

## Improving on the Accessibility and Availability of Essential Drugs in Calabar Metropolis, Cross River State

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### Abstract

In this research the accessibility and availability of essential drugs in private and public facilities have been surveyed in the Calabar Metropolis, Cross River State with solutions proffered on how to improve upon the accessibility and availability of these essential drugs by respondents via structured questionnaires. About 37 (40.2%) of the respondents were of the opinion that drug suppliers should be paid on time to enable them extend credit facilities and also the cost of drugs should be reduced to make the drugs more affordable. 27 (29.3%) respondents called for the enforcement of relevant drug policies, avoid corruption which meant diversion of monies that should be used to purchase essential drugs for the populace and multiple prescriptions should be discouraged. About 20% of the respondents were of the opinion that there should be effective transportation and distribution of drug products so that stock outs will be avoided when the drugs are taken to places where they will be effectively utilized and the incidences of expired drugs will be minimized with less wastage. More so, about 15% of the respondent believed that health personnel should be trained in inventory management of drugs and public education on drug use should be enhanced. In addition, storage facilities of drugs should be improved and finally about 7% of the respondents believed that making pharmacists in charge of distribution and sales of drug will improve accessibility and availability. Furthermore, the research shows 16.19 % and 44.76 %; OB and GB overall drug availability in the public health facilities respectively and 64.76 % and 82.30 %, OB and GB overall drug availability in the private health facilities indicating a higher drug availability in the private facilities. In facilities, Salbutamol inhaler 0.1mg dose and Glibenclamide 5mg tablets are the most readily accessible and available drugs.

**Keywords:** Improving, availability, accessibility, essential drugs.

### 1. Introduction

According to WHO, (1995) health is defined a state of complete physical, social and mental wellbeing and not merely the absence disease or infirmity. Good health is one of the fundamental human rights and a basis for the development of individuals and nations. These developments cut across personal, social and economic development. To achieve these, essential drugs must be provided as well as ensuring access to basic health services. Generally one third of the world's population lacks access to essential medicine and in countries like Africa and Asia; up to 50% of the total population do not even have the most basic essential drugs. Access is defined as the timely use of services according to needs (Peters *et al.*, 2008).

According to Essien, (2005), about 50 million people die yearly whereby 20% of these are due to treatable communicable diseases such as diarrhea, malaria and tuberculosis. In developing countries this scenario is made worse by extreme poverty and deprivation, emergence of new diseases and high prices of newly developed essential drugs. There exist social gaps between the standards of health care between developed

nations of the world, According to the United Nation Development Programme Report (UNICEF, 1991) the likelihood of a child born in developing countries in Asia, Africa or Latin America dying before 5 years is roughly 10 times that of a child in Europe or Northern America. There exist social gaps between the standards of health care between developed nations of the world and the rest of the world.. In Nigeria the average life expectancy is 57.11 years as compared to Kenya with 61.08 years and in USA of about 78.74 years (World Bank, 2014). This shows that there is great disparity and inequality in health between nations.

Drugs possess unique properties in the provision of health as they are an important component of the tools for health care practitioners the world over and are used at every level of the health care. This situation made WHO to embark on a global essential drug initiative to promote and support practical and relevant policies to reduce avoidable social impacts in health and health care (WHO, 1996).

Essential drugs initiative emerged from the growing gap between the potential of drugs to cure diseases and the limited ability of health system of poor countries to meet the need. At all levels of the health system of poor countries was the lack of modern drugs in sufficient quantities (Reich, 1987). This initiative implies that developing countries despite limited resources can extend the accessibility and availability of the most needed drug to a wide spread population with a select list of essential or basic drugs (Essien, 2005).

The essential drugs programme (EDP) and the Bamako Initiative (BI) was adopted as a means of actualizing this concept. WHO/UNICEF declared in Alma Ata that provision of essential drugs and vaccines to be one of the basic components of primary health care delivery and form an important tool for health care practitioners to achieve health care goals for their patients. The regular supply of certain drugs is used as indicators to evaluate progress of any health care initiative. The concept of essential drugs and its implementation is flexible and adaptable to suit different situation and the choice of essential medicines remain a national responsibility (WHO, 1988).

