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Understanding Health Inequalities in Federal Capital Territory (FCT) Nigeria

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Abstract

Health inequality is the difference in health status between different populations. Where health inequality exists, the right to highest attainable standard of health is not enjoyed equally across the given population. This study is aimed at understanding health inequalities in Federal Capital Territory (FCT) Nigeria. Method adopted for primary data collection was structured closed and opened–ended questionnaire from Health Equity Assessment Tool kit created with Epi-Info version7 and administered to 112 respondents. Results; male (52.7%), female (47.3%); socio-economic-stratifiers; highest education attained, 1.8% not educated 98.2% educated. Annual income below N220, 000 (44.3%); N221.000–320,000 (27.4%); N321, 000–420,000(8.0%). aboveN421, 000(20.4%). house rent (68.1%); healthcare (53.1%); education; (49.6%) unaffordable. Transportation (50.5%) affordable. Health; no vaccination (22.1%);prenatal care by unqualified health professionals(24.8%);household births by qualified health professional (23.9%) and unable to afford three meals daily (21.1%).Available health facility: no facility 4.5%, traditional 4.5%, primary 40.2%, secondary 41.1%, tertiary 9.8%.hospital visits within 6months: never 31.8%, once 34.6%, twice 17.3%, thrice10.0% more than thrice 6.4%.Physical environment; no waste containers (37.2%),irregular waste disposal(46.9%),absence of sanitation (50.4%).Source of domestic water; bore hole (59.3%);protected spring (0.88%); stream (25.7%); piped water (0.88%) well(13.3%).Linear regression: highest qualification for activities prevention, geographic location, socioeconomic stratifiers with predictor variables indicated negative regression coefficient. The average income showed positive regression coefficient, correlation coefficient's=0.43, r=0.07, p-values < F-tests respectively. Other parameters showed positive regression coefficient correlation r=0.38. Conclusion: health inequalities exist in FCT, Nigeria requiring wholistic intervention.

Keywords: Health Inequality, Determinants of Health, FCT, Nigeria.

Introduction

Health could be referred to as "a person's level of good physical and mental health and the extent to which individuals in a society are enabled to live healthy and flourishing lives" (The Health Foundation, 2018: 5). Someone is healthy if the individual had the opportunity for a meaningful work, secured housing, and stabilized relationships, high self-esteem with healthy behaviors (The Health Foundation, 2018 and IRP, 2016). Healthy society would not wait for people to become ill, but ensures that health would be shaped by social, cultural, political, economic, commercial and environmental factors and would take action on these factors that influence health status or outcome for present and future generations (The Health Foundation, 2018 & Zollner, 2002). Health status or outcome measured by quality and length of life, could be influenced by sets of health factors like the modifiable factors (health behaviours, clinical care, social and economic factors, physical environment) and the non-modifiable factors (genetic traits) which could further be influenced by policies and programs in a given area or society (IRP, 2018). Research had shown that though healthy behaviors and access to high-quality health care were crucial but more crucial were the social determinants of

health like social and economic factors and the physical environment and remained strongly associated with health outcomes than health behaviors or clinical care (SJPH, 2012; IRP, 2016 & LaVeist, Gaskin & Richard, 2011).

These factors influencing health status or outcomes appeared to be very necessary in the level at which some communities or larger groups of people experience health inequities, and even why some countries are healthier than others (The Health Foundation, 2018; IRP, 2016 & Sweet, 2013). Health inequities could be defined as systematic differences in the opportunity's groups had in achieving optimal health that could lead to unfair and avoidable differences in health outcomes (WHO, 2013 & Braveman, 2006). Characteristics like social identity or location that could cause differential access to opportunities for health involves race, ethnicity, gender, employment and socioeconomic status, disability and immigration status and geography (WHO, 2013). Therefore, "Health Inequality" could be defined as the difference in the health status of a given individual or in the distribution of health determinants amongst varying populations. Where health inequality exists, the right to highest attainable standard of health is not being enjoyed equally across the given population. WHO, (2003) posited that whether people are healthy or unhealthy is influenced by income and social status, literacy and level of education, unemployment, health care services, biology and genetics, availability of food, gender and culture among others. The questions are: why is it that people live longer and are healthier in rich countries or communities than in poor countries or communities? Why it is that people could live longer and healthier than their grandparents and great-grandparents who lived in poorer times and environment? Why is it that rich people live longer and are healthier than poor people? Why? Hence, this study aims at "Understanding the Health Inequalities in Federal Capital Territory (FCT) Nigeria". This if achieved could provide empirical data or information for policies reviews, adequate and effective program interventions not only in the study area but also others places where health inequalities exist.

