THE PROBLEMS OF MARKETING ETHICAL DRUGS IN NIGERIA
A STUDY OF ENUGU STATE

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CERTIFICATION

I certify that the content of this project was completed under my supervision in partial fulfillment of the requirement for the Award of a Master of Business Administration in Marketing.

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DEDICATION

To God Almighty.

ACKNOWLEDGEMENT

God gave me the health and courage to withstand the odds. There is no individual that can be an Island in this modern world and I have to acknowledge the contributions of those who provided the motivations, spiritual, moral and financial support needed to produce this work.

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Obiora Ifeanyi Elias
Enugu, 2009.

ABSTRACT

This research is a study of the problems of marketing ethical drugs in Nigeria. The Ultimate Objectives are to determine the extent of the problems militating against marketing ethical drugs, to determine the best solution on how to redress the problem associated with the marketing ethical drugs; to find solutions to the improper drug usage and marketing.

Data were gathered both Secondary and Primary sources, manifested in the literature review, the use of questionnaires and interview schedules respectively. Simple percentage tables, pie charts and bar charts were used for analysis. The hypothesis were subsequently tested by the use of chi-square statistical technique.

Based on the data analysis, the following are the major findings of the research:-

There are companies in Asia and Europe that are Mass-producing highly diluted drugs and are marketing them in Nigeria.

87.5% of patients and doctors are ignorant and lazy to examine drug packages for expiry dates, spelling errors and other lapses before purchasing them.

There is a 70% wide spread use of herbal medicines and synthetic drugs which can have serious clinical consequences.

In view of the findings of this work; the following recommendations among others are proffered:-

Patent dealers should not be allowed to stock foods and cosmetics product.

Pharmaceutical inspectors should wake up, to better implement the drug regulatory laws.

Pharmaceutical Inspectors should be well remunerated so that they would not be distracted from their regulatory roles.

Federal Government should restructure the Task-Force to report directly to PCN.

MDN Decree of 1990 should be amended or reviewed to incorporate adequate funding for Task-Force operations.

NAFDAC's Central Laboratories in Abuja, Lagos and Port-Harcourt should be equipped and secured for medicine analysis.

NPC in NAFDAC should make the spontaneous report form available at all times.

In conclusion, the field of planning is an important area of marketing ethical drugs because of its influence on drug consumers and the economy.

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CHAPTER ONE

1.1 INTRODUCTION

In Nigerian today, there is an influx into the market, of fake machine parts, fake motor spare parts, fake chemicals, fake adulterated food items, amongst many others. It may appear that almost every existing product has a fake counterpart. According to Mba (2005:176) the era 1985-2004 in Nigeria has heralded the regime of faking and quackery, counterfeit drugs, quack doctors, illegal chemist shops and hospitals. Ohuabunwa (2002:42) maintained that drugs are no exception. In fact, the menace of drugs became prevalent in the last decade and the present situation is alarming.

Empirical observations have shown that there may be more fake than genuine drugs in circulation. Osibo (1998:81) stated that, a disturbing aspect of the counterfeit drugs menace is that the effects of consuming such drugs go unnoticed most of the time except in such cases where it results in mass death. Although, there are generally no reliable data on the mortality or morbidity arising from the consumption of counterfeit drugs in Nigeria, the sales of such drugs prevail uninspectedly (Dora, 2006:14).

The trend in the last decade prompted the public and particularly the professional bodies, notably the pharmaceutical society of Nigeria, to pressure the government to taking definite steps towards controlling the preponderance of fake drugs in Nigeria. The government responded by promulgating the counterfeit and fake drugs

(miscellaneous provisions) decree No. 21 of 1988. This decree prohibited the sale and distribution of counterfeit, adulterated, banned and fake drugs or poisons in open markets and without a license of registration. The decree also created penalties for the breach of the provisions of the decree and a taskforce was established in each state of the federation, charged with the responsibility of seizing any drug or poison illegally displayed in unlicensed or unregistered premises. Moreso, the shortcomings in the decree led to its being repealed by decree No. 21 of 1989 and subsequent amendments.

Finally, drugs play pivotal role at all levels of healthcare. They are useful for maintenance of health, diagnosis, prevention, treatment, or mitigation of diseases/disorders. However, due to immense benefits derived from drugs and their global usage, some unscrupulous persons see them as a means of making fast money, thus, they indulge in producing and circulating fake/counterfeit drugs.

1.2 STATEMENT OF PROBLEMS

There are problems in many developing countries where manpower shortage has led to people with no training in pharmacy being employed in the procurement, storage and distribution of drugs.

As quoted Muoneke (2003:2) in one of his journals, the ratio of pharmacists to the population is relatively high in Urban Areas but extremely low in Rural Areas. This lack of

personnel causes serious problems in the correct usage of drugs, especially where quacks are involved in drug distribution and marketing.

In most cases, the drugs are improperly stored, which could result in the degradation of drugs with resultant reduction in their shelf life.

Moreover, patent medicine dealers could not differentiate between the terms “cool”, “cold”, and “Room temperature”. This suggests they do not know the proper storage conditions required for various classes of drugs.

They do not seem to know fine distinction between drugs, foods and cosmetics products. The rampant stocking and sale of prescription drugs by patent medicine dealers is due to the weakness in the implementation of drug regulatory laws.

There are companies in Asia and Eastern Europe that are Mass-producing highly diluted drugs and are marketing them in Nigeria. Such has no indicated labels of actual content. And some Nigerian Merchants arrange with such companies to increase the quantity and reduce the quality to make easy profit.

Some traders buy empty cases with labels which are later filled up with chalk powder or coloured liquid concoctions in the squalor of the slums in Nigeria particularly, and are supplied to Hospitals or sold in pharmacy stores all over the country.

Another problem that is worth mentioning is the widespread use of herbal medicines and synthetic drugs which can have serious clinical consequence.

Generally, other problems which are pervasive in marketing ethical drugs in Nigeria include:-

- Corruption and conflict of interest among drug counterfeiters, drug regulators and drug marketers.
- Insecure and unfriendly environment.
- Discriminatory regulation by exporting countries.
- Lack of or inadequate legislation.
- Chaotic drug distribution system.
- Most Nigerians indulge in irrational self medication.
- Some Nigerian Hospitals/Clinics source drugs from incredible sources.
- Ignorance and laziness of some patients and doctors to examine drug packages for expiry date, spelling errors and other lapses before purchasing them.
- Drug availability in the public and private health care delivery system in Nigeria is in a poor state.
- Inadequate funding of hospital pharmacies and the "out of stock syndrome".
- The major problem of marketing ethical drugs in Nigeria is the alarming presence of fake/counterfeit drugs which have been identified in various forms by NAFDAC.

1.3 OBJECTIVES OF THE STUDY

This study aims at

1. Determining the extent of the problems militating against marketing ethical drugs, and the level of dominance by fake drugs in Nigerian market.
2. Ascertaining the number of registered and certified drug marketers.
3. Assessing and communicating risks and benefits of drugs in the market.
4. Educating and informing the patients, doctors and pharmacists and drug manufacturers and marketers.
5. Evaluating the practices of patent medicine dealers.
6. Determining the best solution on how to redress the problems associated with the marketing ethical drugs and improper drug usage.

1.4 RESEARCH QUESTIONS

- Are the laws governing fake drugs adequate to curb, counterfeit and menace of drug faking?
- In which form do fake drugs come, especially in Nigeria?
- What are the actual problems of marketing prescription – only drugs?
- What are the underlying causes for the availability of fake drugs in Nigeria?

1.5 THE HYPOTHESIS OF THE STUDY

1. Prescription – only drugs are not best marketed in Nigeria.
2. Distribution of counterfeit drugs does not make marketing of ethical drugs impossible.
3. There is no significant effect on the division of labour in the marketing of ethical drugs.

1.6 LIMITATION OF THE STUDY

This project is limited to some factors such as the study of some problems of marketing Ethical Drugs in Nigeria but with a special emphasis on Enugu Urban; the drug manufacturers; drug importers; drug sales agents, patent medicine dealers, chemists, pharmacists, etc. Other factors are limited times and insufficient fund, respondent's reluctance, illiteracy and hostility.

1.7 SIGNIFICANCE OF THE STUDY

This study is significant to all Nigerian's health, especially, the inhabitants of Enugu Urban; because the people's right to health include right to a reliable standard health care and assurance that drugs received are not only genuine but safe, effective and affordable. It is the responsibility of the government to protect its citizens from the clutches of unscrupulous members of the society. The approach is very simple with emphasis on technical depth of what individuals require for easy understanding. The medical professionals, pharmacists chemists with operation

license, doctors and authorized medicine vendors, lecturers in the same field, academic researchers and students of tertiary Institutions should find it exceptionally useful for meeting and solving critical problems and challenges in the fields of medicine, pharmacy and drug administration and control.

1.8 DEFINITION OF TERMS

1.8.1 Adverse Drug Reaction

According to WHO, "ADR" is a response to a medicine which is noxious and unintended, and which occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of disease; or for the modification of physiological function. Here, a patient experiences an unwanted and/or harmful (noxious) reaction following drug therapy. An ADR is essentially a "bad" reaction suffered by the patient and differs from "side effect" which is essentially and unexpected therapeutic response that is related to the pharmacological properties of the drug and may be "good" or "bad".

1.8.2 Unexpected Adverse Reaction

This is an adverse reaction, the nature or severity of which is not consistent with domestic labeling or market authorization, or expected from characteristics of the drug

1.8.3 Adverse Event

Any untoward medical occurrence that may be present during treatment with a pharmaceutical product but which

does not necessarily have a causal relationship with the treatment. An unwanted event occurs during or after the use of a drug. The term “adverse event” is a broad one encompassing “adverse drug reaction”, caused by the drug; and other unwanted reactions, the time of occurrence of which may be related to the use of the drug but are not caused by the drug.