Drugs are a key component of any health system serving multiple social needs and occupying a unique position in Health Care Delivery (HCD). Availability and access still remain a problem to patients with out of stock syndrome in public/private health facilities (Essien, 2005). Drugs improve quality and quantity of life and improve health and drugs not being available in detrimental to the attainment of health. Shortages of drugs adversely affect the credibility of a health care system by reducing morale of health care workers. They provide cost effective way with benefits for the prevention of diseases, treatment of further ailments. Even though availability of appropriate drugs only is not sufficient to ensure the efficiency of a health system without efficient distribution prescription, pricing and rational use of medicines (Reich, 1987.)

According to WHO, (1998) countries with high income pay for drugs through government insurance and social programmers while in developing countries 50 – 90% of the cost of drugs is paid for by the patient. This represents the largest out of pocket household expense. According to WHO many people still lack access to essential drugs even through the concept that a restricted list of well-chosen medicine would meet the needs of most of the world in as valid as ever.

Evolution of Health Care in Nigeria have been characterized by short term planning into development plans from the colonial era to the latest which was the 5 year strategic plan from 2004-2008. There has been inability on the part of government to finance and improve health services due to corruption, bad governance, unstable economy, high population growth and cost of health care. The resultant effect of these is the unavailability of basic drugs giving rise to out of stock syndrome in public hospitals. In the private sector the drugs may be available and not accessible due to the high cost of the drugs.

Drugs are not only used to cure diseases but serve multiple social, psychological and political functions and the key component of any health system. Appropriate drugs are a necessary element of a health system and there is no quality health care without appropriate drugs. Drugs includes any substance or mixture of substances manufactured sold or advertised for use in the diagnosis, treatment, mitigation or prevention of any diseases disorder or abnormal physical state or the symptoms thereof in man or animals ;restoring correcting or modifying organic functions in man or in animals, disinfection or the control of vermin ,

Drugs are used to prevent diseases through vaccines, in treatment and avoiding the progression of other illness, furthermore shortages of drugs reduce the morale of the health workers and the credibility of the health system. During the financial crisis in the late 1980's essential drugs concept was encouraged due health ministries to search for ways to reduce drug cost and the basis was that a limited range of medicines would make healthcare better, drugs will be managed more effectively and scarce financial resources would be more efficiently utilized. There was also to be better access to health and drug needs (Quick, 2003). Prior to 1977 before the essential drugs concept, national drug policies were not known with only a few countries having drug lists, with informal drug selection practices and unbiased drug information limited. Education about generic substitution and rational prescribing was not available and no ethical or drug promotional activities were limited and only in the industrialized countries were standards for good manufacturing practices (GMP) developed. But after about 25 years of essential drugsover 100 countries have national drug policies and more countries introduced essential drugs concept into curricula for medical and pharmacy students.

In recognition of the myriad of problems facing the developing countries concerning access to drugs, WHO and UNICEF in affiliation with UN member states, pharmaceutical companies globally and other donor agencies brought the essential drugs programme in 1975.

### *1.1 The concept of essential drugs*

This concept of essential drugs emerged from the limited capability of poor countries to afford potential drugs to control basic diseases. The WHO defined essential drugs as “those concluded to be of the upmost importance and hence basic, indispensable and necessary for health need of the population. They should be available at all times in the proper dosage form to all the segments of the society. Poor countries lack modern drugs in sufficient quantities at all levels of the health care due to a myriad of problems some of which are:-

- 1) Limited resources
- 2) Problems arising from interactions of the pharmaceutical companies with social organization of poor countries due to product dumping, misleading achievements and product promotions and gift giving to Physicians and Pharmacists.
- 3) Lack of government policy on procurement, distribution and prescription
- 4) Poor training of Physicians and Pharmacists on relevant policies on procurement and rational drug use.

