

UTILIZATION OF HEALTH CARE SERVICES IN TOFA LOCAL GOVERNMENT AREA OF KANO STATE, NIGERIA

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Abstract

This paper examined the utilization of health care services in Tofa Local Government Area Kano State. Attendance records of health care facilities for a period of 4 years from 2008-2011 was used for the research. Percentage and GIS analysis was used in analyzing the data. The result of the analyses showed that utilization is higher among neighbouring wards than those far away; therefore distance influences utilization of health care facility not only in the study area but even among neighbouring local governments. Children between the ages of 0-4 have higher utilization than those in other age groups. This is due to the collective efforts of government and non-governmental organizations in reducing infant and maternal mortality through free routine immunization and free antenatal care services. Utilization is higher among females than males. This could be attributed to availability of services that are exclusively for female utilization such as family planning and antenatal care services. The research recommends that Government should locate health care services close to the people as possible and far from one another such that people can have easy access as distance was found to influence utilization and also subsidize health care fees as free routine immunization and free family planning and free antenatal care services are responsible for higher utilization among children aged 0-4 and female utilization respectively.

Keywords: GIS, Health Care Services, Health Care Facilities, Utilization, Tofa

Introduction

Although the concept of health is difficult to define and it means different things to different individuals, for the purpose of this paper, World Health Organisation's 1948 definition which viewed Health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity", was adopted. In 1986, the WHO in the Ottawa Charter for Health Promotion said health is "a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities". Health is sacred in the life of every human being, the quality of life of an individual and society is largely dependent on the quality of its healthcare services and access to such services. The quality of healthcare services influences longevity and productivity in populations. A sick population will be less productive than a healthy population.

Nigeria operates a pyramidal tier of health care delivery system corresponding with the Federal, State and Local Government levels of administration; each of these has a threshold population and a sphere of influence. Tertiary health facilities such as Teaching Hospitals and Federal Medical Centers at the top are controlled and funded by Federal government while the secondary health facilities such as General and Specialist hospitals are controlled by the State government. At the

bottom of the pyramid are the primary health care centers as well as dispensaries belonging to and managed by Local Government councils. Studies have shown that there is concentration of health facilities in urban centres especially secondary health services (Adamu & Monguno 2009). This is understandable if the population concentration of such settlements is considered, that is why when it comes to the distribution of health facilities, emphasis is placed on equity rather than equality.

Since Nigeria operates the Primary Health Care Scheme (PHC), primary health facilities are provided in rural areas to serve as first point of contact. PHC provide not only curative services, but also preventive services as well. Primary health facilities in Nigeria are many but there are often shortages of health personnel as well as other socio-cultural and economic barriers to care (Isaac, 2011). The level of poverty in rural Nigeria is further compounded by inaccessibility to public infrastructure especially health care facilities (World Bank, 1996; Ajala, Sanni and Adeyinka 2005).

Adamu (1997) opined that the location of health care facilities is known to influence their utilization and efficiency, although physical proximity will increase access, it does not guarantee utilization. Multiple factors influence the utilization of health facilities by populations and also determine how populations utilize health facilities, the type of facilities utilized and when they are utilized. Such factors include: socio demographic variables, social structures, level of education, gender, cultural beliefs and practices, status of women, political and economic systems, location and health facilities system of operation. Therefore all health facility utilization activities relate to a specific locality, house hold or individual and a defined element which is usually a function of the distance, time or travel cost between different health facilities and the population. The ease and comfort with which the public can utilize health facilities are among the most important variables determining the benefits individuals can obtain from these facilities (Ajaero and Madu 2008).

The distance patients must travel in order to obtain treatment has long been recognized as a primary determinant of the utilization of health care facilities. The distance factor is especially significant in rural Third World settings where the density of Western type health facilities is often low and the majority of patients are likely to make the journey for treatment as pedestrians. The rate of distance in utilization levels varies according to the type of facility, socio demographic variables and illness.

A study by Ahmad (1998) on the determinants of antenatal utilization in Daura town Katsina State, shows that the distance separating potential patients from the nearest health facility has been shown to be an important barrier to seek health care as such they prefer seeking the services of traditional birth attendants (TBA's) and a similar scenario was found in Okene Oba ward of Okene local government area, Kogi State, as only 6% of females utilize antenatal care services because the ward is located on a hilly area and health facilities are downhill. The cost of using motor cycle cannot be afforded by many women and also trekking up and down the hill is tedious (Isa, 2003).

This study therefore examined the utilization of health care services in a rural area of Tofa in Kano State, Nigeria and factors responsible for that. It is hoped that the findings of this research will serve as a framework for carrying out similar ones in other parts of the State so that a bigger and clearer picture on the utilization of health facilities in rural Kano State will emerge.