1.8.4 Serious Adverse Experience

Is any untoward medical occurrence that at any dose:-

- Results in death.
- Is life-threatening.
- Requires patient hospitalization or prolongation of existing hospitalization.
- Results in persistent or significant disability or incapacity.
- Causes a congenital anomaly or birth defect.
- Requires an intervention to prevent permanent impairment or damage.

1.8.5 Side Effect

Is any unintended effect of a pharmaceutical product occurring at doses normally used in humans, which is related to the pharmacological properties of the drug. Such effects may or may not be beneficial. Side effects are related to the known properties of the drug and can often be predicted. It must be stressed that in pharmacovigilance NAFDAC is interested in all drug related reactions – this

includes both side effects and suspected adverse drug reactions.

1.8.6 Adverse Drug Reaction Case Report

A case report in pharmacovigilance is notification relating to a patient with an adverse medical event or laboratory test abnormally suspected to be induced by a medicine.

1.8.7 Signal

A signal refers to “Reported information on a possible causal relationship between an adverse event and a drug; the relationship being known or incompletely documented previously. Usually, more than a single report is required to generate a signal, depending upon the seriousness of the event and the quality of the information.

1.8.8 Pharmacovigilance

This is the science and activities relating to the knowledge, detection, assessment and prevention of adverse effects or any drug-related problems.

1.8.9 Ethical Drugs

These are drugs only prescribed by the authorized physicians, pharmacists, chemists and doctors, including any medical professional for treatment of adverse medical cases (ADRC).

1.8.10 Over-The-Counter Drugs

Simply known as OTC, are drugs not necessarily prescribed by doctors which are bought and sold over the counter. In other word they are self medication drugs.

CHAPTER TWO

THE REVIEW OF RELATED LITERATURE AND THEORETICAL FOUNDATIONS.

2.1 THE MEANING OF ETHICAL DRUGS AND ITS RELATIONSHIP WITH HERBAL MEDICINE (DRUG INTERACTIONS).

Drugs in this context are not substances which stimulate the nervous system, especially those that are addictive examples are alcohol, cocaine, Heroin, marijuana, amphetamine-based drugs which are substances used as a medicine or contained in a medicine as ingredient drugs.

Ethical drugs, therefore, are those drugs manufactured either locally or internationally, have satisfied the requirements of NAFDAC, WHO, ISO and FDA, certified for prescription only by a qualified doctor, pharmacists, chemist or any qualified health practitioner (WHO, 2005:2).

In assonance with the above postulate, Swipha (a pharmaceutical company based in Nigeria) affirmed being in the forefront of manufacturing, marketing and distribution of the following ethical drugs – BACTRIM and ROCEPHIN (an Anti-bacterial drug and Antibiotics), ROFERON – A, and ANTI-AIDS Drugs (an Antiviral and Anti-Cancer), HIVID, and INVIRASE and VIRAZID. Anti-malarial (FANSIDAR, FANSIDAR COMBI, FANSIMEF, ROBAQUINE, ARENAX, DART, FARENAX), Roll Back malarial products include (ROBAQUINE RBM, FANSIDAR RBM). Tranquilizers and/or sedatives drugs include (LEXOTAN, VALIUM), drugs for Hypnotics (ROHYPNOL and SWIDON) and finally Anti-

Rheumatics drug – (NAXEN). These drugs above are dully registered Trade Mark and Brands of Swipha drug manufacturing Nigeria Company.

In addition, on the over the counter drugs (O.T.C) business segment, Swipha has its strength in the vitamins sector which ranges from SUPRADYN, SUPRA-KIDS to SUPRAFIT, covering all age groups and life styles. It has also a herbal product which has an exclusive license from Switzerland and it is called BIO-STRATH. The other products which are well known brands are SWIPHAMOL and POLYFORT.

From my explanation above, it is obvious that O.T.C (over-the-counter) drugs are usually self medication as they are bought and sold over the counter and they are commonly easily available in any patent medicine shop in Nigeria.

What then is the rational for drug sales in Nigeria. Figure 2:2 takes this into consideration.

2.2 THE RATIONALE FOR DRUG SALES IN NIGERIA

According to Dora (2006:67)drugs play pivotal role at all levels of health care. They are useful for maintenance of health, diagnosis, prevention, treatment, or mitigation of diseases/disorders. However, due to immense benefits derived from drugs and their global usage, some unscrupulous persons see them as a means of making Fast money, thus they indulge in producing and circulating fake or counterfeit drugs.

In the bid to safeguard the public through eradication of fake drugs and substandard regulated products from the society, government established NAFDAC in 1993 with the mandate to:-

- Control and regulate the manufacture, importation, exportation, distribution, advertisement, sale and use of food, drugs, cosmetics, chemicals/detergents, medical devices and packaged water including all drinks. Therefore, the rationale for drug sales in Nigeria maintains that for all regulated products to be fit and safe for human consumption, they must have been tested, proved and certified by NAFDAC thereby bearing a certified NAFDAC Registration Number, full addresses and phone numbers of the manufacturer, the Expiry and production dates (Dora Akunyili, 2004:19).

  Despite the NAFDAC's effort to sanitize drug markets in Nigeria fake, and counterfeit Drugs in the health sector have continued to surface. Figure 2:3 looks into this in detail.

2.3 FAKE AND COUNTERFEIT DRUGS IN THE HEALTH SECTOR

Drug counterfeiting is primarily a health related crime with enormous economic ramifications (www.ncbi.nlm.com). Fake/counterfeit drugs provide illegal benefits for the perpetrators at the expense of the patients, health care system, practitioners, the drug regulatory authority and the pharmaceutical industry whose products are counterfeited.

It poses a growing threat, especially to the developing countries, where the most counterfeited medicines are those used to treat life-threatening conditions such as malaria, tuberculosis and HIV/AIDS. Fake drugs therefore complicate the already complex and poor prognosis of the global health care situation, particularly in the developing countries.

In support of the above postulate, Akunyili (2006:4) maintains that counterfeiting of medicines is a form of terrorism against public health and it is an act of economic sabotage. It is mass murder. The evil of fake drugs is worse than the combined scourge of malaria, HIV/AIDS and Armed Robbery, because malaria can be prevented, HIV/AIDS can be avoided or managed, robbers may not kill but fake drugs kill en mass.

The social problems posed by hard drugs cannot be compared with the damage done by fake drugs, because illicit drugs are taken out of choice and by those that can afford them, but fake drugs are taken by all and anybody can be a victim. Counterfeit drugs case treatment failures, drug resistance and death.

In the like manner, Babalola et al (2001:4) highlighted that, in Nigeria today there is an influx into the markets of fake machine parts, fake motor parts, fake chemicals, fake and adulterated food items. It may appear that almost every existing product has a fake counterpart. Ohuabunwa (2002:106) affirmed this by saying that the era 1985-2000 in Nigeria has heralded the regime of faking and quackering, counterfeit drugs, quack doctors, illegal chemist shops and

hospitals. The menace of fake drugs became prevalent in the last decade and the present situation is alarming in the West African sub-region, including Nigeria, but not until Dora Akunyili assumed office in 2001 as the Director-General of NAFDAC.

Empirical observations (Osibo, 1998:87, explains) have shown that there may be more fake than genuine drugs in circulation. He out-lines the counterfeiting practices in developing communities to include:-

i. Counterfeiting when demand for an expensive product is high.
ii. Tampering with original packages.
iii. Tampering with drugs packed in large sizes
iv. Swapping of labels of two products manufactured by the same company.
v. Exploiting similarity in appearance between the original preparation and the counterfeit.
vi. Labeling low price products with a high price product label.
vii. Passing off a company's product for another.

A disturbing aspect of the counterfeit drug menace is that the effects of consuming such drugs go unnoticed most of the times except in such cases where it results in mass deaths. There are generally no reliable data on the mortality or morbidity arising from the consumption of counterfeit drugs in Nigeria.

In 1947, 14 children were reported dead after being administered chloroquine phosphate injections (NAFDAC

Journal, 2007:71). In 1990, 109 children died after being administered fake paracetamol (Aluko, 1994). In 2007, a family of 4 children and their parents died after taking their supper prepared with locally made insecticide popularly known as "Ota pia pia" which was mistaken as vanilla flavour that gives a salivating aromatic appetizing flavour, in Abuja. In Lagos, in 2008, a brand of baby malaria syrup known as "My pickin" killed 17 babies (Punch newspaper, 2008:40). As usual, the above incidences stimulated the government into taking positive steps, principally arising from public outcry.

Despite the global nature of fake or counterfeit drugs, the international community does not have a harmonized definition of fake/counterfeit drugs to reflect its global nature and capture its entire essence. Akunyili (2004) gave reason for this, that it is because it is seen from different perspectives by different countries. What then are fake/counterfeit drugs, figure 2:4 has the definition.

2.4 FAKE/COUNTERFEIT DRUGS DEFINED

According to World Health Organization (WHO), Fake/counterfeit drugs or medicines are those, which are deliberately and fraudulently mislabeled with respect to identity and/or source. Counterfeiting can apply to both branded and generic products and counterfeit products may include products with or without correct ingredients, without active ingredients, with insufficient active ingredients or with fake packaging.

NAFDAC, Nigeria (2004) identified various forms of Fake/Counterfeit drugs in Nigeria, which includes:-

- Drugs with no active ingredients eg. having only lactose or even chalk in capsules and tablets eg. olive oil in sypradyn capsules.
- Drugs with insufficient active ingredients eg. 41mg chloroquine instead of 200mg, 50mg Ampicillin as against 250mg.
- Drugs with active ingredients different from what is stated on the package eg. paracetamol tablets packaged and labeled as Fansidar (Sulphadoxine pyrimethamine).
- Clones of fast moving drugs:- these are drugs with the same quantity of active ingredients as the genuine original brand.
- Drugs without full name and address of the manufacturer.
- Herbal preparations that are toxic, harmful, ineffective or mixed with orthodox medicine.
- Expired drugs or drugs without expiry date, or expired and re-labeled with the intention of extending their shief-life.
- Drugs not certified and registered by NAFDAC.