The concept of essential drugs was a single solution to multiple problems and promised to extend access, reduce cost and improve treatment (Reich, 1987)

### *1.2 Evolution of Essential Drug Concept*

In 1975, WHO's Director General, Halfdan Mahler gave a report on the World Health Assembly that gave National Drug Policies (NDP) as a top priority for developing countries to meet their health needs and economic priorities. The request stressed the essential drug approach as an effective means to this. During the 28<sup>th</sup> World Health Assembly requested the WHO to help member states by activity on the selection and procurement at reasonable cost of essential drugs of established quality corresponding to the national health needs? A working document was prepared that described how lists of drugs are used, defined terms related to basic or essential drugs and drug policy, economics and evaluation, proposed criteria for drugs selection and provided a preliminary list of drugs. It also stressed the need for additional information to prescribers and patients. The model list was included for adaptation by each country and guidelines on the process of prescribing essential drug.

In 1977, WHO prepared and published a model list of essential drugs which included 200 drugs and vaccines by generic name. Most products on the list were known to be therapeutically active and no longer under patent. In 1978, in the declaration of Alma Ata, provision of essential drugs and vaccines was one of the basic components of primary healthcare. In 1981, an action program on Essential drugs and vaccines was established and Health Action International (HAI) as a network of consumer and public interest organization to promote safe, rationale and economic use of pharmaceuticals worldwide to promote full implementation of WHO essential drugs program and to seek non-drug solution to health and nutrition problem. By 1990, more than 100 countries mostly developing countries including Nigeria had and were using their own list of essential drugs and WHO has made several revisions and the 15<sup>th</sup> revision was released in 2007 (WHO, 2009).

### *1.3 Essential Drugs: Social and Potential Impact*

Though the concept of essential drugs emerged from the WHO, it also was reflected in social and political process globally that was related to poor countries, multinationals enterprises and consumer organizations. (Reich 1987). Favorable condition for the concept was due to the worldwide environment in the late 1970s and 1980s and WHO staff and support organizations.

The number of people estimated to have regular access to essential drugs has risen from 2.1 billion to about 4 billion in 2003 but at least one third of the world's population still lack regular access to essential drugs. This lack of access mainly affects the poor population. According to Peters *et al.*, 2008 people in poor countries have less access to health services when compared to developed countries and even within countries the poor have access to less health services which also includes access to quality essential drugs. There is a causal relationship to poverty because health care that is delayed or unavailable worsens health leading to lost income and higher health costs which contributes to poverty.

Access is related to timely use of service according to need and dimensions of access are;

- Geographical Access meaning the physical distance the user has to travel to the delivery point
- Availability i.e. having the right type of drugs for those in need as well as the appropriate type of personnel to provide the service.
- Financial accessibility i.e. the relationship between the price of service offered and the willingness and ability of the user to pay for the drugs
- Acceptability i.e. the responsiveness of the pharmacist to the social and cultural dynamics of the

individuals and communities using the drugs.

The concept of essential drugs is supposed to be adaptable and flexible depending on different scenario whereby choice of essential drugs differs from country to country. There is not one size fits all. Issues also associated with inaccessibility of drugs are counterfeit and substandard drugs. Products must be produced according to Good Manufacturing Practices (GMP) but in developing countries technical, financial and human resources required to do this are lacking. This leads to decrease in effectiveness and safety especially for poor populations who are attracted by lower priced drugs (Pe'coul *et al.*, 1999). Financial access does not translate into correct use as there is need for continuous training of health personnel, improved of drugs management and provision of correct and reliable pharmacological information.

#### 1.4 Bamako Initiative

This initiative was initiated by UNICEF in collaboration with WHO in 1987 and was inaugurated in Bamako, Mali. This was a means of enhancing health care delivery in Sub Saharan Africa (Essien, 2005). During the meeting of the African Health Ministers, the underutilization of public health facilities and the non-availability of essential drugs was discussed and the decisions taken that communities be allowed to manage health facilities on their own and charge a minimal fee for drugs. The basis for the Bamako Initiative (BI) was the difficulty in implementing Primary Health Care (PHC) services as proposed at the Alma Ata Convention by West African states (Ridell, 2011). BI was seen as an African initiative to refocus and strengthen PHC with emphasis on maternal and child health, cost recovery of initial supply of seed stock of essential drugs at the entry point. In the BI programme, health care delivery is decentralized and sale of drugs is to raise money to buy new drugs and contribute to community development activities making it a drug revolving fund (DRF). About 30 years after the BI, the poor do not have access even though use of generic drugs has lowered costs for those who pay but not for those who cannot and the explanation was that BI was poorly interpreted and implemented (Ridell, 2011). In the later review by member countries it was reported that an improvement in the management of drugs at different levels and successful participation of private sector seen. Evidence shows that health system have been strengthened and political will is necessary in the successful implementation of the Bamako Initiative. (WHO, 1999)