Study Area

Tofa is Local Government Area (LGA) in Kano State, Nigeria. The capital of the LGA is Tofa town. It was created on the 23rd of September, 1991 from DawakinTofa Local Government with its

headquarters in Tofa Town. It is located between Lat $12^{\circ} 03' 1''$ N and $12^{\circ} 05' 1''$ N and Long $8^{\circ} 16' 1''$ E and $8^{\circ} 26' 1''$ E with an area of 202km^2 . It is bordered to the North and North East by Dawakin Tofa, to the North West by Bagwai to the South and South West by Rimin Gado and to the South East by Kumbotso and Ungoggo local governments. It has 15 ward units which include; Tofa, Gajida, Dindere, Yanoko, YalwaKarama, Kwami, Jobe, Doka, Ginsawa, Wangara, UnguwarRimi, Lambu, Yarimawa, Janguza, and Lengel. The population of Tofa was 98,683 as at the 2006, comprising 49,870 Males and 48,733 Females (NPC, 2006) and a population growth rate of 3.2% per annum the projected population as at 2019 is 152, 831. It is 15kms away from the municipal.

Like other rural areas in State the major occupational activity of the people is farming, mostly rain fed. The principal crops grown include; maize, guinea corn, millet, cowpea, groundnut, soya bean, okro, pepper and tomatoes, several other vegetables livestock and other vegetables. There are three major periodic markets which include; Tofa town, Janguza and Lambu all known for their vegetable, livestock and grains and holds twice a week. The proximity of these markets to Kano metropolis makes them very popular with urban settlers, thus attracting a large turnout whenever they are holding (Movement for the Creation of Tigari State out of Kano State, 2009)

Hausa and Fulani are the predominant tribes in the area with Islam as the predominant religion. However, there are few Christians in Janguza and Tofa wards. The settlement pattern is nucleated type with few dispersed settlements. The life style of the people is typical of Hausa Fulani of Northern Nigeria. The practices of polygamy are common so also large families and mostly live in extended family setting. There are (2) major health facilities in the area. The Tofa Comprehensive Health Centre (CHC) and Lambu Model Primary Health Centre (LMPHC) provides almost the same services of free Antenatal, Family Planning, Out Patient, free Routine Immunization, Hypertension Clinic, Drug Revolving Fund and in addition Tofa CHC provides inpatient and Laboratory services.

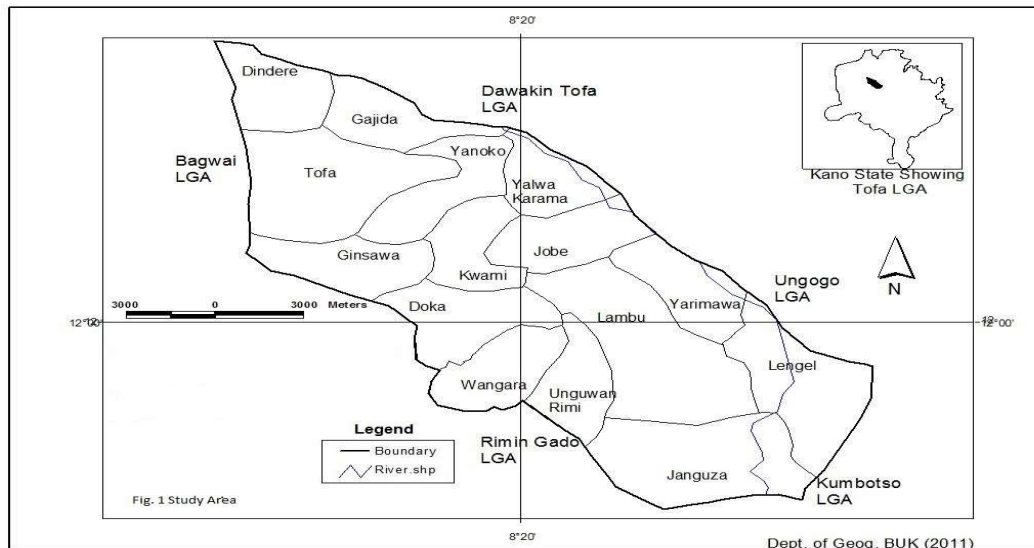


Figure 1: Tofa Local Government Area

Methods

Data was collected from a number of sources. Data relating to the names, number and staff strength of all Primary Health Facilities was collected from the Tofa Primary Health Care Department. Data on attendance to the health facilities was extracted from the attendance register of healthcare facilities of two PHC purposively selected. The two PHC are the major health facilities in the study area and by virtue of their location and function give a clear representation of the entire study area. These are the Tofa Comprehensive Health Centre (CHC) and Lambu Model Primary Health Care Centre (MPHCC). Population data (based on the 2006 national census and projection was made) of Tofa LGA was collected from the National Population Commission, Kano State office.