2.5 MAJOR REPORTED TRAGEDIES ASSOCIATED WITH SUBSTANDARD AND FAKE/COUNTERFEIT DRUGS

According to Akunyili (2004:20), In Nigeria, due to poor reporting system, cases of worsening disease conditions or

death due to fake drugs abound, but unfortunately there are no statistics to support them. in addition, due to cultural cleavages, deaths are sometimes attributed to witchcrafts from the “wicked ones” or “enemies”. This again does not help the reporting system. However, few reported cases are, in 1989, at the University of Nigeria Teaching Hospital (UNTH) Enugu, children with malaria, treated with poorly compounded chloroquine syrup, developed chloroquine poisoning complications, which caused the deaths of four children. Also, in 1990, “the paracetamol syrup disaster” occurred when 109 children died in Ibadan and Jos, after taking paracetamol syrup produced with the toxic ethylene glycol solvent instead of propylene glycol. This tragedy occurred more than fifty years after the U.S.A, ethylene glycol tragedy (Mouneke 1991:217).

Quoting Akunyili as quoted Nigerian Guardian Newspaper, fake cardiac stimulant (Adrenalin) contributed to the death of two children during open-heart surgery at UNTH, Enugu. Further investigations by NAFDAC revealed that even the muscle relaxant used was substandard and the infusion was not sterile, and both were purchased from unregistered pharmacies manned by non-professionals. Even the Adrenalin, which was supplied by a registered pharmacist, was purchased from an open drug market at Onitsha.

2.6 THE IMPLICATIONS OF COUNTERFEIT/FAKE DRUGS

2.6.1 Fake drugs have embarrassed the health care providers and eroded the confidence of the public on the health-care delivery system (Muoneke, 2003:16). This development led to treatment failures, organ dysfunction or damage, worsening of chronic disease conditions and the death of many Nigerians. The situation became so bad that even when patients were treated with genuine anti-biotics, they no longer respond positively due to resistance induced by previous intake of fake/counterfeit antibiotics.

2.6.2 Nigerians who can afford it, travel abroad to obtain medical treatment for simple illnesses that can be managed at home because of fake drugs.

2.6.3 Individual hospitals, clinics or even practitioners often resorted to importing drugs for use in their practice, thereby encountering distractions from their core competence which is caring for the patients.

2.6.4 Most of the local pharmaceutical industries that are producing genuine drugs, employing labour and boosting the Nigerian economy, could not break even because of unfair competition with drug fakers, who are only paying for packaging and probably freighting without spending on active ingredients, which are the most expensive

components of any drug. They even found it difficult to export because of the bad image created by fakers.

2.6.5 The fakers even became agents of waste disposal to their collaborators from other countries to dispose expired drugs by importing them into Nigeria. (Culled from Health Watch Magazine)

2.7 FACTORS THAT ENCOURAGE DRUG COUNTERFEITING

Medicines are high-value items in relation to their bulk and the demand for medicines is endless. In Nigeria, some of the following factors facilitate the existence of criminal networks that promote drug counterfeiting, ighlighted (Dora, Ibid)

2.7.1 Chaotic Drug Distribution System

Drug distribution in Nigeria is very chaotic with drugs marketed like any other commodity of trade. Due to poor regulation over the years, drug markets evolved and were deeply established all over the country despite the illegality of such activities. Almost all drug manufacturers and importers supply to these drug markets. Drug sellers and even health professionals patronize the drug markets, which also service the hawkers that sell in Streets and Commercial Buses. Efforts made by NAFDAC to create an orderly Drug Distribution System (ODDS) so as to enable the agency phase out the existing disorganized drug markets, suffered a

set back due to its unacceptability by some pharmacists who are key stake-holders in drug matters. However, pharmacies around the country are forming drug distribution consortiums known as COPHARM to provide alternative distribution outlets to the markets which are the den of counterfeits.

2.7.2 INADEQUATE COOPERATION FROM GOVERNMENT AGENCIES AND AMONG PROFESSIONAL GROUPS

Lack of or inadequate cooperation between professionals especially in the healthcare delivery system fuels counterfeiting of drugs. This is so because doctors especially those in private practices readily procure drugs without inputs from pharmacists whose expertise is on drug matters. This makes it more likely for doctors to buy fake drugs. Similarly, pharmacists, nurses and non professionals, readily prescribe and dispense drugs without due consultation with the medical doctors who are experts in clinical practice.

Other factors which encourage counterfeiting include:-

- Irrational use of drugs.
- Poor data base on health related activities.
- Insecure and unfriendly environment.
- Discriminatory regulation by exporting countries.
- Sophistication in clandestine drug manufacture.
- Corruption and conflict of interest.

2.8 THE ROLE OF DOCTORS IN ELIMINATING FAKE/COUNTERFEIT MEDICINES

Doctors generally have contact with their patients at their most vulnerable time, when they are down with an ailment or disorder. Doctors therefore wield an awesome influence on the healthcare of patients. Therefore, it should go without saying that if Doctors resolve to proactively play their roles in eliminating counterfeit drugs from their practices, a major achievement in that regard will be recorded. All it requires are simple self regulatory measures that promote rational use, uphold ethical practice, enhance doctors' professional practice and work for the ultimate good of the patients(Awake,1998).

In support of this (Osibo, ibid) said In fact, doctors can do this by:-

- Discouraging their patients from indulging in irrational self medication which fuels counterfeiting.
- Endeavour to use the services of other professionals where necessary, for example, pharmacists are well positioned to source for genuine drugs and help advise doctors in other areas such as rational dispensing and drug management. Moreso, pharmacists can be held responsible for any lapses as against untrained hands.
- Ensuring that the Hospitals/Clinics source drugs from only credible sources such as the manufacturers or their accredited distributors, registered pharmacy premises.

Etc. And also, patients should be advised to do same when they are issued prescriptions meant to be filled outside the hospital.

- Insisting on proper examination of the product package for expiry date, spelling errors and other lapses by the pharmacist before purchasing the drugs.
- Ensuring that all Adverse Drug Reactions (ADDR) including lack of effect to the National pharmacovigilance Centre are reported, as it will help to detect quality defects in drugs, which is often indicative of counterfeit drugs.
- Supporting NAFDAC's crusade to eradicate fake drugs and other unwholesome regulated products and a well regulated environment.
- Studying and propagating the bimonthly publications of the differences between fake and genuine products in most Nigerian Newspapers by NAFDAC with a view to avoid the buying and using fake drugs.

2.9 THE DRUG SITUATION IN NIGERIA

In the words of Okoli (2000: Internet) there is a large market for drugs in Nigeria. Out of over 130 existing pharmaceutical manufacturers, only 60 are in active manufacturing. This is despite the installed capacity of the Industry to produce between 50% and 75% of the nation's drug needs. Capacity utilization is below 30% and about 70% of the drugs are thus imported. Confirming the above postulate by Okoli, Erhun (1996:Internet) reported that Drug

availability in the public and private healthcare delivery system in Nigeria is in a poor state. He adduced various reasons to include:-

- Inadequate funding of hospital pharmacies and the "out of stock syndrome".
- Involvement of unqualified persons in the procurement and distribution of drugs.
- Inadequate storage facilities, transportation and distribution.

The adoption of an essential drugs program through the promulgation of Decree 43 of 1989 on Essential Drugs was a step taken to ensure the availability of drugs. Ordinarily, branded drug prescribing is till quite common in many public health institutions, contrary to specifications of Essential Drug Act (Government of Nigeria, 1990). This has partially eroded the expected gains of the essential drugs program.

In 1996, a health intervention program was put in place under, the petroleum (Special) Trust Fund (PTF). A drug revolving fund (DRF) was established under the scheme that ran parallel to the existing DRF in public health Institutions. Under this Scheme, local manufacturers produced the drugs directly on a contract basis. To a large extent, this intervention increased drug availability in the public health Institutions. The scheme was however phased out in 1999 (Erhun, 2000: Internet).

In the like manner, drug distribution network in Nigeria is in a state of chaos because it consists of open markets, patent medicine stores, community pharmacies, private and public hospitals, wholesalers/importers and pharmaceutical manufacturers. It is a common scene in Nigeria to see petty traders who sell kola-nuts, cigarettes, and oranges, among other items in market kiosks, motor parks and road sides, hawking drugs that range from over-the-counter items to antibiotics (popularly called "Capsules") (Adeluyi, 2000). The medicines are usually left under the sun in such conditions that could facilitate the deterioration of the active ingredients. Patent Medicine Stores are owned by the holders of patent and proprietory medicine vendors licenses. Ordinally the patent medicines should be sold in their original packs.

Consequently, over-the-counter (OTC) drugs are the only drugs authorized to be sold by the vendors, but they generally sell all types of drugs as determined by their financial capability. Considering the knowledge base of these vendors whose minimum academic requirement to obtain a license is the First School Leaving Certificate (now regarded as Junior School Certificate Examination under the new 3-9-3-4 System of Education – Nigerian policy on Education, 2004, Obiageli Ezekwesili); they are not in a good position to differentiate between fake and genuine product (Erhun and Adeola, 1995; Internet). Community pharmacies are statutorily registered with the pharmacist council of Nigeria. A superintending pharmacist, who is also registered and

licensed, overseas the pharmacy anytime it is opened for business, with such pharmacies there should not be any serious problem of the sale of fake drugs. Unfortunately however, there are many unregistered “pharmacies” thriving. And in such premises drugs are purchased from doubtful sources with its attendant danger to the health of the public.

