital	Very Good	Good	Good
Primary Healthcare Majeru	Poor	Fair	Fair
Primary Health Center Dutsen Abba	Very Good	Very Good	Good
Model Primary Health Center Kasuwan Dutse	Good	Good	Good
Health Clinic KafinMardanni	Very Good	Good	Fair
Health Clinic Kako	Very Good	Very Good	Poor
Health Clinic Dorayi	Fair	Good	Good
Health Clinic Pammadina	Good	Good	Very Good
Health Clinic UnguwanMalamai	Fair	Good	Fair
Health Clinic Tankarau	Poor	Good	Very Good
Health Clinic Kwaba	Fair	Good	Good
Primary Health Center Gyellesu	Very Good	Very Good	Good
HajiaGamboSawaba Health center KofarGayan	Very Good	Very Good	Good
Health Clinic Kaku	Very Good	Very Good	Poor
Primary Health Center RiminDoko	Very Good	Very Good	Good
Model Primary Health Center UnguwanBishar	Very Good	Very Good	Very Good
Primary Health Center UnguwanDankali	Very Good	Good	Very Good

Health Clinic Gabari	Very Good	Very Good	Poor
Health Clinic RafinMagaji	Poor	Good	Good
Health Clinic KauranJuli	Poor	Poor	Good
Health Clinic Kake	Very Good	Good	Good
St Luke's Anglican Hospital Wusasa	Very Good	Very Good	Very Good
St Martin Anglican Hospital Wusasa	Very Good	Very Good	Good
Primary Health Center KwarbaiIyal	Very Good	Very Good	Very Good
Health Clinic Amaru	Very Good	Good	Good
Health Clinic Jushi	Very Good	Very Good	Very Good
Health Clinic KofarGaladima	Fair	Good	Good
Ahmadu Bello University Teaching Hospital Banzazzau	Very Good	Very Good	Very Good
Primary Health Center Anguwan Alkali	Fair	Very Good	Good
Primary Health Center Unguwan Liman	Fair	Good	Good
Health Clinic IyaAbdullahi	Very Good	Very Good	Good
Health Clinic Kakaki	Fair	Good	Good
Primary Health Center Baban Dodo	Fair	Good	Good
Primary Healthcare Jakara	Very Good	Very Good	Good
Primary Health Center Jakara	Very Good	Very Good	Good
Health Clinic Salmanduna	Poor	Good	Poor
Health Clinic Durumi	Fair	Very Good	Good
Primary Health Center Tudun Wada	Very Good	Very Good	Good
Ahmadu Bello University Teaching Hospital Tudun Wada	Very Good	Very Good	Very Good
Primary Health Center Tukur-Tukur	Very Good	Very Good	Very Good
Health Clinic TudunJukun	Very Good	Good	Good
Primary Health Center AngwanFatika	Very Good	Good	Good
Health Clinic KofarKibo	Very Good	Very Good	Good
Primary Health Center Dan Jinjiri	Very Good	Very Good	Good
Health Clinic KofarKuyambana	Very Good	Very Good	Good
Health Clinic Alfadarai	Very Good	Very Good	Good
Primary Health Center, Wuciciri	Good	Good	Poor
Health Clinic Aba	Very Good	Fair	Poor
Health Clinic Rubuci	Very Good	Very Good	Poor

Source: Fieldwork, 2018

Table 3 shows the structural condition, facility and equipment availability in the healthcare facilities present in Zaria LGA. This is in line with the minimum standard for healthcare facilities set aside by the Kaduna State Ministry of health. The study further divided the criteria into three which include: Availability of personnel, availability of equipment and condition of physical structure. The results show that none of the primary healthcare facility attained 100% of the minimum standards which is a huge set back to the state. The findings also reveal that 61.6% of the healthcare facilities have very good availability of personnel with little or no need for improvement to attain integral service delivery and 39.4% of the HCFs are in need of attention for effective service delivery. The result further reveals that as low as 46.2% of the healthcare facilities only have very good equipment availability an 54.6% of the HCFs are in need of attention in order to be able to provide efficient healthcare services to the people. As poor as 81.8% of the healthcare facilities have their physical structures in need of attention and 19.2% of the HCFs have very good condition of physical structure. The findings reveal that although the primary healthcare facilities make up most of the healthcare facilities, they are more lacking behind in the standardization. This study reveals that 86.5% of the healthcare facilities are in need of attention to provide efficient healthcare services.