Methodology

In this study, a descriptive survey research design was adopted to study the health inequality in the study area. "A descriptive research design determines and reports the way things are" (Naliaka and Namusonge, 2015:96). The source of data was from primary and secondary. The primary source covers the documentary policy system on the distribution of income stated from the public sector while the secondary sources was from relevant income/wages from public service and national wages reform documents. The data collection was based on the qualitative search using the standard questionnaire and focus field observation of data collection technique, tested and analysed with the Epi-info software version 7. It is used when data is collected for the description of persons, organizations, settings/phenomena" (Naliaka and Namusonge, 2015). For the purpose of this study the method applied was ranking the indicators of health inequality in percentages within populations and making pairwise comparisons of health within subgroups (Moreno-Betancur *et al*, 20015).

Study Population: Population include any group of people, events or items that interest a researcher in a research while target population means "*a universal set of study of all members of real or hypothetical set of people, events or objects to which an investigator wish to generalise the result*"(Naliaka and Namusonge, 2015: p. 96).The target population for this survey research included all adults living in Abaji, Abuja Municipal Area Council-AMAC, Bwari, Gwagwalada, Kuje and Kwali in FCT, Nigeria. These municipal Area Council was chosen because it has all the ethnicity/groups of people in Nigeria.

Inclusion Criteria: The inclusion criterion was based on all persons or adults residing in the study area.

Exclusion Criteria: The exclusion criterion was based on all persons or adults and NOT residing in the study area.

Ethical Approval: Ethical approval was obtained from Federal Capital Territory Administration.

Informed Consent: Before allowing all individuals, who participated in this Study, researcher got their consents individually.

Data Collection Instrument: The instruments used for primary data collection in this study was structured closed and open-ended questionnaires created using the Epi-Info software version 7 based on the research

objectives of this study and administered to the 112 respondents. Research study-related secondary data were collected from literature.

For the purpose of this study, the health inequalities data indicators as extracted from (WHO,2008) were collected with the structured closed and open-ended questionnaires on sex (male and female); geographical location (Abaji, Abuja Municipal Area Council-AMAC, Bwari, Gwagwalada, Kuje and Kwali in FCT, Nigeria); health outcomes (vaccination, use of qualified health professionals, access to health care infrastructures, sexual reproductive health, nutrition); socioeconomic stratifiers (education, knowledge of health prevention activities, housing) and Physical environment(water, sanitation, transport).

Validity and Reliability of Data: The face and content validity and reliability of the instrument were assured by initial testing of the questionnaire, seeking expert opinion and positive criticism of my colleagues.

Statistical Analysis Method: According to Sounders, Lewis & Thornbill (2009), data analysis is the processing of data to make the data meaningful or give useful information. The data was analysed using Epi-Info software version 7 while the resulted data, presented in frequency tables and percentages.

Results

All in frequency and percentage (%) respectively; Gender: male, 59(52.7) and female, 53(47.3). Socio-economic stratifiers: highest education attained: Not at All, 2(1.8); FSLC, 11(9.8); SSCE/GCE/NECO/NABTEB, 10(8.9); NCE/OND, 12(10.7); HND/BSc, 44(39.3); M.Sc./M. ED, 29(25.9); PhD, 4(3.6); Knowledge of prevention activities were >70% on the average of each studies variables. This call for more scaling-up effort. Average annual income: below N220, 000, 50(44.3); N220.000 – 320, 000, 31 (27.4); N321, 000 – 421,000, 9 (8.0) and above N421, 000, 22(20.4) annually. Type of health facility: Not at all, 5(4.5); traditional health facility, 5 (4.5); primary health facility, 45(40.2); Secondary facility, 46 (41.1) and tertiary health facility, 11 (9.8). Cost of house rent: affordable, 36 (31.9); not affordable, 76 (68.1); healthcare affordable, 53(46.9), not affordable, 59 (53.1); education affordable, 57(50.4), not affordable, 55(49.6%); cost of transport affordable, 81(72.3), not affordable, 31(27.7). Health outcomes: 24(22.1) were not vaccinated; 27(24.8) were not using qualified health professionals during prenatal care; 26(23.9) births in households were not by qualified health professional and 23(21.1) were not able to afford three square-meal daily. Physical environment: availability of waste collection containers, 42(37.2), waste was not disposed as and when due, 52(46.9%) and there was no periodic sanitation exercise 57(50.4%).