#### 1.5 Access to Medicines

Access to health services of which drugs form an integral part is related to the timely use of services according to need. There is distinction between the supply of and the opportunity of these services and the actual realization of the need (Peters *et al.*, 2008). Barriers to access can be either from the supply or demand. Constraints to demand will be influenced by individuals, household or communities ability to use these services while supply barriers include situations in health services that may hinder the provision of services (Ensor and Cooper, 2004).

##### 1.5.1 Dimension of Access to Medicines

- A) Geographical Accessibility; The physical distance and travel time from service delivery point to the user. An inverse relationship exists between distance or the time it takes to travel from service delivery point to the user and the use of these services including access to essential drugs. Good roads are required for people to get health facilities and also affects the availability of drugs as they are necessary for easy distribution of drugs and medical consumables.
- B) Financial Accessibility; Affordability and the financing mechanisms for the poor and underprivileged have been a major determinant of access to health services and medicines. In low income countries like Nigeria, end users pay for the bulk of their medicines from household expenses and national health policies are not as widely applicable as in developed countries. The reasons end users pay for their medicines are because of government inability to adequately fund the health system, low wages and salaries and the scarcity of key medical supplies such as medicines (Peters *et al.*, 2008). Price and affordability determines access to a very great extent and poverty deters the poor from seeking treatment. Apart from the direct costs of the medicines, indirect costs also exists which includes transportation cost, time wasted, food and lodging expenses. The results of these is that there is catastrophic spending which is spending of a high proportion of household finances or distress financing – borrowing money or selling of assets resulting in deeper poverty and long term debt.
- C) Acceptability; This can determine the utilization of such health services even though Declaration of Alma Ata proposed the need for primary healthcare to be in line with prevailing cultural norms (Peters *et al.*, 2008). Patients consult different types of health providers from orthodox medical to traditional healers even patent medicine dealers and studies have shown that measurement of acceptability is variable and dependent on local situation.
- D) Availability; This is the opportunity of assessing the health care need including drugs as and when needed. Out of stock syndrome in public hospitals is a common feature in many parts of the developing

world .(Peters *et al.*,2008).According to Chandani *et al.*, (2012),supply chain factors affect drug availability and that at lower levels of the health care like the PHCs ,fewer medicines were available than at the general hospitals and Teaching Hospitals. Frost and Reid, (2010) proposed the framework of availability being a function of supply chain and is linked to manufacturing, forecasting, procurement, distribution and delivery activities.

### 1.6 Statement of the problem

Access to essential drugs is key to the performance of the health care delivery system .The priority of health and drug policy should be to provide safe,effective and affordable essential drugs of good quality in the right quantity to the whole population especially the poor (Quick, 2003).Access is defined as having drugs continuously available at public or private health facilities that are within one hours walk of the population.(WHO, 1999b).The availability of drugs is one of the most visible signs that patients are receiving quality care .According to Uzochukwu *et al.*, 2002, patients visits in Nigeria dropped by 50-75% when health facilities ran out of commonly used drugs. In Uganda the reason for the formal health services being inadequate was due to understaffing and irregular supply of essential drugs .From the perspective of policy makers and health providers, regular availability of drugs is a basic component necessary for an efficient health functioning system .In Cameroon studies have shown that regular supply, recovery of costs of purchase and better motivated staff improved the health system efficiency (Audebert and Mathonat, 2000).

