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PHARMACEUTICAL CARE AND COMMUNITY PHARMACY PRACTICE IN NIGERIA; GRAPPLING WITH THE FRONTIER

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ABSTRACT

Public health services have evolved from the era of disease control characterized by sanitary reforms, water supply and control of physical environment from 1880- 1920; to health promotion from 1920- 1960, when attention was geared towards maternal and child health, school health services, personal health, rehabilitative health, mental health and industrial health services. This led to the era of social engineering from 1960- 1980 when it became obvious that public health alone could not tackle chronic diseases. It gave way to consideration of risk factors as determinants of chronic diseases. Health for all era evolved from 1981- 2000 and initiated the popular Millennium Development Goals (MDG) which continued from 2000 to 2015. The MDG era was characterized by serious grass root mobilizations in Nigeria powered by the primary health care (PHC) system, and has culminated into the Sustainable Development Goals (SDG), which commenced in the year 2015. Pharmaceutical care and community pharmacy practice in Nigeria have not evolved rapidly enough in line with the public health trends. This article described the extent of pharmaceutical care activities in community pharmacies in Nigeria to generate information for improved practice. Many non-professionals are involved in community pharmacy practice. Pharmaceutical care is still at teething stage and largely untapped in Nigeria. Community pharmacies have great potentials in rendering public health services through ethical practices, policy reengineering, and enforcement of practice standards. The enormous potentials of pharmaceutical care and community pharmacy practice can boost public health services and improve health outcomes at the grassroots.

KEYWORDS: Pharmaceutical care, community pharmacy, public health, grassroots, Sustainable Development Goals, Nigeria.

INTRODUCTION

Delineation of professional boundaries of practice in Nigeria is largely theoretical among the health care professionals. The uniqueness of the pharmacy profession is that the pharmacist is the most easily accessible of the health professionals.[1] Patients access health services in pharmacy shops without paying consultation fees. They access counseling, consultations, and varying levels of care without payment of consultation fees and only part with their resources when there is a product or medicine purchased, not largely due to the services rendered. An average Nigerian reasoning is that going to hospital or clinic involves having enough money in your pocket to pay for card and consultation fee as well as enough time to spend awaiting turns at the consulting section. On the other hand, access to pharmacies is much easier, faster, and cost little or nothing. This could be associated with the high level of trust pharmacists enjoy at the community level and beyond.[2] However, Pharmaceutical care, the innovative approach to contemporary pharmacy practice, is still at developmental stage in Nigeria.[3] A community pharmacy is a health care facility that specializes in providing pharmaceutical services to the community or people at the grass root. They were called drug stores but recent synonym used is retail pharmacy, since it involves buying drugs from wholesalers and dispensing to the public. Community pharmacies dispense medicines and are supposed to be manned by a registered pharmacist as stipulated by the law. Community pharmacies includes all those establishments that are privately owned and whose function in varying degrees is to serve the societies for drug products and various pharmaceutical services related needs. It is a unique hybrid of professionalism, business, and health care. In addition to dispensing pharmaceuticals, pharmacist answer questions on prescriptions and over-the-counter drugs, and give advice on home care supplies and medical equipment. In most countries, regulations govern how dispensaries may operate, with specific requirements for storage conditions, equipment, and record keeping. Community pharmacy include a great variety of pharmacy services ranging from corporately owned chain pharmacy shops to pharmacy departments in supermarkets or

independently owned pharmaceutical shops that provide prescription services plus lines of health related products.

Helper and Strand defined pharmaceutical care as the responsible provision of drug therapy for achieving definite outcomes that improve patients quality of life.[5] The International Pharmaceutical Federation, (FIP) in 1998 adopted this definition but with the following amendment: to improve and maintain a patients quality of life.[6] Pharmaceutical care (PC) reflects a systemic approach aimed at ensuring that patients get the right medications at the right time and for the right reasons.[7] This underscores the concept of rational drug use. Cipolle described it as, a practice in which the practitioner takes responsibility for patients drug-related needs and is held accountable for this commitment.[8] This later definition brings to the fore the philosophy of practice, patient care process, and practice management system. The ultimate goal is to achieve pre-defined medication related outcomes and hence improve the individuals health related quality of life. These outcomes include cure of patients diseases, elimination, or reduction of a patients symptoms, arresting or slowing a disease process or preventing a disease or symptoms.[5] To achieve these, it requires that the pharmacist does not work in isolation but in collaboration with other health professionals towards achieving the defined end-point. It is a quality assurance system involving teamwork and improved systems for provision of drug therapy. It requires a variety of services and functions new to pharmacy. Pharmaceutical care provides benefits for the patient, and the pharmacist is directly responsible for that care regardless of practice setting. Pharmaceutical care indicates that pharmacists should take care of patients drug related needs more than the way any other health professional should.