Linear regression of: highest education attained against Knowledge of prevention activities (hand washing, contraception methods, family planning, disease prevention methods, how to make balanced diet, oral rehydration therapy and where to get health counselling), indicated negative regression coefficient (indirect association) with the highest education), in all predictor variables- prevention activities That is, as highest education attained increases the number of population with no knowledge of prevention activities decreases. The correlation coefficient was (r=0.43) and the p-values < F-tests, implying moderate association between highest education attained and knowledge of prevention activities. Linear regression of geographic location against socioeconomic stratifiers indicated negative regression coefficient (indirect association), in all predictor variables-socioeconomic stratifiers, except the average income with positive regression coefficient (direct association). The correlation coefficient was (r=0.07) and the p-values < F-tests, implying strong association between socioeconomic stratifiers with geographical location of the studied population. As geographical location of the studied population varies, socioeconomic stratifiers varies.

Linear regression of highest education attained against socioeconomic stratifiers and health outcomes indicated negative regression coefficient (indirect association) in cost of housing, transport, ability to afford healthcare and daily three-square meals (indicating with highest education attained of the studied population. That is, as education attained increases, population that could not afford cost of housing, transport, healthcare and daily three-square meals decreases. But the average income, vaccination status, number of hospital visits since last six months with positive regression coefficient indicating direct association. That is,

as the highest education attained increases, average income, vaccination status, number of hospital visits since last six months increases. The correlation coefficient of the highest education attained and socioeconomic stratifiers of the studied population was (r=0.38) and the p-values < F-tests, implying strong association between socioeconomic stratifiers with the highest education attained by the studied population. As socioeconomic stratifiers vary, the highest education attained by the studied population varies.

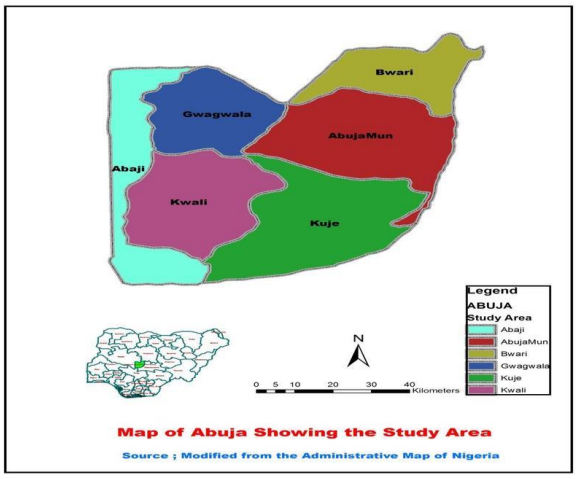

Figure1. Map of Abuja FCT

Table 1. Gender and Socio-economic Variables

Variables			**Frequency and Percentage (%)**		**Total**
1.Gender	Male			59(52.7)	112(100%)
	Female			53(47.3)	
2.Socio-economic Stratifiers	Highest Education Attained	Not at All		2(1.8)	112(100%)
		FSLC		11(9.8)	
		SSCE/GCE/NECO /NABTEB		10(8.9)	
		NCE/OND		12(10.7)	
		HND/BSc		44(39.3)	
		MSc/M.ED		29(25.9)	
		PhD		4(3.6)	
	Average Annual Income	below N220, 000		50 (44.3)	112(100)
		N220.000 – 320,000		31 (27.4)	
		N321,000 – 421,000		9 (8.0)	
		above N421,000		22(20.4)	
	Type of health facility	Not at all		5(4.5)	112(100)
		Traditional health facility		5(4.5)	
		Primary health facility		45(40.2)	
		Secondary facility		46 (41.1)	
		Tertiary health facility		11 (9.8)	
	Number of hospital visits since last six months	Not at all		35(31.8)	112(100)
		Visited once		38(34.6)	
		Visited twice		19(17.3)	
		Visited thrice		11(10.0)	
		Four times		2(1.8)	