2.10 DRUG RELATED LAWS IN NIGERIA

2.10.1 Poisons and Pharmacy Act, Cap 366 of 1990.

This Act regulates the compounding, sale, distribution, supply and dispensing of drugs and provides different levels of control for different categories of drugs and poisons.

2.10.2 Food and Drug Act, Cap 150 of 1990.

This Act prohibits the sale of certain foods, drugs, cosmetics and devices as treatment for certain diseases. The Act prohibits the importation, exportation, distribution and sale of specified drugs. It also prohibits practices such as misleading packaging, labeling and advertising, as well as manufacturing foods and drugs in unsanitary conditions. It conveys the power to appoint inspecting officers and Food and drug analysts.

2.10.3 Counterfeit and Fake Drugs (miscellaneous provisions) Act, Cap 73 of 1990.

This Act prohibits the production, importation, manufacture, sale and distribution of any counterfeit, adulterated, banned or fake drugs. It also prohibits persons

selling any drug in an open market without permission from the proper authority.

2.10.4 Pharmacists Council of Nigeria (PCN), Decree 91 of 1992. It repealed the pharmacists Act of 1964.

This decree established the pharmacists council of Nigeria with the following responsibilities:-

- To determine the standard of knowledge and skills required of a person or persons seeking to become a registered member of the pharmacy profession.
- To establish and maintain a register of persons qualified to practice as members of the pharmacy profession.
- Prepare and review the code of conduct.
- Regulate and control the practice of the pharmacy profession. The council has an investigating panel and disciplinary committee to discipline erring pharmacists appropriately.

2.10.5 National Agency for Food and Drug Administration and Control Decree No. 15 of 1993.

This is the decree establishing the National Agency for Food and Drug Administration and Control (NAFDAC), with the following responsibilities resting on its mantle.

a. Regulate and control the importation, exportation, manufacture, advertisement, distribution, sale and use

of food, drugs, cosmetics, medicals devices, bottled water and chemicals.

b. Conduct appropriate tests and ensure compliance with standard specifications designated and approved by the council for the effective control of the quality of food, drug etc. as well as their raw materials and production, including processes in factories and other establishments.

c. Undertake appropriate investigations into production premises and raw materials for food, drugs etc. and establish relevant quality assurance systems, including certification of the production sites and regulated products.

d. Undertake inspection of food, drugs etc.

e. Compile standard specifications and regulations and guidelines for the production, importation, exportation, sale and distribution of food, drugs etc.

f. Undertake registration of food, drugs etc.

g. Establish and maintain relevant laboratory or other institutions in strategic areas of Nigeria as may be necessary for the performance of its functions. The Federal Task Force on counterfeit and fake drugs established under the provisions of the counterfeit and fake drugs (miscellaneous provisions) Act, operates within NAFDAC.

2.10.6 Drugs and Related Products' Registration Decree No. 19 of 1993.

This decree makes provisions for the prohibition of the manufacture, importation, exportation, advertisement, sale or distribution of drugs, drug products, cosmetics or medical devices unless it has been registered in accordance with the provisions of the decree. It also stipulates the procedures for applying for registration of a product or/and drug, conditions under which information supplied by an applicant is disclosed, and provisions for the suspension or cancellation of certificates of registration and clinical trials. Penalties for contravention of provisions of this decree are also stated.

The laws above show that the government has positively responded to forestall a chaotic drug distribution situation in Nigeria. But empirical data has shown that the situation is far from adequate. In disagreement with the above postulate, Fr. Romanus Muoneke (Internet, Ibid) thanked God and he said as I quote him verbatim, "thank God we are not so completely despondent, for beyond the misty horizon, one can perceive a flicker of light in the operations of National Agency for Food and Drug Administration and Control (NAFDAC) and its able Director-General, Prof. Dora Akunyili, who is now a minister for information and communication (February, 2009)".

2.11 FAKE/COUNTERFEIT DRUGS IN NIGERIA PRIOR TO 2001.

Due to unfair competition, local drug manufacturing became unattractive and many multinational companies left Nigeria as a result of frustration. Estimates of the extent of counterfeit medicines in circulation in Nigeria ranged from 48% to 80% from various studies before 2001. As Akunyili (2006:3) quoted Poole (1989) by reporting that 25% of drug samples he studied were fake, 25% genuine and 50% inconclusive. Adeoye Lambo (1990: Internet) reported that 54% of drugs in Lagos were fake and that the figure would rise to 80% the following year. Taylor et al (1987:275). reported that 48% of drugs tested were substandard. In 2001, NAFDAC's study showed that 68% of drugs in circulation were un-authorized.

Besides, here is a word puzzle for every mind from (Awake; 2004:11):- "Buying fake goods puts money in the pockets of criminals". If everyone should always remember this, I believe, genuine goods must be what we go for all the time no matter the cost. Also, in the words of an author as he enveloped out his thoughts in the same "Awake", and I quote, "I'm convinced that the main reason we have so much fraud today is because we live in an extremely unethical society. There has been a sharp slippage in ethics that has inspired a culture of fraud. We live in a society that does not teach ethics at home; nor in school because teachers would be accused of teaching morality". But is this saying attributed to Prof. Dora Akunyili whom (Muoneke Internet)

heralded so much and who is not new in Nigerian public affairs, having served as a regional officers in the defunct P.T.F., where she played a subordinate role, taking orders from her bosses, whose intentions and methods led to the demise of the program under former Nigerian President – Obasanjo.

2.12 ADVERTISING AND MARKETING OF ESSENTIAL DRUGS – THE MAJOR OBSTACLES IN NIGERIA – THE TRUE EXPOSITION

It is no time for preaching a gospel. In the spirit of rebranding Nigeria, the major problems of advertising and marketing of ethical drugs usually have to do with us, the health personnel who attend to patients, the hospital settings and the enduring bureaucracy in government institutions (Mba 2008:111).

In affirmation of the above postulate, Uzodinma (2002:Internet) held the view that most health care personnels in government establishments do not attend to patients with respect and a sense of dignity of the patients as a human person, especially, if such services are offered as "Free" or "Subsidized" or at "Cheep rate". They shout at the patients and are generally rude. At other times, available drugs are hoarded and dispensed to a selected few until their expiration periods approach, and then their availability would be announced. Also, the frequent out-of-stock syndrome in these hospitals makes the patients not to choose them as their first point of contact when looking for

care, since one is not sure. If there would be any drugs, based on previous experience.

Also, the hospital settings occasionally contribute to these problems in a very serious way. Division of labour is sometimes carried to extremes. As an example, on a typical clinic day, patients may be kept waiting without attention, simply because the person to issue cards or give injections was yet to come. But these cards and drugs are available, while other personnel who could offer them refuse to do so because it is not their duty within that period. Where as in a private setting, the same health personnel would bridge the gap and offer those services even when the person officially saddled with the responsibility was yet to arrive.

Furthermore, it is not a credit to any health facility or its staff/management when patients fill up the whole place and start roaming around because the person to attend to them is not around, even when all the materials needed to attend to them are available, and health personnels who could help out are also available, but would not help because it is not their duty-calls for the period.

2.13 CHALLENGES MITIGATING AGAINST FOOD AND DRUG REGULATION

a. **Corruption and Conflict of Interests:-** The first line of action by drug counterfeiters is to compromise regulators. When this fails, they resort to intimidation, harassment, blackmail, threats and physical attacks.

b. **Insecure and Unfriendly Environment:-** At some point, according to Akunyili (2006:4), when all the other antics of drug counterfeiters failed they resorted to physical attacks, vandalism and arson against NAFDAC Staff and facilities. This, Akunyili said, culminated in a shooting attack on her person on December 26, 2003 (Gunmen fired at her vehicle, shattering the back windscreen with bullets which pierced through her head scarf and burnt her scalp. During the shooting, a commercial bus was riddled with bullets and the driver died instantly). Between 7th and 11th March, 2004, there was a synchronized burning of NAFDAC's facilities across the country. According to Akunyili, her family members and NAFDAC Staff remained constantly under threat. In addition to depositing fetish objects in her office in August 2001, Six armed men invaded her residence in Abuja and waited for over two hours for her return. Fortunately, unknown to them, she had earlier traveled out of Town. On 29th August 2002, NAFDAC laboratory in Lagos was vandalized and most of its sensitive equipments were destroyed, while portable ones and samples for testing were carted away.

c. **Discriminatory Regulation by Exporting Countries:-** Some countries have strong regulations for drugs consumed internally and little or no regulation for drugs meant for export. Discriminatory regulation informed the decision to prohibit the importation of

products marked “FOR EXPORT ONLY”. (Any product that could not be used in the country of manufacture is officially unacceptable in Nigeria). Presently, there are 92 pharmaceutical companies producing about 30% of Nigeria’s drug needs while the rest are imported. Most of the counterfeit drugs in Nigeria are imported from India and China. From 2001 till 2006, NAFDAC has banned thirty Indian and Chinese Companies and one Pakistani Company confirmed to be counterfeit drug producers from exporting drugs into Nigeria.

d. **Sophistication in Drug Manufacture:**- Sophistication in drug production has made it difficult for brand owners to tell the difference between their brands and counterfeits.

e. **Lack of or Inadequate Legislation:-** In many countries, laws against drug counterfeiting are very weak. Consequently, criminals are shifting from smuggling of narcotics and running of weapons to counterfeiting of drugs because it is financially lucrative and of relatively low risk. The penalties for importing, producing or distributing fake and counterfeit drugs in Nigeria range from imprisonment for between three months and five years with option of fine of USD 70 – USD 3,600. In the interim, NAFDAC has strengthened its regulatory processes by instituting some administrative guidelines within the law. It also uses the press to disgrace identified drug counterfeits.

f. **False Declaration by Importers:**- Some counterfeit drug importers make false declarations about the contents of their containers and employ unimaginable concealment methods, like stacking drugs in the inner parts of containers of other items like clothings, motor spare parts or household goods, or wrapping the drugs inside clothings, NAFDAC has seized the drugs concealed inside t-shirts and baby wears severally.

g. **Chaotic Drug Distribution System:-** Drug distribution in Nigeria is very chaotic, with drugs marketed like any other commodity of trade. Drugs are sold in open markets, buses, ferries, and are hawked on the streets. Borrowing. Muoneke's idea (Ibid) there are companies in Asia and Eastern Europe that are mass-producing highly diluted drugs and are marketing them in Nigeria. For such drugs, labels are no indication of actual content. It is also true that some Nigerian merchants arrange with such companies to increase the quantity and reduce the quality to make easy profit. But I think in my own opinion, that the merchants are somehow running away from paying VAT (Value Added Tax), that is additional tax imposed on high quality imported goods. Worse still, some traders buy empty cases with labels which they later filled up with chalk powder or colored liquid concoctions in the squalor of the slums in Nigeria and are supplied to hospitals or sold in pharmacy stores all over the country. They stop at nothing, these harbingers of death. They sell polluted

and contaminated stream and tap water to the public in the guise of providing pure water. Muoneke concluded.