Pharmaceutical care evolved from clinical pharmacy. It was introduced into the under-graduate and postgraduate curricula of university programs at the dawn of the twenty first century. However, among the pharmacists in Nigeria, pharmaceutical care is discussed in mandatory continuing professional education programs and in conferences. It is a model in the health care system. Unfortunately, the standard of pharmacy practice in Nigeria is not the same as it is in most developed countries where the practice of PC has been on for over three decades now. One of the interesting things about health care in Nigeria is that patients visiting the hospitals have to pay for their own food, bed space, consumables like- cotton wool, plaster, syringes, medical supplies, drugs and other products needed for their proper care and management. Only patients on health insurance scheme have their bills subsidized. In most cases, patients or their families do not have money to pay for drugs and other necessities due to their poor socioeconomic status. Limited consulting time, lack of private counseling area at the community pharmacies, perception that patients are not willing to pay for specialized care, and unfriendly inter-professional dispositions, have limit the growth of pharmaceutical care practice in Nigeria especially at the community pharmacy level.[10, 11, 12, 13, 70] These factors have not only compromised the early implementation of pharmaceutical care in hospitals and community pharmacies in Nigeria, but have had negative impact on clinical pharmacy practice in the health care delivery system in Nigeria. The advantages of pharmaceutical care abound irrespective of practice setting. However, the specific content of practice standards may vary from one setting to another.[5] Lack of enforcement of standards for pharmacists in their daily practice has been identified as a limitation to widespread implementation of pharmaceutical care. A Delphi panel of pharmaceutical care experts suggested 52 practice standards upon which a consensus was arrived in the United States. This opened the lead way for identification of standards that could improve pharmacy practice in Nigeria. Pharmacists should universally deliver pharmaceutical care. They should adopt practice standards that provide meaning to the term and enable uniformity of practice despite the country of practice.[14] This article described the extent of pharmaceutical care activities in community pharmacies in Nigeria to generate information for improved practice.

Pharmaceutical care functions and community pharmacy practice

The basic pharmaceutical care functions include development and use a patient medication profile, obtaining medication history by interviewing and documentation, patient counseling, monitoring drug therapy for safety, efficacy, and desired clinical outcome, detection and reporting of drug allergies and adverse drug interactions. Other functions include participation in public health activities, identification, and resolution of drug therapy problems, interpretation of patients drug related needs, patients education, questioning, clarification, verification, validation of all drug-related orders, medication therapy management, medication reconciliation, etc.[15] Others include development and use of patients medication profile, obtaining medication histories by interview and documentation. However, very few community pharmacy premises in Nigeria carry out these functions. A few chain pharmacies carry out medication profiling. A medication profile is a complete and comprehensive summary of consumers current medications. The profile includes key details about the consumer, the issuing pharmacy, and details of each medication such as active ingredients, brand names, strength, dosage forms, dosage, and directions for use. This is in addition to other supplementary information e.g. route of administration, indications, and special directions or counseling.[16] Medication profile service is just one activity amongst a suite of integrally linked professional activities and services rendered by pharmacists. A document was provided as a guide on the provision of a medication profiling service for consumers in community pharmacy settings within a framework underpinned by the principles of Quality Use of

Medicines (QUM) in Australia. In the United States of America, pharmacists working in community pharmacies spend approximately one quarter of their patient care or consulting time in documentation services. Pharmacists agreed that documenting patient care services add value to their practice sites, demonstrating that pharmacists recognize the value of documenting patient care services.[17] However, most community pharmacists do not document their operations professionally in the Nigerian setting. Data in most community pharmacies are kept manually while a few premises use computers and soft ware packages. Paper or manual documentation is obsolete in developed countries today but still very common in Nigeria. Manual documentation requires documenting patient care services, retrieving patients data and tracking patients progress. Data reports are neither easily generated nor easily retrieved. Moreover, paper documentation systems do not provide a compact method for storing patients data. Commercial computerized documentation systems provide solution to most of these challenges. A major barrier to documentation and medication profiling is that a perfect documentation system may not be available. The documentation systems in use do not appear to meet all of the needs of the pharmacists. A study by Ismail *et al.*, and Ogbonna *et al.,* indicated that in spite of seeming interest and frantic efforts for pharmaceutical care implementation, the critical elements of the concept such as documentation was lacking.[18, 55] The human and economic consequences of inappropriate medication use have been the subject of professional, public, and congressional discourse for more than two decades.[19,20,21,22] Lack of adequate knowledge about their health problems and medications is a major cause of patients non-adherence to their pharmacotherapeutic regimens. The pharmacy profession has accepted the responsibility for providing patient education and counseling in the context of pharmaceutical care to improve patients adherence and reduce medication-related problems.[23] The content of an education and counseling session may include the information listed below, as appropriate for each patients pharmacotherapeutic regimen and monitoring plan.[24, 25,26]