		Five times		2(1.8)	
		More than five times		3(2.7)	
	Knowledge of Prevention Activities		**Yes**	**No**	
		I have knowledge of hand washing?	101(90.2)	11(9.8)	112(100)
		I have knowledge of contraception methods?	88(77.9)	24(22.1)	112(100)
		I have knowledge of Family Planning Methods?	92(82.3)	20(17.7)	112(100)
		I have knowledge of disease prevention methods?	89(78.8	23(21.2)	112(100)
		I have knowledge of how to make balanced diet?	98(88.3)	14(11.7)	112(100)
		I have knowledge of Oral Rehydration Therapy (ORT)?	87(78.4)	25(21.6)	112(100)
		I have knowledge of where to get Health Counselling?	93(83.0)	19(17.0)	112(100)
	Housing	Housing Cost	36 (31.9)	76 (68.1)	112(100)
	Healthcare	Healthcare Cost	53(46.9)	59 (53.1)	112(100)
	Education	Education Cost	57(50.4)	55(49.6)	112(100)
	Transport	Transport Cost	81(72.3)	31(27.7)	112(100)

(Source, Research Study, 2019).

Table 2. Health Outcomes and Physical Environment Variables

Variables		**Frequency and Percentage (%)**		**Total**
Health Outcomes		Yes	No	
	Have you taken vaccination?	88(77.9)	24(22.1)	112(100)
	Prenatal care in my household is by qualified health professional?	85(75.2)	27(24.8)	112(100)
	Birth in my household is by qualified health professional?	86(76.1)	26(23.9)	112(100)
	I can afford three square meal daily?	89(78.8)	23(21.2)	112(100)
Physical Environment	There are waste disposal containers in my area?	70(62.8)	42(37.2)	112(100)
	Waste in my area is disposed as and when due?	60(53.1)	52(46.9)	112(100)
	There is periodic sanitation exercise in my area?	55(49.6)	57(50.4)	112(100)
	I can afford three square meal daily?	89(78.8)	23(21.2)	112(100)
Sources of	Bore hole		66(59.3)	112(100)

domestic water	Protected spring		1 (0.88)	
	Stream		29 (25.7)	
	Piped		1 (0.88)	
	Well		15 (13.3)	

(Source, Study Survey, 2019).

Table 3. Linear Regression of Highest Education against Knowledge of Prevention Activities

Variable	Coefficient	95% Confidence	Limits	Std Error	F-test	P-value
I have knowledge of hand washing	-1.284	-2.349	-0.218	0.537	5.7177	0.018704
I have knowledge of contraception methods	-1.114	-1.981	-0.248	0.437	6.5134	0.012251
I have knowledge of Family Planning Methods	-0.054	-1.032	0.924	0.493	0.0119	0.913177
I have knowledge of disease prevention methods	-0.530	-1.261	0.202	0.369	2.0672	0.153684
I have knowledge of how to make balanced diet	-0.050	-0.859	0.760	0.408	0.0148	0.903570
I have knowledge of Oral Rehydration Therapy (ORT)	-0.029	-0.604	0.545	0.290	0.0101	0.920179
I have knowledge of where to get Health Counseling	-0.402	-1.151	0.346	0.377	1.1376	0.288772
CONSTANT	4.256	3.994	4.518	0.132	1041.5310	0.000000

Correlation Coefficient: r^2 = 0.43

Source	df	Sum of Squares	Mean Square	F-statistic	p-value
Regression	7	87.5069	12.5010	10.4859	0.0000
Residuals	98	116.8327	1.1922		
Total	105	204.3396			

(Source, Study Survey, 2019).