2.14 STRATEGIES EMPLOYED BY NAFDAC TO COMBAT DRUG COUNTERFEITING AND OTHER INTERVENTION

a. **Public Enlightenment Campaign:-** This is the most effective strategy that involves dialogue, education and persuasion. It is sustained by using print and electronic media such as jingles, alert notices, billboards, publication of the differences between identified fake and genuine products in the national dailies. NAFDAC has also produced many other publications, fliers, leaflets and posters, in English and the major Nigeria languages. Workshops, seminars and meetings have been conducted for most stakeholders and is organizing a mobilization campaigns for rural dwellers before suddenly there was some ministerial re-shufflement and Prof. Dora Akunyili was made a minister for communication and information in February 2009.

In 2002, NAFDAC Instituted an annual easy competition for Nigerian high school children for which cash prizes were given to the winners and computers and televisions were donated to their schools at state, zonal and national levels. NAFDAC also established consumer safety clubs in the schools as a platform for

interacting with and educating the students for the establishment of a culture of quality consciousness in Nigeria.

b. **Stopping the Importation of Counterfeit Medicines and Other Substandard Products at Source:-** To achieve this, NAFDAC has put in place some administrative guidelines which include that NAFDAC officials must inspect factories anywhere in the world before they register or renew registration for their drugs, cosmetics, food and other regulated products, to ensure Good Manufacturing Practice (GMP) compliance. NAFDAC has appointed analysts in India, China and Egypt who recertify drugs before exportation to Nigeria. NAFDAC requires mandatory pre-shipment information to be provided by all importers before the arrival of their drugs. On NAFDAC's insistence, Nigerian Banks insist on NAFDAC's clearance before processing financial documents for drug importers.

c. **Beefing up of Surveillance at all Ports of Entry:-** NAFDAC re-enforced the two new directorates of ports inspection and enforcement for more effective surveillance at all ports of entry, and better enforcement activities respectively. Hitherto, land and sea borders were major routes of importation. Their agents, considerably intensified surveillance at all the borders. Drug counterfeiters then resorted to using airlines. Consequently, NAFDAC issued a guideline that any aircraft that carries drugs to Nigeria without

obtaining NAFDAC's authorization from their clients would be impounded.

d. **Mopping up Counterfeit Drugs Already in Circulation:**- Cognizance of many Nigeria's porous borders, NAFDAC embarked on planned, continuous and sustained surveillance at all markets and retail outlets for drugs. This in the past, has led to the closure of two major drug markets for 3 to 6 months. To achieve high level of success with the mopping up exercise, NAFDAC put in place an administrative guideline that confiscation and subsequent destruction should be made of drugs from sellers whose owners fail to provide proper invoices of purchase, with full names and addresses. This is to enable NAFDAC trace the big time importers and distributors of fake drugs.

Faced with the frustrations of evacuating many lorry loads of fake drugs from warehouses on tip off without anybody accepting ownership, NAFDAC notified the public that whenever the importer could not be traced, the landlord of the premises used for the storage of fake drugs would be arrested, to force the landlord to reveal the fake drugs importer. On one occasion, it was only after the landlord of the warehouse was arrested that the fake drugs owners surfaced.

Besides, raids are regularly carried out on drug hawkers, and their drugs are confiscated and destroyed. NAFDAC also traces fake drug dealers

through reports from health professionals or victims and constant tip-off from the public.

NAFDAC also carries out routine sampling, checking and testing of all NAFDAC registered drugs in circulation. In 2003, Nigerian Journalists sensitized the Agency about the death of three children after open-heart surgery. NAFDAC's investigations revealed medication related problems – the muscle relaxant (suxamethonium) used was of low potency, the cardiac stimulant (adrenaline) was fake and some of the infusions were contaminated. In 2004, infusions and water for injection were sampled from all over the country and the results confirmed that some batches of infusions produced by 4 indicted companies were contaminated with micro-organisms. 147 of the 149 brands of water for injection screened were also not sterile.

e. **Monitoring GMP of Local Manufacturers:-** NAFDAC monitors local manufacturers of drugs routinely. Compliance directives are issued and enforced when lapses are observed. Prosecution is carried out as a last resort when necessary.

f. **Streamlining and Strict Enforcement of Registration Guidelines:**- NAFDAC has strengthened its registration processes with some administrative guidelines as follows:

i. All drugs must comply with laboratory standards and inspection requirements before they are registered.

ii. Renewal of registration of drugs is every five years, while herbal medicine is yearly.
iii. NAFDAC insists on fixing of NAFDAC REGISTRATION NUMBER on the labels of all products to enable the public identify authorized drugs.
iv. Drugs can be imported for only ten years, after which the importer must start local production.

OTHER INTERVENTIONS

NAFDAC established National Pharmacovigilance Centre and was admitted as 74th member of WHO Drug safety monitoring programme. It proposed the establishment of an international convention on counterfeiting of pharmaceuticals at the International Conference of Drug Regulatory Agencies (ICDRA) meeting in Hong Kong. NAFDAC is currently enforcing access to ethical drugs strictly on prescription. Previously, any drug could be purchased in Nigeria without doctor's prescription. Finally, NAFDAC also enjoys government support as the government banned the importation of drugs through land borders and designated two airports and two seaports for drug importation. Recently, government banned 17 drugs that local manufacturers have capacity for.

2.15 SOME OF THE ACHIEVEMENTS AND GAINS RECORDED BY NAFDAC

NAFDAC has sanitized the food and drug industry and created a reasonably well regulated environment which have

saved the lives of millions of Nigerians and boosted the Nigerian economy by encouraging local industries, genuine importers and foreign investors. Immense public awareness resulted in the participation of all stakeholders in the promotion of food and drug regulation in Nigeria, and awakened the international consciousness that Nigeria is no longer a dumping ground for fake drugs. The incidence of fake drugs has been reduced by about 90% from what it was in 2001 (Dora, 2007:97).

The production capacities of local pharmaceutical industries have increased tremendously, and 22 new drug manufacturing outfits were established in the last 5 years. The confidence of investors in the pharmaceutical industry has been reinforced as evidence by the continuous upward movement in the share prices of the pharmaceutical companies quoted in the Nigerian stock exchange, Ban on made-in-Nigeria drugs has been lifted by other West African Countries. Many multinational Drug Companies are coming back to Nigeria due to improved regulatory environment. Cheering reports of declining death rates in Nigeria hospitals.

From April 2001 to January 2006, NAFDAC carried out over 100 destruction exercises of counterfeit and substandard products valued at about ₦14 billion. From 2001 to July 2005, over 1000 raids were carried out on distribution outlets of fake drugs. NAFDAC had secured 45 convictions in respect of counterfeit-drugs related cases, and over 56 cases are still pending in courts as the time of this

research. Sanctions on erring manufacturers and importers are increasing steadily. 2,226 in 2002, 3,178 in 2003, 3,460 in 2004 and 4,132 in 2005. (Lifted from JENDA:- A Journal of culture and African women studies, Dora Nkem Akunyili's NAFDAC experience. 2006, issue 9).

2.16 THE NEED FOR PHARMACOVIGILANCE IN NIGERIA

The Nigeria pharmacovigilance programme is coordinated by the National pharmacovigilance centre (NPC) which is located in NAFDAC and collaborates with the uppsala monitoring centre (UMC) and other national Centres World-wide. NPC is responsible for monitoring the safety of all medicines in Nigeria. The NPC is assisted, as the case may be, by a National Advisory committee comprising of experts from various fields of health-care. NPC is responsible for providing reporting forms, collecting, evaluating and communicating the finding from ADR reports to the management of NAFDAC, who may communicate same to council for ratification. NAFDAC, uses the findings from the reports for making regulatory decisions on how to prevent or minimize the risk of ADRs in Nigeria. NAFDAC, through the NPC, may communicate their findings, recommendations and directives to appropriate organizations or individuals. These include, but are not limited to health professionals, pharmaceutical manufacturers, public health programmes within the Federal and State Ministries. Other public and private health institution, the media and the public.

2.16.1 Aims of Pharmacovigilance

1. For early detection of increases in frequency of previously unknown adverse reactions and interactions and other noxious drug induced problems.
2. Detection of increase in known adverse reactions.
3. Identification of Predisposing risk factors and possible mechanisms underlying adverse reaction.
4. Estimation of quantitative aspects of risk benefits analysis and dissemination of information needed to improve drug prescribing, use and regulation.