The decision to discuss specific pharmacotherapeutic information with an individual patient must be based on the pharmacists professional judgment. Other key areas of interaction with patients include medications trade name, generic name, common synonym, or descriptive names and when appropriate, its therapeutic class and efficacy, medications use and expected benefits and actions. This may include whether the medication is intended to cure a disease, eliminate or reduce symptoms, arrest or slow the disease process, or prevent the disease or a symptom, medications expected onset of action and what to do if the action does not occur, and route of administration, dosage form, dosage, administration schedule and duration of therapy. Others include directions for preparation, use, and/or administration of medications, which may include adaptation to fit patients lifestyles or work environments, precaution to be taken in case of a missed dose, and precautions to be observed during the medications use or administration and the medications potential risks in relation to benefits. Latex allergy is discussed for patients taking injectable medications and administration devices. Potential common and severe adverse effects that may occur, actions to prevent or minimize their occurrence, and actions to be taken if they occur, including notifying the prescribers, pharmacists, or other health care provider and techniques for self-monitoring of pharmacotherapy. Pharmacists other activities include resolution of potential and actual drug–drug interactions, drug–food, and drug–disease interactions which may be pharmacokinetic or pharmacodynamic interactions. Others include resolution of contraindications, medications relationships to radiologic and laboratory procedures e.g., timing of doses and potential interferences with interpretation of results, prescriptions refill authorizations and the process for obtaining refills, proper storage of the medication, proper disposal of contaminated or discontinued medications, used administration devices and any other information unique to an individual patients or medications. These points are applicable to both prescription and nonprescription medications. Pharmacists counsel patients and clinicians on the proper selection of nonprescription and ethical medications. Additional content may be appropriate when pharmacists have authorized responsibilities in collaborative disease management for specified categories of patients. Depending on the patients disease management or clinical care plan, the following may be covered considered: patients disease state; whether it is acute or chronic and its prevention, transmission, progression, and recurrence, expected effects of the disease on the patients normal daily life, recognition and monitoring of disease complications. In community pharmacies, most of these services are still at the teething stage and are not carried out comprehensively but skeletally based on the pharmacists discretion. A study carried out to determine the extent of patients counseling in community pharmacies revealed that 25% of pharmacists never talked with their patients while 47% of all patients never received any oral drug information from pharmacy staff. This finding suggests that a considerable number of patients do not receive oral information or reinforcement despite receiving new prescriptions. It raised several concerns about the content and style of counseling provided when prescriptions are issued. On the average, pharmacy staff mentioned only 2.3 items per drug. Majority of patients received no oral advice or reinforcement about how long to take their medications, how to manage adverse effects or information on when the medications would begin to work. While these items may be addressed in patients information leaflets, not all patients are encouraged to read it, and not all medications dispensed are accompanied by medication leaflets. Both written information and oral counseling are important to provide

the necessary education in achieving the desired outcomes. Written information without counseling often fail to achieve desired results because of variations in the quality of written information and patients' diverse needs and abilities. Pharmacists who provide instructions that are more explicit and monitoring can improve outcomes in this area.[27] Pharmacists need to have the knowledge and skills to provide effective and accurate patient education and counseling with sound communication skills.

Monitoring drug therapy for safety, efficacy, and desired clinical outcome

Monitoring therapeutic interventions in the context of management of a chronic disease is defined as repeated testing aimed at guiding and adjusting the management of a chronic or recurrent condition.[28] A major part of this activity is the monitoring of drug therapy, defined as the measurement of pharmacokinetic, pharmacodynamic, or clinical outcome variables, which, with appropriate interpretations, will directly influence the prescription of a medicine and management of the patient. For this to be the case, monitored variable must either be the relevant clinical outcome itself or, more often, must represent a valid surrogate that can be used to predict treatment success, failure or toxicity. The circulating drug concentration is the classical pharmacokinetic (PK) surrogate traditionally called therapeutic drug monitoring (TDM), while various response biomarkers are used as pharmacodynamic (PD) surrogates. The interpretation of such measurements thus requires prior knowledge of the pharmacokinetic– pharmacodynamics (PK–PD) relationships that characterize the drugs and of their predictive values regarding clinically relevant outcomes. In community pharmacy, pharmacodynamic responses are used to monitor drug efficacy and safety. Among pharmacodynamic biomarkers, glycaemia and glycosuria were already by 1925 competing in monitoring insulin therapy.[29] Most patients with chronic diseases who stay very far from hospitals and go back to clinics at will for follow up instead of being refereed to community pharmacies closer to their neighborhood for closer follow up and monitoring. Such services are not common in the Nigerian setting where one-way referral is predominantly the case. Patients with chronic diseases are usually detected primarily at community pharmacies from where they are referred to the hospitals for specialist care and follow up. The two-way referral system, which is a standard process, is hardly seen in the Nigerian setting. Occasionally, some community pharmacists have patients with chronic conditions, which they manage and follow up in collaboration with the physician.