Cross River State was one of the initial states that adopted the Essential Drugs Programme in 1989.This was a step taken to ensure the availability of drugs and the seed stock was from the World Bank and the drugs were for treatment of common ailments . The expectation was that there should be rational selection, procurement and distribution methods of essential drugs so that cheap and good quality drugs be available and accessible to the people. The program could not be sustained. According to Erhun *et al.*, (2001), branded prescription is still being practiced in many public institutions and this continues to partially erode the expected gains of the essential drug programme. In 1996, the Petroleum Special Trust Fund was initiated to run alongside the DRF in public hospitals which encouraged local manufacturers to produce drugs directly on a contract basis. The scheme was later phased out in 1999 and the situation is that out of stock syndrome and empty shelves are the norm. The justification for this study is to find out the reasons for this as the populace is forced to patronize private pharmacies and patent medicine dealers and ways of improving the essential drug accessibility and availability.

### 1.7 Significance of the Study

With the advent of the first Essential Drug List in 1977 and the Declaration of the Alma Ata in 1978that made provisions of essential drugs an element of primary health care,the understanding that more people will have regular access to essential drugs. According to Quick, (2003) the number of people with access worldwide to essential drugs have risen from 2.1 billion in 1977 to about 4 billion but one third of the population still lack regular access to essential medicines . WHO in 1988 has classified Nigeria as a country with low health coverage of less than 30% of the population and had experienced difficulties in Logistics ,Management and manpower of essential drugs Cross River State is no exception .The result of this is that despite enacting laws and establishing essential drugs programs, the availability and accessibility of essential drugs in public health facilities have remained poor but in private pharmacies ,the availability is high but with relatively high prices. This study aims to confirm or dispute these facts by accessing the level of availability of some indicator essential drugs in public and private drug outlets, factors responsible for this and obtain recommendation from pharmacists on how to improve access and availability.

### 1.8 Objectives of the Study

There is a general objective and specific objectives. The general objective of the study is to find out the ways of improving on the accessibility and availability of essential drugs in Cross River State.

The specific objectives are as follow:

1. The level availability of essential drugs in public and private health facilities
2. The factors that improve on the availability and accessibility of the essential drugs
3. The affordability of treatment of some acute and chronic disease conditions when compared to the daily minimum wage of a civil servant

### 1.9 Research Questions

Research questions were used to achieve these specific objectives mentioned above:

1. What is the level of availability and accessibility of the WHO indicator essential drugs in the public and private drug outlets?
2. How can the availability and accessibility of these essential drugs be improved upon?

## **2. Research Methodology**

### *2.1 Study Setting*

Cross River State is one of the states in the South-South Geopolitical zone in Nigeria with Calabar as its state capital. It is located at the southernmost part of the country and has boundaries with Akwa Ibom State to the west, north by Benue and Ebonyi States while it has international borders with Cameroon, Equatorial Guinea and the Atlantic Ocean. The state comprises of 18 local government areas with a total population of 2,817,626 with 1,459,530 males and 1,358,096 females according to the 1991 population census.(Essien, 2005). There are a total of 402 health care facilities with a tertiary hospital, state owned general hospitals and primary health care centres with several private owned pharmacy shops and drug outlets. There is a central EDP store that caters to all the health care centres in the state. Calabar South and Calabar municipality were chosen as representative local Government areas from the eighteen in the state.

### *2.2 Study Design*

The study used a cross sectional descriptive study design used to examine the factors that affect the essential drugs accessibility and availability. The descriptive study was considered to be appropriate because it provided reliable information and gave adequate description of a situation and not make generalization beyond the obvious.(Essien, 2005). The level of accessibility of essential drugs was based on the protocol developed by HAI/WHO (2009). To standardize the methodology, specific dosage forms and strength of each medicine surveyed was included. Medicines selected were based on HAI/WHO core list of 14 globally accepted medicines with additional 7 medicines based on local relevance used to treat a range of chronic and acute conditions. For each of the medicines, price data was collected on originator and the lowest priced generic at each facility.

Structured questionnaires were administered to hospital pharmacists and superintendent pharmacists of consenting private pharmacies to investigate the factors that affect the accessibility and availability of essential drugs in the state.

### *2.3 Population/Sample Characteristics*

The study population is made up of registered pharmacists of both public and private sector working in Calabar Municipality and Calabar South local Government. The population is finite and made up of both male and female.

### *2.4 Inclusion Criteria*

Consenting pharmacists working in the public and private sectors.

### *2.5 Size of the Sample*

The size of the sample was determined from the list of registered pharmacists in Calabar obtained from the Association of Hospital & Administrative Pharmacists of Nigeria, and Association of Community Pharmacists of Nigeria, Calabar Branch.