Arc View 3.2a software was used to plot all the maps in the study. Data pertaining ward and location was converted into shape file in the GIS software. The map of the study area was geo-referenced and digitized. Line, point and polygon are used for roads, facilities and boundaries respectively. In order to analyze the data, percentage was used to find the utilization between gender and age groups. The utilization rate for individual wards was calculated using the following formula.

Number of Attendance of a ward X 1,000

Number of Population

Table 1: Population Distribution

S/N	WARD	1991 POPULATION	PROJECTED POPULATION	POPULATION DENSITY/ KM2	Ratio/100 0	POPULATION PERCENTAGE
1	Yarimawa	2,585	4,395	21.75	0.23	4.31
2	Yanoko	3,923	6,669	33.01	0.3	6.54
3	Yalwa					
	Karama	1,353	2,300	11.38	0.44	2.26
4	wangara	3,701	6,292	31.14	0.15	6.17
5	Unguwar					
	Rimi	5,239	8,906	44.08	0.16	8.74
6	Tofa	12,957	22,027	109.04	0.14	21.61
7	Langel	3,524	5,991	29.65	0.17	5.88
8	Lambu	6,381	10,848	53.7	0.19	10.64
9	Kwami	582	989	4.89	1.01	0.97
10	Jobe	1,975	3,358	16.62	0.3	3.3
11	Janguza	5,275	8,968	44.39	0.22	8.8
12	Gajida	2,590	4,403	21.79	0.22	4.32
13	Ginsawa	1,939	3,296	16.31	0.3	3.23
14	Doka	7,062	12,005	59.43	0.17	11.78
15	Dindere	870	1,479	7.32	0.68	1.45
	TOTAL	59,958	101,926			

Source: Field Work, 2011

Result and Discussion

Figure 2, 3 and 4 gives the utilization of Tofa CHC, Lambu MPHCC Tofa CHC antenatal for 4, 4 and 2 years respectively. It can be seen that regardless of the population of each ward (see table 1) the residents of Tofa and its neighbouring wards such as Dindere, Gajida, Ginsawa, Yanoko, Kwami, YalwaKarama, Doka and kwami have higher utilization in Tofa health facility likewise in Lambu MPHCC Lambu, Lengel, Janguza, Yarimawa and Unguwar rimi have higher utilization. This is in line with the postulates of central place theory, using the two key concepts of threshold population (minimum market population or income needed to bring about the selling of a particular good or service) and range (maximum distance consumers are prepared to travel to acquire goods - at some point the cost or inconvenience will outweigh the need for the good or service). It can be seen that Tofa and Lambu wards having the high population of 22,027 and 10,848 have satisfied the threshold population for the establishment of a comprehensive health centre and model primary health centre respectively (population of 10,000-20,000 according to national primary healthcare management agency, 2008). As for the range, it can be seen that utilization decreases as the distance increases with zero utilization in Janguza and Dindere at the farthest ends. This is in line with distance decay model (interaction between two locales decreases as the distance between them increases) and what Le Suer (1997) observed in South Africa that 96% of the patients uses the nearest clinics and according to Adamu (1996) the location of a health facility is known to affect utilization than do influence the decision to seek and receive care. The case of figure 4 pregnant women due to the nature of their condition cannot travel over long distance and prefer to utilize nearest clinic and this is in line with the findings of Isa (2003) in Okene Oba ward of Kogi State where only 6% of females utilize antenatal care services.