   All drugs undergo a significant amount of testing and evaluation before marketing to ensure their effectiveness as well as safety. Marketed drugs under trails in animals (pre-clinical testing) and humans (clinical trials) to establish their efficacy, safety, and quality.

2.16.2 Pre-marketing Evaluation of Drug

Pre-marketing evaluation involves animal studies and clinical trials in humans. Studies in two or more animal species are conducted to test whether the drugs are harmful and whether they may for instance induce cancer, damage an unborn child etc. Once scientists are sure that the drug is safe, they start studies in human beings and these studies are known as Clinical Trails (CT) (undisclosed writer, 2009: Internet).

Moreso, pre-marketing clinical trials take place in three phasesphase i, ii, iii. These trials are studies of the effects of

drugs on humans under rigorously controlled conditions. All clinical trails will assess safety of the drug in question. A brief description of each phase of clinical trial is given below:

A. Phase i: Here, a single dose studies in healthy volunteers are carried out, using low doses of the drug. Subsequently, larger doses and multiple sequences are evaluated.
B. Phase ii: Here, efficacy is the primary objective of this phase trials, but safety is also continuously monitored and evaluated.
C. Phase iii: Here, there is an evaluation of safety in groups of patients with the disease.

Each phase involves increasing number of patients and by the end of full pre-marketing clinical trails, about 5000 patients would have taken the drug. However, when the drug is marketed, millions of people will take the medicine. There is, therefore, the question of whether clinical trials involving just about 5000 people provide enough information to extrapolate the safety of a new drug to millions of people. This pre-marketing safety evaluations have two significant drawbacks:-

- Under-identification of adverse drug reactions: ADRs which occur infrequently are difficult to identify. Statistically, reactions with an incidence of less than 1% are frequently not identified.
- Over-identification of ADRs: Many adverse drug reactions that are identified in pre-clinical studies are not proven to

be related to the drug, but are nevertheless listed in the product literature as potentially causing the ADR. This provides some measures of legal protection for the pharmaceutical company but is misleading to practitioners and patients, as many of these reactions are not definitely proven.

- Post marketing surveillance (PMS):- It is not possible to have identified all of the safety-related problems that may exist with a new drug during pre-market testing and evaluation.

After drugs have been released in the market, NAFDAC, the manufacturers/importers and health care professionals are responsible for post-marketing surveillance of products. Drugs released to the market will be used not only by more people, but also by different categories of people other than those in whom the drug was tested. The marketed drug will be used by other people, those with more serious illness, those from different ethnic groups, pregnant women and also by children in whom drugs are rarely tested. The medicines may also be used under many different dose regimens (not necessarily the correct and approved dose) and they could also be deliberately misused. These circumstances inevitably lead to a potential for more adverse drug reactions. For these reasons, it is obvious that the safety of a drug requires long-term surveillance after marketing. One of the most common methods of PMS is spontaneous Reporting using approved forms. In Nigeria, the NPC issues spontaneous Reporting forms which health care

professionals should use to report any suspected adverse drug reaction. Copies of the form can be obtained directly from any health institution, NAFDAC offices nation-wide or directly from the National Pharmacovigilance Centre (NPC), NAFDAC headquarters, Abuja.

Finally, the NPC National coordinator contributed to the above postulate noting that there are various factors that may influence patient's response to adverse effects of drugs. These include:-

1. Diseases and prescribing practices.
2. Treatment Seeking Behaviours (TSB) eg. self medication.
3. Genetics, traditions of the people, diet eg. high carbohydrate, fat, diet, kola-nut consumption.
4. Drug manufacturing processes used which influence pharmaceutical, quality and composition.
5. Drug distribution and use including indications, dose, storage and availability.
6. The use of traditional and complementary drugs (eg. herbal remedies) which may pose specific toxicological problems, when used alone or in combination with other drugs.
7. Racial differences.

2.17 INTERACTIONS BETWEEN HERBAL MEDICINES AND PRESCRIBED DRUGS.

In the words of Edzard (2001:2163 and 2175), Despite the widespread use of herbal medicines, documented herb-

drug interactions are sparse. He reviewed the literature to determine the possible interactions between the seven top-selling herbal medicines (Ginkgo, St. John's Wort, ginseng, garlic, Echinacea, saw palmetto and kava) and prescribed drugs.

Conclusively, it was found that St. John's Wort, which chemical name (Hypericum perforatum) lowers blood concentrations of cyclosporin, amitriptyline, digoxin, indinavir, warfarin, phenprocoumon and theophyline. And it causes intermenstral bleeding, delirium or mild serotonin syndrome respectively, when used concomitantly with oral contraceptives, (ethinylestradiol/desogestrel); Loperamide or selective serotonin – reuptake inhibitors (sertaline, paroxetine, nefazodone). Ginkgo (Ginkgo biloba) interactions include bleeding when combined with warfarin, raised blood pressure when combined with a thiazide diuretic and coma when combined with trazodone. Ginseng (panax ginseng) lowers blood concentrations of alcohol and warfarin, and induce mania if used concomitantly with phenelzine. Garlic (Allium sativum) changes pharmacokinetic variables of paracetamol, decreases blood concentrations of warfarin and produces hypoglycaemia when taken with chlorpropamide. Kava (piper methystiucum) increases "off" periods in Parkinson patients taking levodopa and can cause a semicomatose state when given concomitantly with alprazolam. As for Echinacea (Echinacea angustifolia, E. purpurea, E. pallida) and palmetto (serenoa repens), there are no interactions yet. Interactions between herbal

medicines and synthetic drugs exist and can have serious clinical consequences. Health professional should ask their patients about the use of herbal products and consider the possibility of herb-drug interactions.

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CHAPTER THREE

THE METHODOLOGY AND DESIGN OF THE STUDY

INTRODUCTION

This chapter states the methods used in studying the problems and the various instruments with which data are being tested.

METHODS USED IN THIS RESEARCH

The methods for gathering the date for this research are personal observation and survey. The instruments the study adopts include questionnaire, G.S.M calls, phone cameras. The study recognizes and records relevant ethical drugs and herbs. The study also calls on some Doctors-Government and private ones in UNTH, Parklane and Agbani Road and Independence Layout, all in Enugu Urban State.

SCOPE OF THIS STUDY:

This study covers mainly registered or qualified pharmacists and Doctors and patent drug sellers and chemists with license to sell drugs and drug importers. Here in Enugu, Juhel is the only recognized drug manufacturer, others are authorized drug distributors. And so this study do not take cognizance of the drug manufacturers in Enugu. Drug Hawkers were also studied in this research because all these directly and/or indirectly contribute to the problems of marketing ethical drugs.

POPULATION OF THIS STUDY

Here, those who are involved in this research are drug distributors, pharmacists, chemists and drug importers. According to pharmacists council of Nigerian bulletin, 2007 listing of the qualified pharmacists and chemists in Enugu State, the total number of registered, qualified pharmacists and chemists who are sales representatives of national and multinational drug companies around the world in Enugu State, is 132 while that of patent drug sellers with license in Enugu, is 172.

THE DETERMINATION OF THE SAMPLE SIZE

For the purpose of this study, I used a normal confidence level of 95% and an error tolerance of 5%. The sample size was determined using this formular:-

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = Sample

N = Population size

e = Error tolerance

1 = Constant.

Therefore, applying the formular for the sample size for pharmacists/chemists (sales representatives of drug companies).

$$N = 132$$

$$e = 0.05$$

$$n = \frac{132}{1+132(0.05)^2}$$

$$n = \frac{132}{1.33}$$

$$n = 99.25 \text{ or } 99.$$

Pharmacists/chemists = 99

Applying the formular for the sample size for patent drug sellers with license.

$$N = 172$$

$$e = 0.05$$

$$n = \frac{172}{1+172(0.05)^2}$$

$$n = \frac{172}{1.43}$$

$$n = 120.27 \text{ or } 120$$

The sample size for patent drug sellers with license in Enugu is 120.

METHOD OF DATA COLLECTION

Generated data for this study were through primary and secondary sources. Secondary sources include UNTH and Parklane Libraries, Newspapers, Journals, Articles, Magazines and Internet which published useful data, UNEC Health research Centre etc. While the primary sources include: mails, telephone, personal interviews, and questionnaires.

METHOD OF DATA ANALYSIS

The statistical methods used for analysing the data are simple percentages table; ie. Pie charts and bar charts. And finally, normal distribution is used for testing the hypothesis.

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CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 INTRODCUTION

This chapter is aimed at presenting and analyzing the data collected. Two hundred and nineteen (219) questionnaires were distributed. One hundred and ninety-nine (199) which is approximately 91% of the sample size were completed and returned while (20) which is approximately 9% of the sample size were not returned and they were those given to some drug sales representatives of Glaxosmithkine and orange drugs Ltd.

Table 1

Questionnaires distributed (Returned and not returned)

Category	Quest. Given	% Given	Quest. Returned	% Returned	Quest. Returned	% Not Returned
Pharmacist	99	45%	99	45%	-	-
Chemists	120	55%	100	50%	-	-
Sales Representative	-	-	-	-	20	9%
Total	219	100	199	95	20	9%

Representing the questionnaires given to the pharmacists, chemist and sales representative on pie chart, it becomes:-

$$\text{Pharmacist} = \frac{99}{219} \times \frac{360}{1}$$

$$= 163^0$$

Chemist = $\frac{120}{219} \times \frac{360}{1}$

= 197^0

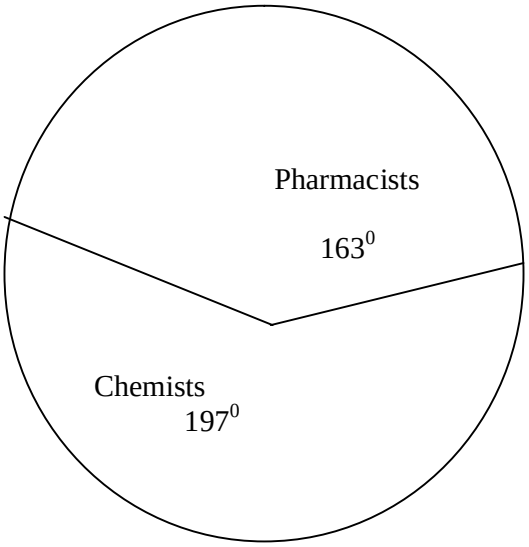

Table 2:

Question: what is your highest qualification?