### *2.6 Data Collection Instrument*

Data was collected using researcher administered structured questionnaire (Appendix 1) and sighting of the drugs. Two intern pharmacists were trained in collecting data from the pharmacy shops while the researcher carried out the data collection in the hospital. The questionnaire was pre –tested in Akpabuyo Local Government area to validate and corrections made before the final distribution and collection.

### *2.7 Data Analysis*

The availability of individual medicines was calculated as percentage (%) of the health facilities where the medicines were found both for originator brands and generic brands. The accessibility was calculated in terms of affordability and as the cost of treatment of 30 days for chronic conditions and a full course of therapy for acute conditions when compared to the daily minimum wage of a government worker of N600.00 (Naira) per day. The price of medicines used was the median price of the lowest priced generic. Pretested questionnaires were also administered on hospital pharmacists and consenting superintendent pharmacists of private pharmacies. Data obtained was analyzed using Statistical package for Social Sciences (SPSS) for descriptive studies and presented in frequency tables and bar charts.

### *2.8 Ethical Approval*

Ethical approval was sought and gotten from The Cross River State Health Research Ethics Committee (CRS-HREC) with REC.NO.RP/REC/2015/295. Informed written consent was obtained from all respondents before administering questionnaires to them.

### 3.0 Results

#### 3.1 Sociodemographic Data

Table 1. Age distribution of respondents

	Frequency (%)
21 – 30	38 (41.3)
31 – 40	47 (51.1)
41 – 50	7 (7.6)
Total	92 (100.0)

Table 2. Sex distribution of the respondents

	Private	Public	Total
Female	5 (5.4%)	26(28.2%)	31 (33.7%)
Male	27(29.3%)	34(37.0 %)	61(66.3%)
Total	32 (34.8%)	60 (65.2%)	92(100.0%)

p>0.05 (NS)

Table 3. Educational qualification of respondents

	Frequency (%)
B.Pharm	82(89.2)
FPCP	4(4.3)
M. SC	4 (4.3)
Ph.D.	2 (2.2)
Total	92 (100.0)

Tables 1-3 show the demographic characteristics of the respondents. The respondents who were pharmacists were 92 in number with 61(66.3%) males and 31(33.7%) females. Most of them were between the ages of 31-40 years. About 82 (89.2%) had B. Pharm only as the least professional qualification with 4 (4.3%) being fellows, 4(4.3%) with M.Sc. and 2(2.2%) with PhD with 32(33.8%) working in private pharmacy shops while 60(65.2%) worked in the public sector being hospital pharmacists.

#### 3.2 Characteristics of health facility

Table 4. Type of health facility of the respondents

	Private	Public	Total
Primary	0 (0.0%)	0 (0.0%)	0 (0.0%)
Secondary	0 (0.0%)	10(10.9%)	10(10.9%)
Tertiary	0 (0.0%)	50(54.3%)	50(54.3%)
Pharmacy	32 (34.8%)	0(00.0%)	32(34.8%)
Total	32(34.8%)	60(65.2%)	92(100.0%)

Chi cal. = 12.000; df = 1; p<0.05

Table 4 shows the level of practice of the respondents with majority of them in the tertiary institutions being 50 (54.3%), 10(10.9%) in secondary institutions while the community pharmacists that consented to be interviewed were 32 (34.8%).

Table 5. Availability of essential medicines list in the health facilities

	Private	Public
Available	16 (50.0%)	60(100.0%)
Not available	16 (50.0%)	0 (0.0%)

p>0.05 (NS)

Table 6. Services provided in the health facility of the respondents

	Private	Public	Total
Out-patient care only	32 (100.0%)	0 (0.0%)	32 (100.0%)
Out-patient and in-patient care	0 (0.0%)	60 (100.0%)	60 (100.0%)
Maternal and child health	0 (0.0%)	60 (100.0%)	60 (100.0%)
Medical cases only	0 (0.0%)	(00.0%)	0 (0.00%)
Medical and surgical care	0 (0.0%)	60 (100.0%)	60(100.0%)

Chi cal. = 12.000; df = 1; p<0.05

Table 6 shows the services provided by the health facility with all the private pharmacies providing only outpatient care while the public health facilities provided outpatient, in patient, maternal and child care, medical and surgical care.