Detection and reporting of drug allergies and adverse drug interactions

While adverse events reporting guidelines are frequently in place at both institutional and community pharmacy level, pharmacists are currently not mandated by the federal law or regulation to submit reports of adverse drug events (ADEs) due to the challenges of enforcing such a mandate. [30] Many ADEs are predominantly reported before now because they are not recognized as safety concerns, perhaps because the health care practitioners (HCP) are unfamiliar with the reporting process and its importance. Moreover, incomplete fields or inaccuracies in the submitted data may limit the utility of the data. Under reporting of adverse drug reactions (ADRs) by healthcare personnel is a common problem of many. In recent times, there has been renewed interest in pharmacvigilance due to public enlightenment and advocacy by the National Agency for Food, Drug Administration, and Control (NAFDAC). There have been increased reporting by hospitals and community pharmacies. The use of NAFDAC yellow form is now very common as a way of safeguarding the lives of the public.

Level of pharmacists involvement in community pharmacies pharmaceutical care

Lack of involvement of pharmacists is one of the barriers to effective implementation of pharmaceutical care services in community pharmacies. In a study carried out to determine the feasibility of a community pharmacy-based parental adverse drug reaction (ADR) reporting system for children in the United Kingdom using questionnaire issued to parents or guardians in community pharmacies was conducted. The result showed that pharmacists carry out varying levels of research in their premises.[31] This was consistent with another study carried out in Lagos to determine the feasibility of parental reporting of suspected adverse drug reactions (ADRs) to community pharmacies in Nigeria.[32] Some of the studies are invaluable in systematic reviews and meta-analysis. Most community pharmacists do not embark on research studies in their premises.

Public Health activities in community pharmacies in Nigeria

Community pharmacies in Nigeria now engage in varying levels of public health activities. Examples include health education, health screening, family planning, pregnancy, and infant care, immunization, prevention of smoking and/or smoking cessation services, weight gain control, health education, and disease prevention services. To be relevant in the 21st century, community pharmacists must introduce a wide range of additional services relevant to health promotion, diagnosis, and screening in primary healthcare. However, measurement and interpretation of results must be carried out with care to avoid errors that may cause unnecessary worries in patients. Screening services like blood pressure measurement, determination of body mass index, blood sugars, and pregnancy tests are very common services in community pharmacies in Nigeria today. Clearly, adequate pharmaceutical service provided by pharmacists is a vital component of primary health care. World Health Organization (WHO) and several publications that reported pharmacist involvement in health care delivery recognized these services.[33,34,35]

A study conducted in four states in Nigeria to assess the baseline status of community pharmacists involvement in Maternal, Newborn and Child Health [MNCH] services as part of public health activities, described training intervention for community pharmacists on MNCH and assess its impact on maternal and child health, revealed their involvement at varying levels of maternal and child health services. Community pharmacists engage in other maternal and child health services like counseling on child nutrition, breastfeeding, adoption of preventive life styles eg use of insecticide treated nets, family planning, management of self limiting conditions, etc The result shows that over 15% of community pharmacists reported seeing 5-10% of women and 10-20% of children daily. The baseline status of the community pharmacists participation in MNCH revealed a considerable client load of pregnant and nursing mothers with under 5 years children in contact with community pharmacists daily. Community pharmacists in MNCH interventions indicated a knowledge gap. The training intervention showed knowledge transfer from community pharmacists to mothers, which influenced their children. It showed improved community pharmacists position as promoters, facilitators, and implementers of maternal, newborn and child health services in Nigeria.[36]