Options	**Responses**	**Percentage**
B. Pharm	70	35%
B. Chem	60	30%
B. Sc	4	2%
M.B.B.S	2	1%
M.B. Pharm	30	15%
M.B Chem	33	16%
Total	199	100%

From the above table, it shows that only 2 respondents are qualified doctors. 4 respondents are non doctors but are academically qualified trained chemists with their shops located at Garriki and new Haven respectively. According to them, they got trained medically, in abroad due to the love they have for saving life. But I asked them later via telephone:- "Why did you go straight into studying pharmacology or medicine" Mr. Njeze responded. "those courses then were costly and time consuming" and besides, he is not that bright. Mr. Sunday Okoye, a patent holder at Garriki Park responded that poverty dragged him into studying U.R.P in IMSU on a part-time bases. But his uncle is a qualified doctor who has a drug dispensary shop and a registered pharmacy in Imo State. So I understand that, that is where he learnt drug sales and dispensary. Two other female internationally trained nurses affirmed that they were depotted from Australia and America respectively due to gross drug misconduct. And they are B.Sc holders, in different fields other than medicals.

Further analyzing the data, 70 respondents have a Bachelor in pharmacy and 60 have a Bachelor in field and Industrial Chemistry with a percentage ratio of 30:35 respectively.

Only 30 out of 199 respondents took a step higher to getting a master degree in pharmacy and 33 hold also a master degree in chemistry with 15% and 16% respectively.

Table 3

Question:- what type of drug do you administer most often?

S/N	Options	Responses	Percentages
1.	Prescription	153	76.8
2.	Over-the-counter	7	3.5
3.	Oral	6	3.0
4.	Both 1 and 2	13	6.5
6.	1 and 3 only	9	4.5
	Total	**199**	**100%**

From the above table, the respondents stock and administer prescription – only drugs (ethical drug), over-the-counter drug and oral drugs. Their reason being for maximum satisfaction of patients. But Daisy pharmacy opposite Edozien Bust stop has pharmacy and dispensary sections

Table 4

Who are your common patronisers?

Options	Responses	Percentage
Patient only	100	50.25%
Patent Medicine dealer	63	31.65%
Public health centres	-	-
Private health centres	36	18.09%
Total	**199**	**100%**

The above table gives the major patronizers of registered pharmacy and chemist. It shows that they enjoy high

patronage from the sick public (patients), less from the private health centres and non from the government – owned centres.

Table 5

What are your sources of prescription drugs to patent medicine dealers?

Options	Responses	Percentage
Local Industries/Marketers	54	27.1
Big pharmacentical stores	33	16.58
Sales Representative of large	85	42.71
Pharmacentical Companies open drug markets	27	13.56
Total	**199**	**100%**

Table 5 shows the results of surveys of the sources of prescription drugs distributed by registered pharmacists and chemists in Enugu Urban. From this table, it is clear that sales representatives of large pharmaceutical companies (both national and multinational) are the major sources used; followed by local drug industries and/or marketers whom I identified as orange drug Ltd, Pfizer, Emzor and Juhel. Only 33 respondents agreed getting theirs from big pharmaceutical stores mainly located in Lagos, Ibadan, Port-Harcourt, Jos and Abuja. When I pressed further to know the names of those big pharmaceutical stores through G.S.M

and E-mail, all effort proved abortive and my credibility and confidentiality somehow doubted. It was also observed that the two major open drug markets at Onitsha and Abia were lately sanitized by NAFDAC in mid April this year; thereby paving the way for a genuine drug operations and sales. Some 10 of the 27 respondents affirmed with reasons that drugs from open drug market are usually cheaper and easy to get. This pushed me into enquiring further the quality of the drugs from open markets, their country of origin and chemical compositions. Mr. Godwin Nzeakor, a patent dealer dismissed me with this statement, "the patients have the answer to this your question, Ifeanyi, have a very good day".

Table 6

Question:- Do you also market cosmetics? If yes!, Why?

Options	**Responses**	**Percentage**
Yes, because the two should go together	17	8.5
Yes, because other pharmacists and chemist do it	21	10.5
No, because I am a registered qualified pharmacist/chemists	69	34.6
No, because it is highly unethical	70	35.1
Yes, because both have the same chemistry composition	22	11.0
Total	**199**	**100%**

In table 6 above, 70 of my respondents don't stock cosmetics with drugs, they said that it is highly unethical and should not be allowed in medical practice. One of the pharmacy – a very big one "Emzy Pharmaceuticals at Independence Layout Enugu", has a very big section, or rather, it is better called a department, for cosmetics while there are 2 departments for drugs of prescription – only and general dispensary categories. The mall is well ventilated and very neat too. It is of an international standard. It is believed that most of its patronizers are expatriates. Two others are Daisy Pharmacy at Zik's Avenue, opposite Edozien Bus Stop and St. Jude Pharmacy opposite Union Boys Secondary School Agbani Road Enugu. 69 other group of respondents maintained that they are only paying respect to their profession because their products are human beings that are still alive. That as a qualified chemist or pharmacist, they need not stock cosmetics with drugs that are highly essential.

However, all the patent medicine dealers claimed that they were aware that certain drugs should be sold only on prescription. Consequently, only 11% believed that the law is being obeyed. It was observed that 30% of the patent medicine dealers involved in the study, stored food products and cosmetics together with drugs. Quality control was completely absent in some of the stores studied.

The sale of drugs in patent medicine store was done largely by sales boys and girls. 30% of the store studied used them. of this number, 21.3% were below 21 years. As already contained in chapter 2, according to the law

governing the sale of non-prescription drugs, people below this age are not permitted to sell drugs.

Table 7

Question:- How can you rate the Drug manufacturing and marketing Decree of 1990 and Acts of 1997?

Options	Responses	Percentage
Outdated, needs to be amended/reformed	44	22.1
Myopic, doesn't cover necessary areas	23	11.5
Unspecific with limited restrictions		4.5
Fair, but not enforceable	58	29.1
Very weak	65	32.6
Total	**199**	**100**

The establishment of Drug Manufacturing and Marketing Decree and Act was seen as a welcome development in the fight against Fake Drugs. However, 32.6% of the respondents regarded the coordination, monitoring and control by the task force as being very weak, while 29.1% of them regarded it as being fair but rarely enforceable. Who is to be held responsible – the task force. It is common knowledge that the law enforcement agents including drug law enforcement officials are paid off to look the other side while the business of counterfeit and Fake drugs Flourishes.

Furthermore, some 22.1% of the respondents agreed that the Decree and Acts were outdated and need to be amended if not reformed. They further explained in a G.S. conversation that what used to be in the reign of the Military ought to have become archaic and needs to be changed. Only 11.5% of the respondents maintained that the Decree and Acts were argued further that the task force should not be under one agency (NAFDAC), as experience has not shown this to be effective. They literated that the task force should be centrally coordinated or controlled so that various agencies that require their services can easily have access to them and make them accountable after an assignment.

Table 8

Question:- Do you encourage self medication by the educated patients?

Options	**Responses**	**Percentage**
Yes	3	1.5
No	87	43.7
Not all	109	54.7
Total	**199**	**100%**

In table 8 above, 98.4% of the total respondents don't ever encourage self medication because it may lead to unintentional suicide. Be you a PH.d or a professor, diagnosis is advised before prescription and drug

administration. If everyone should do just this, what then is the duty of Chemist, Pharmacist and doctors.

Table 9

Question:- What in your own view can you say about the implementation of the law governing the sale of prescription drugs?

Options	Responses	Percentage
Lacking	-	-
Ineffective	-	-
Hardly implemented	-	-
Very implemented	-	-
All of the above	199	100
Total	**199**	**100**

From the above table, the implementation of the law governing the sale of prescription drug was not only lacking but hardly implemented and ineffective. It comprised of very weak task force. 95.5% of the respondents who are patent medicine dealers (Chemists) claimed that their premises had not been visited by pharmaceutical inspectors for over five to seven years.

TEST OF HYPOTHESIS:

To determine the value of critical Chi-square:-

Critical Chi-square = X^2d. f, α

Where d.f = degree of freedom = (R-1) (C-1)

α = level of significance of 5% = 0.05

To determine the value of calculated Chi-square:-

$$X^2o = \frac{(Fo-Fe)^2}{Fe}$$

Where Σ = Summation

Fo = Observed Frequency.

Fe = Expected Frequency.

DECISION RULE

The null hypothesis (H_0) is accepted if the critical value of the chi-square is less than the calculated value of the chi-square while the alternative hypothesis (H_1) is rejected.

On the other hand, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted if the critical value of the chi-square is greater than the calculated value of the chi-square.

Therefore, accept H_0 and the reject H_1 if critical $X^2 \leq$ calculated X^2_0 but reject H_0 and accept H_1 if critical $X^2 \geq$ calculated X^2_0

HYPOTHESIS 1

H_0 = Distribution of counterfeits drugs makes marketing of ethical drugs impossible.

H_1 = Distribution of counterfeit drugs does not make marketing of ethical drugs impossible.

Table 10

Question:- What, in your own opinion is the reason for the preponderance of counterfeit drugs in Nigeria?