B. Spatial Distribution of Healthcare Facilities In Zaria LGA

The spatial statistical nearest neighbour analysis tool was used to identify the distribution pattern of the healthcare facilities.

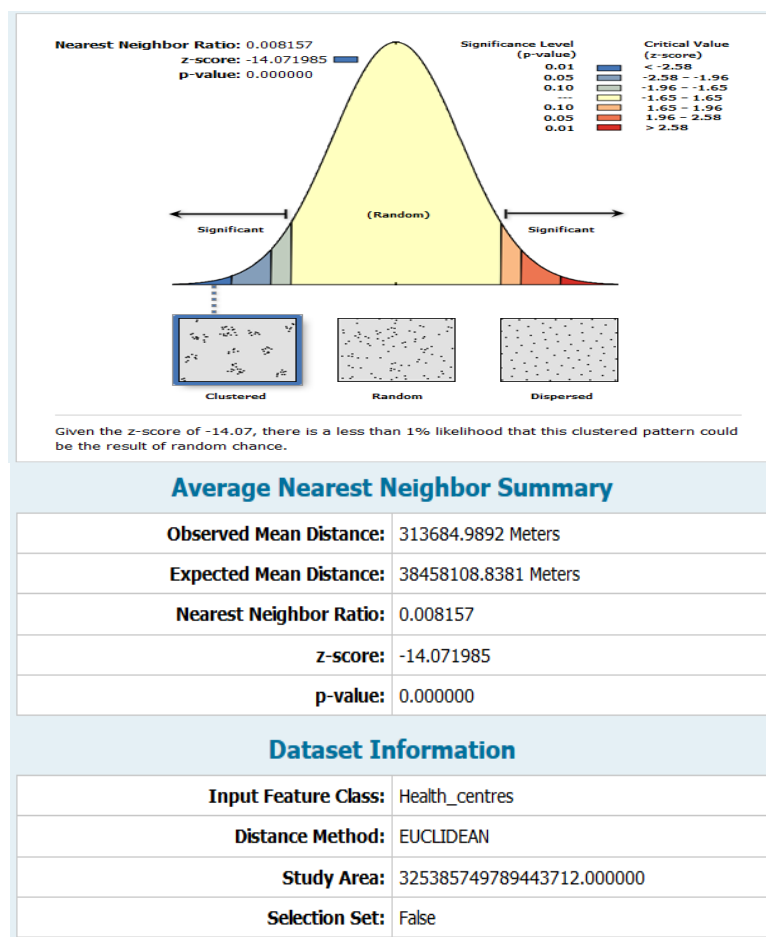


Figure 3: Average Nearest Neighbor Summary of Healthcare Facilities in Zaria LGA
Source: Fieldwork, 2018

The result from figure 3 shows that the Nearest Neighbor Ratio of all the healthcare facilities in Zaria LGA is 0.008157 which is relatively close to 0 and thus indicates a clustered spatial distribution pattern between the healthcare facilities. this therefore indicates that most of the healthcare facilities are situated close to each other

V. CONCLUSION

The study concludes that the distribution of healthcare facilities in Zaria LGA is well placed since it meets the minimum standard due to the fact that all the settlements were within 5km distance from the nearest HCF. There are 7 healthcare facilities that are with very good capacities for efficient healthcare service delivery while the remaining 45 are in need of improvement in other to function better. These includes the building structures, equipment and personnel availability.

VI. RECOMMENDATION

Based on the findings of this study, the study further recommends the following

- Strict monitoring and implementation of the standards for locating and operating healthcare facilities by the government
- Strict compliance with the standard for personnel and equipment in healthcare facilities by healthcare providers.
- Penalization of healthcare facilities operating below the set standards by the government.
- Registration of all healthcare facilities and retraining of healthcare personnel for easy control and security of service delivery.

- v. Creation of database for all healthcare facilities to upload their activities for easy detection and control disease outbreaks in the country.

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