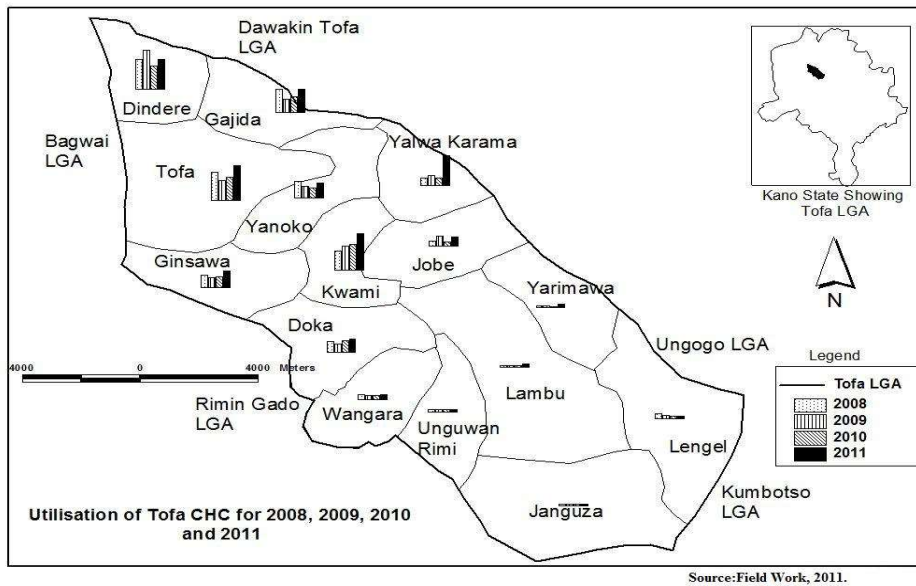


Figure: 2 Utilization of Tofa CHC: 2008, 2009, 2010 and 2011.