Options	No of Responses	Percentage
Ineffective Enforcement of Existing laws	-	-
Non professional in Drug business	-	-
Loose control system	-	-
High cost of drugs	-	-
Creed, Ignorance and corruption	-	-
All of the above	199	100
Total	**199**	**100**

X^2d.F, & (11.07) $\leq$ X^2_0 (61.31)

Critical chi-square (11.07) is less than calculated chi-square (61.31). Since critical chi-square is less than the calculated chi-square, the researcher accepts the null hypothesis (H_0) that says "Distribution of Counterfeit Drugs makes marketing of ethical drugs impossible". If the reasons of the respondents in the table 10 will be looked into by Nigerian Government, sale of ethical drugs in Nigeria will be possible (for workings/calculations on this, see appendix 1 at the back of this project).

HYPOTHESIS 2

H_0 = Ethical Drugs are best marketed in Nigeria.

H_1 = Ethical Drugs are not best marketed in Nigeria.

Table 3

Question:- What type of Drug do you administer most often?

Options	**No of Responses**	**Percentage**
Ethical	153	76.8
Over-the-counter Drugs	7	3.5
Oral	6	3.0
Both 1 and 2	13	6.5
All of the above	11	5.5
1 only	9	4.5
Total	**199**	**100**

X^2 d.f.α (11.07) $\leq$ X^2_0 (834.0)

Critical chi-square (11.07) is less than the calculated chi-square (834.0). Since the critical chi-square is less than the calculated chi-square, therefore, the researcher accepts the null hypothesis, which says “Ethical Drugs are best marketed in Nigeria”.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

In line with the objectives of this research, the researcher has studied the problems of marketing ethical drugs in Nigeria, a study of Enugu State. The purpose of this, therefore, is to determine the extent of the problems militating against marketing ethical drugs, ascertain the number of registered, certified drug marketers, and other reasons highlighted in chapter one.

This study has shown that many patent medicine sellers practice illegal activities and hence are inimical to good health care delivery in Nigeria. Their continued existence without adequate control will lead to further problems in the sale and utilization of drugs envisaged under the essential drugs programme.

Based on the analysis of data, the following findings were made:-

1. There are companies in Asia and Eastern Europe that are mass-producing highly diluted drugs and are marketing them in Nigeria.
2. 98.2% patent medicine dealers could not differentiate between the terms “Cool”, “Cold” and “Room” temperature.
3. 92.5% of Quacks are involved in drug distribution and marketing in Nigeria.

4. 87.5% of patients and doctors are ignorant and lazy to examine drug packages for expiry dates, spelling errors and other lapses before purchasing them.
5. Drug availability in the public and private health care delivery system in Nigeria is in a very poor state.
6. Government owned Pharmacies suffer inadequate funding and "out of stock syndrome".
7. There are corruption and conflict of interest among drug counterfeiters, drug regulators and drug marketers.
8. There is 70% wide spread use of herbal medicines and synthetic drugs which can have serious clinical consequences.
9. 96% of patent medicine dealers stock drugs with food and cosmetics improperly.

5.2 CONCLUSION

This study has shown that many patent medicine sellers practice illegal activities and hence are inimical to good health care delivery. Their continued existence without adequate control will lead to further problems.

In essence, this study is the researcher's contribution towards bringing into focus the underlying pressing problems that affect the marketing of ethical drugs in Nigeria, as well as finding ways of tackling these problems that hinder the realization of business and health objectives.

The researcher wishes to restate here that this work lays no claim to exhaustiveness. Rather, it has been conducted with the bounds of inevitable materials and human limitations. However, the validity of its results is in no way affected. It is now left for those concerned to use this work to supplement those of past researchers in this area.

5.3 RECOMMENDATIONS

Based on the research findings outlined above, the following recommendations are advanced:-

1. Those selling patent medicines should not be allowed to stock food and cosmetics products.
2. Pharmaceutical inspectors should wake-up, to better implement the drug regulatory laws.
3. Pharmaceutical Inspectors should be well remunerated so that they will not be distracted from their regulatory roles.
4. Drug regulators and task force should be centrally coordinated or controlled so that various agencies that require their services can easily have access to them and make them accountable after an assignment.
5. Federal Government should restructure the Task Forces to report directly to the Pharmacists Council of Nigeria (PCN) which is a body that registers where drugs are sold and manufactured.
6. The manufacturing and drug marketing Decree of 1990 and Act of 1997 should be modified to ensure that task force receive adequate funding for their operations.

7. There is urgent need for government to implement the provisions of existing drug laws.
8. The government should adequately equip and fund the central laboratories in Abuja, Lagos and Port-Harcourt, to analyse medicines suspected to fake. The laboratories should also have training facilities for laboratory technicians in drug analysis.
9. A more spirited effort needs to be made by NAFDAC to ensure the registration of all drug products either locally manufactured or Imported.
10. The National Pharmacovigilance Centre (NPC) in NAFDA, should make the spontaneous Report Form available at all times. (ii) Healthcare Professionals should ask their patients about the use of herbal products. And consider the possibility of herbal products and consider the possibility of herb-drug interactions.

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Department of Marketing,
Faculty of Business
Administration
University of Nigeria,
Enugu Campus.

Dear Sir/Madam,

COMPLETION OF QUESTIONNAIRE

I request that you help me complete the attached questionnaire.

I am a postgraduate student of marketing in the above university. As part of the requirement for my Degree Programme, I have been requested to undertake a study of "the problems of marketing ethical drugs", and to come up with the recommendations on how best to achieve proper marketing of ethical drugs.

However, it should stated that this study is purely an academic exercise. All information received will be treated with utmost confidentiality.

Yours faithfully,

Obiora Ifeanyi Elias
(Researcher)

UNIVERSITY OF NIGERIA ENUGU CAMPUS (UNEC)

Pharmacists/Chemists/Drug Sales Representatives' Questionnaires.

Dear Sir/Madam,

I am a Postgraduate Student of Department of Marketing, Faculty of Business Administration, in the above University. I am currently carrying out a compulsory Research Project on "The problems of Marketing Ethical Drugs in Nigeria, a study of Enugu State" in partial fulfillment of the requirements for the award of Master of Business Administration (M.B.A.) in Marketing.

Any information supplied by you will be treated with utmost confidentiality.

Please tick (√) in the box that best answers the questions. Otherwise, fill in the spaces provided.

1. What is the name of your Chemist shop/pharmacy: _____

2. What is the address: _____

   _____

3. Are you a registered chemist/pharmacy? Yes ☐ No ☐

4. Can you fill in your patent License number: _____

5. What is your highest qualification?

   a. B. Phanm ☐

   b. B. Chem ☐

   c. B. Sc. ☐

   d. M. BB.s ☐

   e. M.B. Pharm ☐

   f. M.B. Chem ☐ Others Specify _____

6. What type of drugs do you administer most often?

   a. Ehtical drugs ☐

   b. Over-the-counter drugs ☐

   c. Oral/suspension ☐

   d. Both 1 and 2 only ☐

   e. All of the above ☐

7. Who are your common patronizers?

   a. Patients only ☐

   b. Patent Medicine dealer ☐

   c. Public Health Centres ☐

   d. Private Health Centre ☐

8. What are your sources of prescription drugs to patent medicine dealers?

   a. Local Industries/Marketers ☐

b. Big Pharmaceutical Stores ☐

c. Pharmaceutical Companies ☐

d. Open drug markets ☐

e. Others Specify ☐

9. Do you also stock/sell/market cosmetics?

Yes ☐ No ☐

10. If "Yes" in the above question, why?

a. Because the two should go together ☐

b. Because others do it ☐

c. Because both have the same chemistry composition ☐

d. No, because I am a registered qualified pharmacist/chemist. ☐

e. No, because it is highly unethical ☐

11. How can you rate the Drug Manufacturing and Marketing Decree of 1990 and Act of 1997?

a. Outdated, needs to be amended ☐

b. Myopic, don't cover necessary areas ☐

c. Unspecific with limited restrictions ☐

d. Fair, but not enforceable ☐

e. Very weak ☐

12. Do you encourage self medication by educated patients?

    a. Yes ☐
    b. No ☐
    c. Not all ☐

13. What in your own view can you say about the implementation of the laws governing the sale of prescription drugs?

    a. Lacking ☐
    b. Ineffective ☐
    c. Hardly implemented ☐
    d. Very weak task force ☐
    e. All of the above ☐

14. What, in your own opinion is the reason for the preponderance of counterfeit drugs in Nigeria? ☐

    a. Ineffective enforcement of existing laws ☐
    b. Non professional in drugs business ☐
    c. Loose control system ☐
    d. High cost of drugs ☐
    e. Greed, Ignorance and corruption ☐
    f. All of the above ☐

APPENDIX 1

List of ethical drugs poorly marketed in Nigeria

1. Trovan
2. Antifolates
3. Tetroxoprim
4. Sulfamethoxazole
5. Sulfalere
6. Trimethoprim
7. Cinoxacin
8. Flumequine
9. Nalidixic Acid Tab.
10. Nadifloxacin
11. Pazufloxacin
12. Temafloxacin
13. Danofloxacin
14. Danofloxacin
15. Dactrim
16. Rocephin
17. Hivid
18. Invirase
19. Virazid

20. Robaquine
21. Roferon – A
22. Fansidar
23. Fansidar Combi
24. Fansimef
25. DART
26. Arenax
27. Farenax
28. Lexotan
29. Valium
30. Rohypnol
31. Swidon
32. Naxen
33. Tarivid
34. Amplicillin Capsules
35. Vitamin – B Capsules
36. Maloxine
37. Ciproxine
38. Ciprosyn
39. Pyremol
40. Tetracycline

41. Indomethacin
42. Gentamicin injection
43. Metronidazole
44. Chloroquine
45. Chloridiazepoxide
46. Demovate Cream
47. Erythromycin Tabs
48. Propanoloc
49. Indomethacin
50. Chlorpheniramine