Table 7. Availability of an alternative power supply in health facilities

	Private	Public
Available	32 (100.0%)	60(100.0%)
Not available	0 (0.0%)	0 (0.0%)

p>0.05 (NS)

Table 8: Availability of a good means of transportation in health facilities

	Private	Public
Available	11 (34.3%)	40 (66.7%)
Not available	21 (65.7%)	20 (33.3%)

p>0.05 (NS)

### 3.3 Awareness of essential drugs and goals

Table 9. Awareness of the concept of essential drugs by the respondents

	Private	Public
Aware	32(100.0%)	60 (100.0%)
Not aware	0 (0.0%)	0 (0.0%)

p>0.05 (NS)

Table 10. Achievement of the goals of essential drugs

	Private	Public
Achieved	11 (34.4%)	18 (33.3%)
Not achieved	21 (65.6%)	42(66.7%)

p>0.05 (NS).

Table 9 shows that all the respondents were aware of the concepts but differed in their opinion as to the attainment of the goals of essential drugs as shown in Table 10. But majority of the pharmacists both in the private sector and public sector (more than 65.0%) said the goals had not been achieved.

Table 11. Sources of drugs in the health facility of respondents

	Private	Public
Central medical stores	0 (0.0%)	20 (33.3%)
Drug manufacturing companies	27 (84.4%)	40(66.7%)
Open market	5 (15 .6%)	0 (0.0%)
Donation	0 (0.0%)	0 (0.0%)

p>0.05 (NS)

For the public or government owned pharmacies, 40(66.7%) dispensed drugs obtained from their central medical stores while the rest obtained drugs directly from drug manufacturing companies.

### 3.4 Strategies on improving accessibility and availability of essential drugs in Calabar, Cross River State

Table 16. Strategies on improving accessibility and availability of essential drugs in the state

	Frequency (%)
Improve on funding	55 (59.3)
Payment of suppliers	37 (40.2)
Reduction of drug cost	38 (41.3)
Availability of essential drugs	27(29.3)
Enforcement of drug policies	27(29.3)
Discourage multiple prescription(polypharmacy)	20 (22.2)
Eliminating corruption	20 (22.2)
Reduction of stock-out	17 (18.5)
Effective transportation and distribution	17 (18.5)
Reduce wastage of drugs	17 (18.5)
Staff training on Inventory management	13(14.1)
Enhancing public education on drug use	13 (14.1)
Improve storage facility	13(14.1)
Making pharmacists in charge of distribution and sales of drugs	7 (7.4)
Eliminating bottle necks	1 (1.1)



### 3.5 Available and accessible WHO indicator drugs in health facilities within Calabar

#### Drug availability: Public Facilities

Table 17a. Percentage availability of WHO indicator drugs in health facilities

	OB	GB
1 Salbutamol inhaler 0.1mg dose	40.0	40.0
2 Glibenclamide 5mg tablets	40.0	100
3 Atenolol 50mg tablets	0.00	68.5
4 Captopril 25mg tablets	0.00	71.4
5 Simvastatin 20mg tabs	0.00	66.7
6 Amitriptyline 25mg tabs	0.00	100.0
7 Ciprofloxacin 500mg tabs	40.0	100.0
8 Co-trimoxazole 80 + 240mg Susp	0.00	100.0
9 Amoxicillin 500mg capsules	20.0	100.0
10 Ceftriaxone 1g injection	40.0	83.3
11 Diazepam 5mg tabs	20.0	66.7
12 Diclofenac 50mg tablets	40.0	100.0
13 Paracetamol syrup	20.0	100.0
14 Omeprazole 20mg tablets	20.0	100.0
15 Albendazole 200mg tablets	40.0	100.0
16 Metronidazole 200mg tabs	20.0	100.0
17 Insulin injection	0.00	N/A
18 ORT	N/A	100.0
19 Artemether/lumefantrine tabs	20.0	100.0
20 Oxytocin injection	0.00	33.3
21 Magnesium sulphate injection	0.00	6.25
Overall availability (%)	16.19	44.76