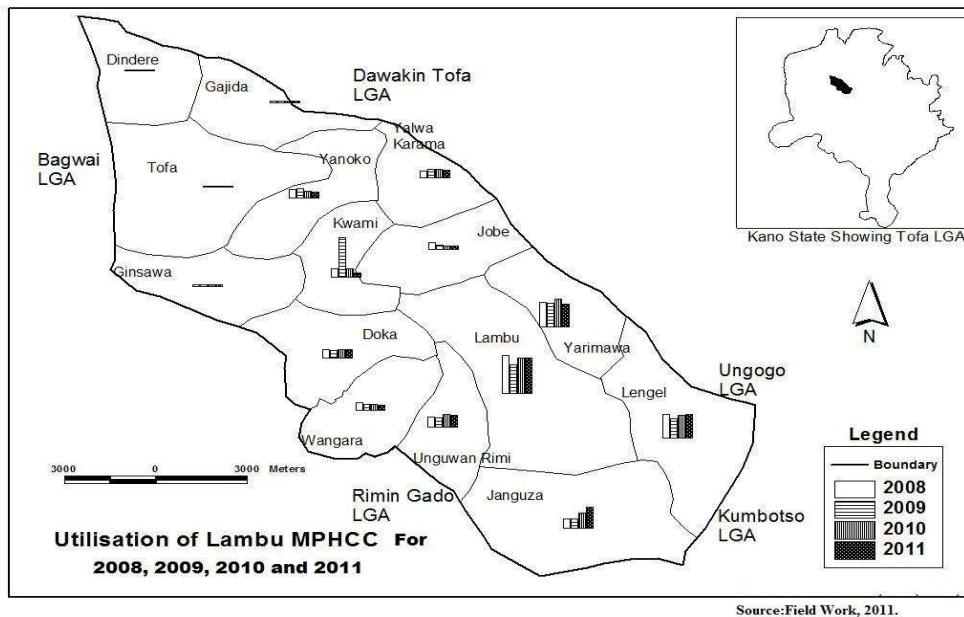


Figure 3: Utilization of Lambu MPHCC: 2008, 2009, 2010 and 2011

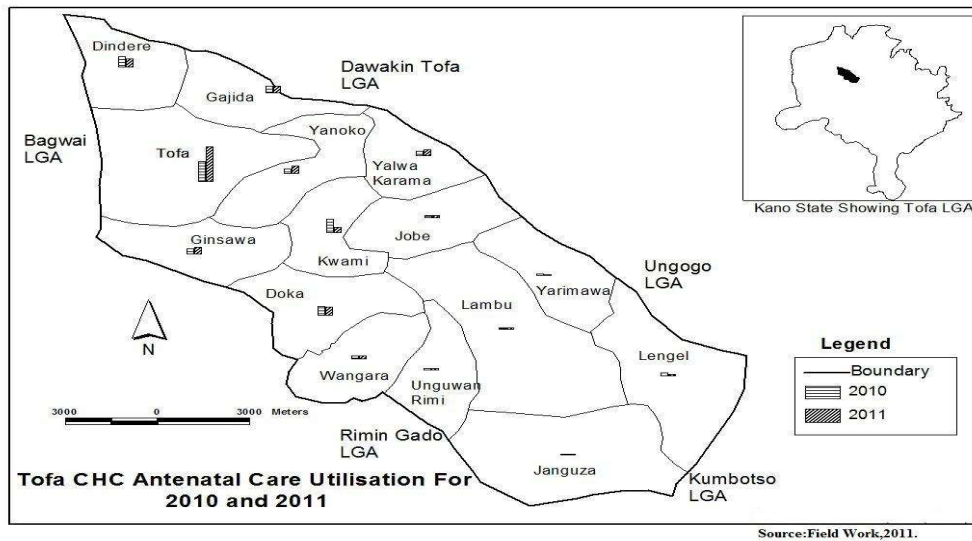
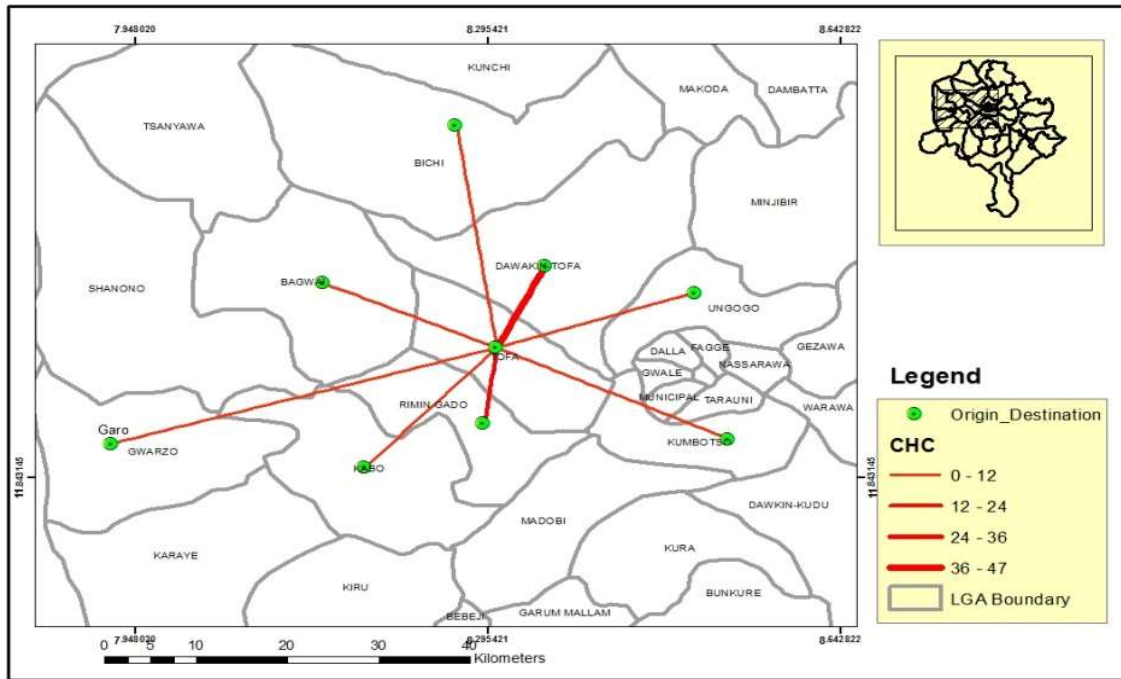


Figure 4: Utilization of Antenatal care in Tofa CHC for 2010 and 2011

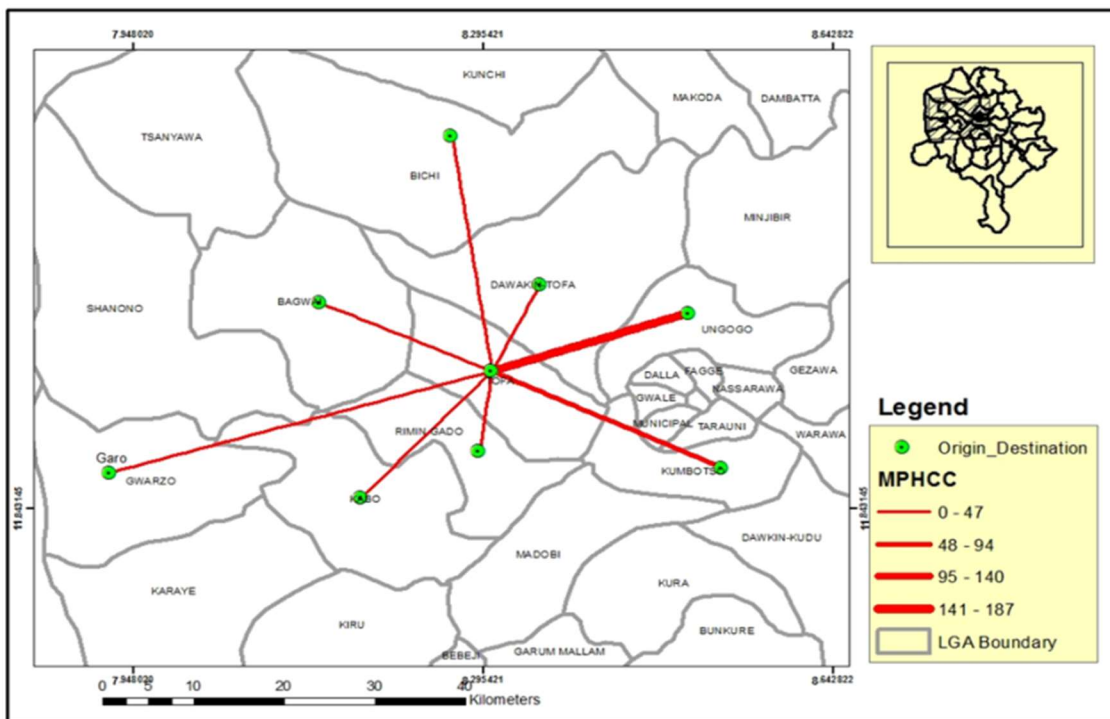
Utilization of Health Facilities by Neighbouring Local Governments:

The utilization of health facilities by neighbouring Local Government will help in explaining further the effect of location of a health facility in its utilization



Source: Dept. of Geog. BUK (2018)

Figure 5 Utilization of Tofa (CHC) by Neighbouring Local Governments



Source: Dept. of Geog. BUK (2018)

Figure 6 Utilization of Lambu (MPHCC) by Neighbouring Local Governments

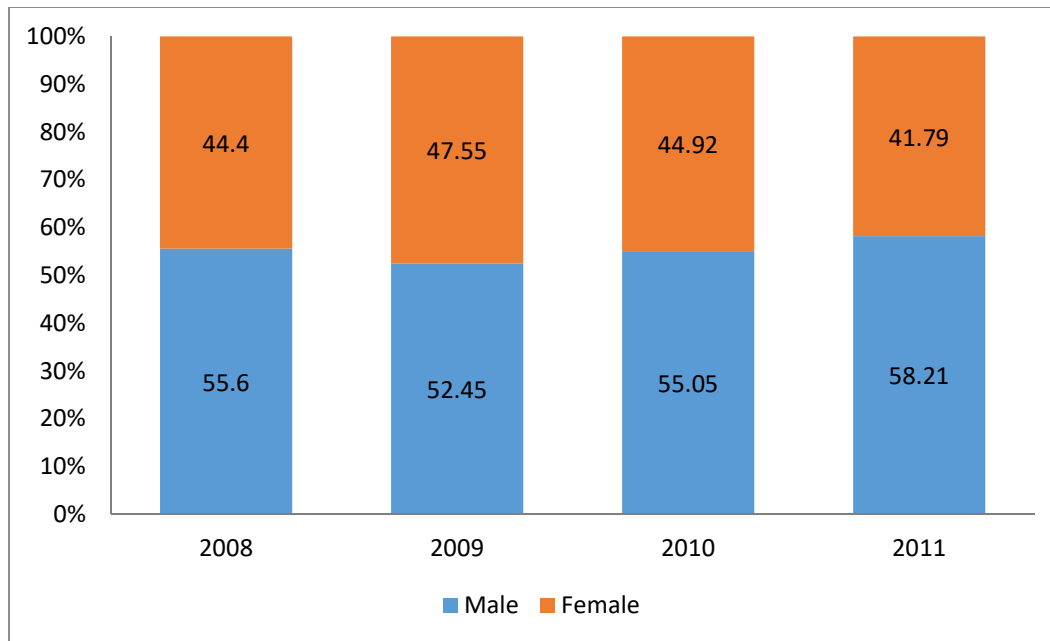
By comparison of the utilization of neighbouring local government in Tofa CHC and Lambu MPHCC, in figure 5 and 6 DawakinTofa has the highest utilization in Tofa CHC this is because it is a close neighbour and a very low utilization in Lambu MPHCC because it is far away from it. Rimin Gado has almost the same utilization in both health facilities because it is located at the centre of both health facilities. Garo and Bagwai have higher utilization in Tofa CHC than in Lambu MPHCC because they are nearer to Tofa CHC than Lambu MPHCC. Kumbotso and Ungoggo have higher utilization in Lambu MPHCC because they are closer to Lambu MPHCC than Tofa CHC. The utilization of these local governments indicates clearly the distance decay effect as explained by the Distance Decay model. Utilization is higher among neighboring locations than those farther away and utilization decreases as distance increases.

Demographic Characteristics of Patients in Tofa CHC and Lambu MPHCC

Age and sex: These are two manifestly important variables influencing health services utilization. It may be expected that, as they become older, and especially after retirement, people will need health services more for chronic and perhaps for acute conditions. However, among younger age groups, utilization by females can be increased for reasons associated with child birth and contraception so that, their use of services will almost always tend to be higher than that of males. The effects of increasing age and of sex differences on utilization are therefore difficult to generalize (Joseph and Phillips, 1984).