Table 4. Linear Regression of Geographical Location against Health Outcomes

Variable	Coefficient	95% Confidence	Limits	Std Error	F-test	P-value
My average annual income is	0.135	-0.152	0.421	0.144	0.8713	0.352782
Highest Education Attained	-0.280	-0.538	-0.022	0.130	4.6397	0.033573
House Rent is affordable in Federal Capital Territory	-0.549	-1.219	0.121	0.338	2.6401	0.107254
Since last six (6) months how many times did you visit hospital	-0.062	-0.283	0.160	0.112	0.3054	0.581687
Waste in my area is disposed as and when due	-0.296	-0.914	0.322	0.311	0.9039	0.343955
CONSTANT	3.834	2.667	5.001	0.588	42.4706	0.000000

Correlation Coefficient: r^2 = 0.07

Source	df	Sum of Squares	Mean Square	F-statistic	p-value
Regression	5	17.1317	3.4263	1.4728	0.2052
Residuals	103	239.6206	2.3264		
Total	108	256.7523			

(Source, Research Study, 2019)

Table 5. Linear regression of highest education attained against socioeconomic stratifiers and Health outcomes

Variable	Coefficient	95% Confidence	Limits	Std Error	F-test	P-value
My average annual income is	0.442	0.235	0.650	0.105	17.8875	0.000052
House Rent is affordable in Federal Capital Territory	-0.315	-0.987	0.357	0.339	0.8639	0.354908
Transport is affordable in Federal Capital Territory	-0.144	-0.736	0.448	0.298	0.2341	0.629536
Health bill is affordable in Federal Capital Territory	-0.535	-1.142	0.072	0.306	3.0623	0.083228
Education Cost is affordable in Federal Capital Territory	0.011	-0.663	0.685	0.340	0.0011	0.973807
I can afford three square meal daily	-0.532	-1.166	0.102	0.320	2.7713	0.099131
Have you taken any vaccination	0.066	-0.507	0.640	0.289	0.0529	0.818600
Since last six 6 month show many times did you visit hospital	0.163	-0.012	0.338	0.088	3.4263	0.067146
CONSTANT	3.654	3.118	4.190	0.270	183.2495	0.000000

Correlation Coefficient: r^2 = 0.38

Source	df	Sum of Squares	Mean Square	F-statistic	p-value
Regression	8	79.1734	9.8967	7.5516	0.0000
Residuals	99	129.7433	1.3105		
Total	107	208.9167			

Source, Research Study, 2019.

The main aim of this research study was to identify existing health inequalities and causes in FCT so as to provide empirical data or information for policies reviews, adequate and effective program interventions not only in the study area but also others places where health inequalities exist. This is in line with WHO (2008:179) that requested all countries and advocates of quality to: "Ensure that routine monitoring systems for health equity and the social determinants of health are in place, locally, nationally, and internationally". Health inequalities could be defined as variations in health status across individuals in a population (Murray *et al*, 1999). From the result of this study, existing variations in highest education attained, knowledge of prevention activities (like hand washing, contraception methods, family planning, disease prevention methods, how to make balanced diet, ORT and where to get health counselling), average annual income and cost of housing with transport had been identified as the demographic and socioeconomic health inequalities in FCT.

According to Deiz-Roux and Mair (2010), labor and housing markets aid in sorting people

geographically by education, occupation, and income for example the urban planning, transportation, physical activity and geographic access to healthy foods. This is supported by the results of this study which showed the variations in gender, socioeconomic stratifiers (education attained, annual income, type of health facilities, number of visits to hospital since last six months, knowledge of prevention activities, costs of housing, education, healthcare, transport), health outcomes and physical environment- in tables 1 & 2 below. These variations could further impact negatively on the populace in FCT and aligned with WHO (2015), that reported that health could be affected by many determinants like social, economic, political, cultural and environmental conditions in which people were born, grow, live, work and age.