#### Drug availability: Private Facilities

Table 17 b. Percentage availability of WHO indicator drugs in health facilities

	OB	GB
1 Salbutamol inhaler 0.1mg dose	100.0	71.4
2 Glibenclamide 5mg tablets	100.0	100
3 Atenolol 50mg tablets	57.1	85.7
4 Captopril 25mg tablets	28.6	71.4
5 Simvastatin 20mg tabs	42.8	71.4
6 Amitriptyline 25mg tabs	14.3	57.1
7 Ciprofloxacin 500mg tabs	100.0	100.0
8 Co-trimoxazole 80 + 240mg Susp	85.7	100.0
9 Amoxicillin 500mg capsules	100.0	100.0
10 Ceftriaxone 1g injection	100.0	100.0
11 Diazepam 5mg tabs	85.7	71.4
12 Diclofenac 50mg tablets	100.0	100.0
13 Paracetamol Syrup	42.3	100.0
14 Omeprazole 20mg tablets	14.3	100.0
15 Albendazole 200mg tablets	100.0	100.0
16 Metronidazole 200mg tablets	71.4	100.0
17 Insulin injection	85.7	N/A
18 ORT	N/A	100.0
19 Artemether/lumefantrine tablets	100.0	100.0
20 Oxytocin injection	14.2	28.5
21 Magnesium sulphate injection	N/A	28.5
Overall availability (%)	64.76	82.3

## 4. Discussion

This study shows that the majority of the respondents were males (66.3%) and more also in the private sector than in the public sectors. The reason being that more males are adapted to the pharmaceutical environment while more females were in the hospital sector (28.2%) than in the community practice. 51.1% of the respondents were between the ages of 31-40 is the more productive ages of the work force. Majority of the respondents (89.2%) had Bachelor of Pharmacy as the highest qualification and the scenario is not acceptable as higher qualifications leads to higher quality of care. Pharmacist's role in the health setting is evolving and they

need to be trained to meet this demand.

Characteristics of health facility showed that 34.8% were in the private sector while 65.2% of the respondents involved in public drug outlets showing that they had first-hand experience of the situation. 100% of the facilities had alternative power supply indicating that the storage of drugs was at a favourable temperature and quality assured. 84.4% sourced their drugs directly from drug manufacturing companies ensures that counterfeit medicines are not purchased and also ensures quality.

A research by Irene *et al.* (2016) highlighted the following as barriers to availability and accessibility of essential drugs: lack of availability due to poor funding, poor and inefficient delivery and supply system, irrational prescription and prescription outside the essential drug list. In this research, One of the super suggestions proffered by the respondents on how to improve on accessibility and availability of essential drugs in Calabar metropolis in particular and Cross River State in general is to improve funding of essential drugs to enable more drugs to be purchased as seen in the response of 55(59.8%) of the respondents. Also, about 37 (40.2%) of the respondents were of the opinion that drug suppliers should be paid on time to enable them extend credit facilities and also the cost of drugs should be reduced to make the drugs more affordable.

To make drugs easily available, 27(29.3%) respondents called for the enforcement of relevant drug policies, avoid corruption which meant diversion of monies that should be used to purchase essential drugs for the populace and multiple prescriptions should be discouraged. About 20% of the respondents were of the opinion that there should be effective transportation and distribution of drug products so that stock outs will be avoided when the drugs are taken to places where they will be effectively utilized. Also the incidences of expired drugs will be minimized with less wastage.

More so, about 15% of the respondent believed that health personnel should be trained in inventory management of drugs and public education on drug use should be enhanced. In addition, storage facilities of drugs should be improved and finally about 7% of the respondents believed that making pharmacists in charge of distribution and sales of drug will improve accessibility and availability.

Furthermore, the research shows 16.19 % and 44.76 %; OB and GB overall drug availability in the public health facilities respectively and 64.76 % and 82.3 0 %, OB and GB overall drug availability in the private health facilities indicating a higher drug availability in the private facilities. In facilities, Salbutamol inhaler 0.1mg dose and Glibenclamide 5mg tablets are the most readily accessible and available drugs.

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