Sex Distribution

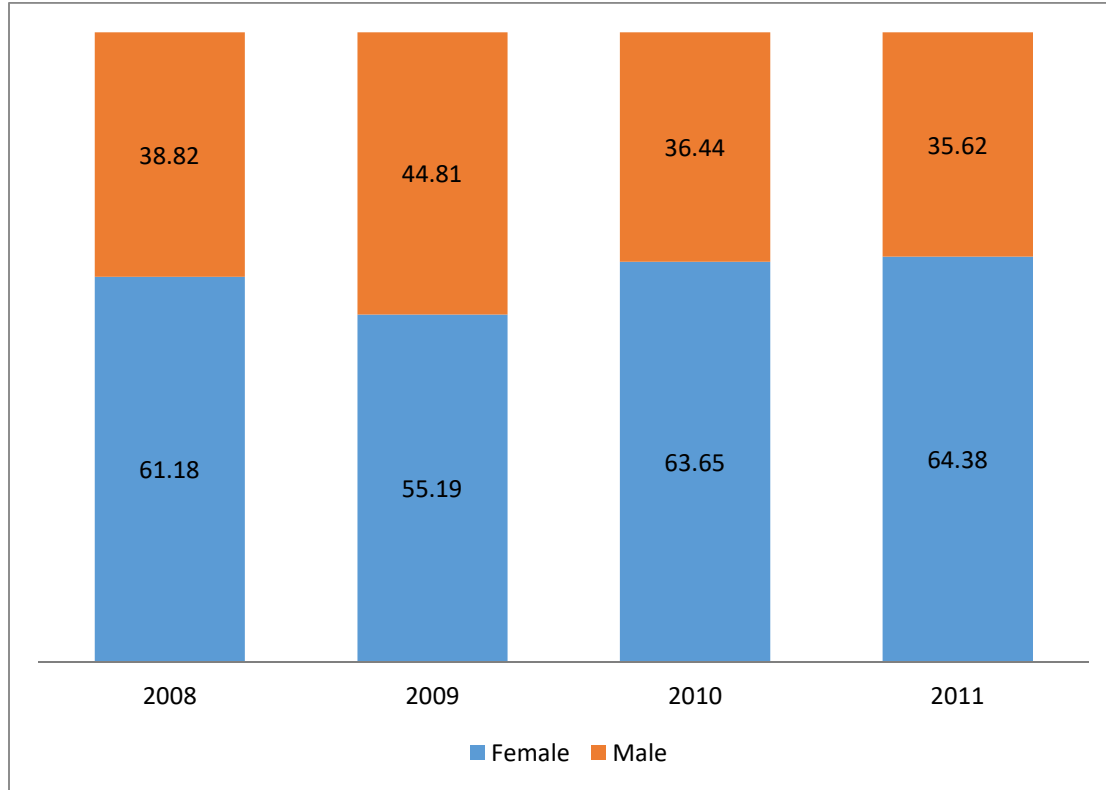
Sex distribution gives the utilization of males and females in the attendance records of the health facilities.



Source: CHC Tofa, 2012

Figure 7 Distributions of Patients in Tofa Comprehensive Health Care Centre by Sex for 2008, 2009, 2010 and 2011.

It can be deduced that from 2008-2011 more females (53%) utilize Tofa comprehensive health care services than males (47%) taking into account that there are more males than females in the study area 49% and 51% respectively. This shows that women's attitude towards modern health care services in the study area is encouraging and this might be as a result of free antenatal care services given to women.



Source: MPHCC Lambu, 2011

Figure 8 Distributions of Patients in Lambu Model Primary Health Care Centre by Sex for 2008, 2009, 2010 and 2011

From 2008-2011 it can also be deduced that majority of the patients that utilize Lambu Model Primary health centre are females accounting for 61% while the males accounted for 39% despite the fact that males in the study area account for a higher percentage of 51 and females 49. This shows that women's attitude towards modern health care services is encouraging; this might be related to the free antenatal care services available in most of the health care facilities and is in line with what is obtainable in Tofa CHC from 2008-2011.

Age Distribution

Age distribution gives the utilization of the various age groups in the attendance records of the health care centres

Table 3 Distribution of Patients in Tofa Comprehensive Health Care Centre by Age from 2008-2011