Discussion

Furthermore, the linear regressions of geographic location of the studied population against socioeconomic stratifiers (table1 below) indicated negative regression coefficient (indirect association) in all predictor variables-socioeconomic stratifiers. Except the average income with positive regression coefficient (direct association). The correlation coefficient of the geographical location and socioeconomic stratifiers of the studied population was (r=0.07) and the p-values < F-tests, implying strong association between socioeconomic stratifiers with geographical location of the studied population. That is, as socioeconomic stratifiers vary, geographical location of the studied population varies. These again agreed with the work of Marmot and Wilkinson (2003) who emphasized that health inequalities could be caused by social, economic, environmental or structural disparities that could lead to intergroup differences in health outcomes within societies. But disagreed with Braveman and Gottlieb (2014), who opined that the main causes of health inequality and inequity include: intrapersonal, interpersonal, institutional, and systemic mechanisms which control the distribution of power and resources differentially within lines of race, gender, class, sexual orientation, gender expression, and other dimensions of individual and group identity, the unequal allocation of power and resources like goods, services, and societal attention, manifested by unequal social determinants of health. Also, this study identified need to scale-up the socioeconomic stratifiers like knowledge of prevention activities, hand washing, contraception methods, family planning, disease prevention methods, how to make balanced diet, ORT and where to get health counselling, annual income as well as costs of housing, healthcare, education and transportation. In the study, increased highest education attained did not impact positively on prevention activity and most socioeconomic indicators (table 3 &5 below). There is equally need to deploy measures to reduce costs of housing, education and healthcare in FCT. Because according to Fell and Hewstone (2015), living with the daily stresses of poverty could have damaging consequences for long-term health. Wilkinson & Pickett (2009), added that comparing countries with similar levels of income, the societies with health inequalities especially, lower income inequality had on average, better population health if measured by life expectancy and other indicators than countries with greater income inequalities.

Equally identified in this study are need to strengthen health outcome indicators like: vaccination, use of qualified health professionals, quality health facilities and proper dieting, in FCT which was in agreement with the report of the Health Foundation, (2018) and WHO (2015) which emphasized that factors like where we live, the state of our environment, genetics, income, education, the relationships we had with friends and family had considerable impacts on health, while the more commonly considered factors like access to health services and frequency of use often had less of an affect. But disagreed with report by the Health Foundation (2018), WHO (2015) & CPHA (2015) that set of forces and systems shape the conditions of daily life and could be responsible for health inequities (the unfair and avoidable differences in health status seen within and between countries). Other causes of health inequalities as identified in this study include the physical environmental indicators of health inequalities which borders on: need for availability of more waste collection containers, ensuring periodic sanitation exercise and availability of quality domestic water which agreed with The Health Foundation (2018) & Zollner (2002), who reported that ecological

determinants of health include adequate amounts of fresh and uncontaminated water and oxygen with access to nature or green space. But did not agree with Yamel *et al* (2016) & Ferting & Paxson (2005), reasoned that health inequalities had association with childhood poverty, social inheritance with adulthood labor market, housing and physical conditions with health behavior and biological risk factors, which had large influences, not only on differences between social groups but also on the inequalities between men and women, ethnic groups, and geographic areas. According to WHO (2008) and Sen (1998) who reported that health inequality could be regarded as an indicator of general injustice in society. These could be why the Health Foundation (2018) and Jooma (2014), reasoned that in order to identify people with limited resources or inequalities in relation to income, occupation and family; construction of social housing, rents, and people requiring housing aid; lacking health qualities, education and inappropriate living physical environment, the determining indicator should be properly identified.

Conclusion

From this research study, the identified health inequalities in FCT include: variations in the socioeconomic stratifiers, health outcome and physical environment indicators. The socioeconomic stratifiers include: knowledge of prevention activities like hand washing, contraception methods, family planning, disease prevention methods, how to make balanced diet, ORT and where to get health counselling; low average annual income; high cost of house rent, healthcare, education with cost of transport moderate. The Health outcome indicators include: serious need for wholistic vaccination of the FCT populace; use of qualified health professionals during prenatal; births in households by qualified health professional; provision of enhanced livelihood to enable room to afford three square-meal daily; quality health facility, encourage number of hospital visits access and use. While Physical environment indicators identified were: need to drive supports in providing waste collection containers, disposal of waste as and when due, sustained periodic sanitation exercise and provision of quality source of domestic water in FCT, Nigeria. Therefore, there is immediate need for all stakeholders to drive adequate intervention supports in tackling the identified health inequalities in FCT, Nigeria in buttressing achievement of the Sustainable Development Goal, Universal Health Coverage and One Health targets/agenda.

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