Age	2008	%	2009	%	2010	%	2011	%	Total	%
0-4	1349	44.05	608	30.13	466	25.87	1198	35.11	3621	35.16
5-9	291	9.50	319	15.80	140	7.77	301	8.82	1051	10.21
10-14	131	4.28	164	8.13	67	3.72	89	2.61	451	4.38
15-20	163	5.32	125	6.19	171	9.49	317	9.29	776	7.54
21-24	344	11.23	198	9.81	309	17.16	466	13.65	1317	12.79
25-29	231	7.54	154	7.63	228	12.66	324	9.49	937	9.10
30-34	179	5.85	138	6.84	142	7.89	214	6.27	673	6.54
35-39	64	2.09	48	2.38	73	4.05	167	4.89	352	3.42
40-44	107	3.49	55	2.73	66	3.66	87	2.55	315	3.06
45-49	25	0.82	26	1.29	15	0.83	39	1.14	105	1.02
50-54	75	2.45	60	2.97	36	2.00	57	1.67	228	2.22
55-59	17	0.56	14	0.69	12	0.67	65	1.91	108	1.05
60-64	46	1.50	63	3.12	45	2.50	39	1.14	193	1.88
65-69	2	0.07	11	0.55	9	0.50	13	0.38	35	0.34
70-74	30	0.98	25	1.24	18	1.00	22	0.65	95	0.92
75-79	4	0.13	2	0.10	1	0.06	4	0.12	11	0.11
80-84	2	0.07	5	0.25	3	0.17	6	0.16	16	0.16
85-89	0	0.00	1	0.05	0	0.00	3	0.09	4	0.04
90-94	0	0.00	1	0.05	0	0.00	0	0.00	1	0.01
95-99	2	0.07	1	0.05	0	0.00	2	0.06	5	0.05
Total	3062	100.00	2018	100.00	1801	100.00	3413	100.00	10294	100.00

Source: Field Work, 2011.

From table 2 and 3 investigation into the age of patients revealed that 0-4 years has the highest health care service utilization from 2008-2011 accounting for 35.16 %. This high utilization of children from birth to the age of 4 is in consistence with the age distribution of the Nigerian population in general and is an indication of high fertility rate and low infant mortality. This shows that efforts by government and non- governmental organisations towards the eradication of child killer diseases through immunization aim at reducing infant mortality are successful. Also since these children don't have a decision of their own and some form of gifts such as soap and mosquito treated nets are given to parents that bring their children for immunization also encourage utilization. Also, the high utilization of patients in the reproductive active groups (15-39) is linked to the fact that the health facilities offer free antenatal care services. The low utilization of people between the ages of 60-99 indicates the low life expectancy of the Nigerian population.

Table 4 Distribution of Patients in Lambu Primary Health Care Centre by Age from 2008-2011

Age	2008	%	2009	%	2010	%	2011	%	2008	%
									-	
									2011	
0-4	484	25.22	571	36.60	452	21.45	506	23.68	2013	26.07
5-9	221	11.52	208	13.37	223	10.58	220	10.30	872	11.29
10-14	149	7.77	134	8.61	77	3.65	120	5.62	480	6.22
15-19	140	7.30	118	7.58	358	16.99	328	15.34	944	12.22
20-24	198	10.32	166	10.67	375	17.80	331	15.49	1070	13.86
25-29	160	8.34	93	5.97	210	9.97	231	10.81	694	8.99
30-34	141	7.35	87	5.59	156	7.40	153	7.16	537	6.95
35-39	61	3.18	32	2.06	81	3.85	72	3.37	246	3.19
40-44	102	5.32	54	3.47	54	2.56	55	2.57	265	3.43
45-49	50	2.60	8	0.52	30	1.42	26	1.22	117	1.51
50-54	75	3.90	44	2.83	30	1.42	29	1.36	178	2.31
55-59	20	1.04	6	0.39	9	0.43	6	0.28	41	0.53
60-64	54	2.81	13	0.84	32	1.52	30	1.40	129	1.67
65-69	13	0.68	4	0.26	7	0.33	9	0.42	33	0.43
70-74	34	1.77	8	0.52	6	0.29	15	0.70	63	0.82
75-79	4	0.21	1	0.06	1	0.05	2	0.09	8	0.10
80-84	10	0.52	5	0.32	6	0.29	3	0.14	24	0.31
85-89	1	0.05	3	0.19	0	0.00	0	0.00	4	0.05
90-94	1	0.05	1	0.06	0	0.00	1	0.05	3	0.04
95-99	1	0.05	0	0.00	0	0.00	0	0.00	1	0.01
Total	1919	100.00	1556	100.00	2107	100.00	2137	100.00	7722	100.00

Source: Field Work, 2011.

Conclusion and Recommendation

The location of a health care facility is found to affects its utilization. This is noticed not only among the various wards in the study area but also among neighbouring local governments as wards close to the health care facility have higher utilization than those far away. Females utilize the health facility more than males due to the presence of some services that are exclusively for female utilization such as free antenatal care and family planning services. Utilization is higher among children age between 0-4 than those in other age groups due to the presence of routine immunization services available in the health care facilities.

The Government should as much as possible provide the healthcare services close to people to encourage high utilization since people usually use the nearest health facility so as not to deprive people of health care services.

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