In a study carried out to explore the attitudes of Nigerian community pharmacists towards health promotion and determine the importance pharmacists attach to health promotion behaviors and their perceived involvement in promoting them among their clients, respondents predominantly indicated favorable attitude towards health promotion. Majority of the respondents (pharmacists) were interested in health promotion services, and indicated willingness to devote extra time to counsel patients. There was an indication that Nigerian community pharmacists in this survey perceived an extended role in health promotion, especially medication-related activities. It is consistent with the philosophy of primary health care and pharmaceutical care.[28] Lack of health promotion policy for pharmacists was a potential barrier. Pharmacists studied attached great importance to 12 of the 23 widely advocated health promotion behaviors, and felt they should be involved in seven of them. Medication-related counseling, use of condoms, and maintenance of blood pressure were top priorities. This agrees with a systematic review of pharmacists and consumer, which suggests that in order to improve the public health services provided in community pharmacies, training must aim to increase pharmacists' confidence in providing these services.[29] Well-trained and confident pharmacists should be able to offer public health service more proactively, which is likely to have a positive impact on customer attitudes and health outcomes.

Drug Therapy Problems identification and medication therapy management

Drug therapy problems (DTP) are a categorization of drug problems in the field of pharmaceutical care that happen between physician, patients, and pharmacists. However, it is used as a definition of the specific manners in which drug therapies can cause problems. Pharmacists primarily identify, prevent, and resolve the potential or actual problems through their skills and expertise.[30] DTP is at the heart of pharmaceutical care. Additionally, many side effects of drugs prevent the body from absorbing essential nutrients.[31] A drug-therapy related problem (DTP) is an event or circumstance involving drug treatment that actually or potentially interferes with the patient experiencing an optimum outcome of medical care. Strand and colleagues classified the DTP into different categories and pharmacists generate a list of the DTP for each patient. As a result, pharmacists had a clearer picture of patient's drug therapy needs and its likely potential and actual impact on patients medical conditions and/or disease state. A study in Benin City Nigeria suggested that pharmaceutical care practice was not properly applied in the community pharmacies. Most of the community pharmacies engaged in traditional drug retailing and distribution. Most pharmacy premises have burglar-proofs, which separate patients from the dispensing areas without convenient places for consultations and patient counseling. This is very common to most pharmacy shops in Nigeria and a major limitation to pharmacist-patient communication and PC. Some pharmacists who currently apply some of the practice standards had clinical pharmacy or pharmaceutical care training.[32] Another study to describe pharmaceutical care interventions provided to hypertensive patients in a Nigerian community pharmacy setting, and assess the impact of the practice on patient outcomes, suggested that pharmaceutical care services provided to hypertensive patients showed improved blood pressure control and overall patients satisfaction with pharmaceutical care services.[33] This underscores the potentials of community pharmacies at improving health care services. These potentials could be harnessed through proper repositioning and policy reengineering at boosting pharmaceutical care services at all levels of health care delivery. Lack of workable strategies to adopt pharmaceutical care is a reason for poor response in adopting the standards by many pharmacists.[34] The low positive response to current applications and intentions to apply the suggested standards in Benin City is contrary to report from the Netherlands where it was obvious that the pharmacists engage in many pharmaceutical care activities including health promotion, disease prevention, patient counseling, and good communication with other health professionals without monopoly of interest.[35] The provision of pharmaceutical care is not merely a function of individual decision-making for pharmacists perceived control over their practice environments, but an invaluable professional service for improved patient care while promoting inter-professional collaboration and teamwork.[36] These limitations may account for the low positive response to applying pharmaceutical care standards as espoused by Hepler and Strand.[37, 38] Studies indicated limited knowledge of pharmaceutical

care practice in the entire West African sub-region.[39] While PC is a patient centered, outcome oriented pharmacy practice with a goal to optimizing patients, health related quality of life, and achieving positive outcomes, within realistic economic expenditures, it is still in its theoretical stage in most studies carried out in Nigeria.[40, 41, 42, 43]

Studies have been conducted on the knowledge, attitude, and practice of pharmaceutical care in Nigeria. In 2003, Oparah and Eferakeya showed that the attitudes of Nigerian pharmacists towards PC were favorably high irrespective of the practice settings. The attitude ratings varied with the levels of professional experience. Pharmacists with less experience showed more positive attitude towards PC. In 2002, some elements of PC activities such as medication history taking, blood pressure measurement among others was reported to have been practiced by some community pharmacists in Benin City.[44] Low satisfaction of patient with pharmaceutical services without PC has been reported as well.[45] Ma_aji, *et al.,* reported a deficit in knowledge and practice of PC, a positive attitude towards PC and lack of competence to practice PC.[46] Community pharmacies service out-of-stock prescriptions from government hospitals.[47] The Pharmacists Council of Nigeria (PCN) has set a standard to practice PC in pharmacy premises and organized training programs on PC for pharmacists across the country through the Mandatory Continuing Professional Development (MCPD) Program. However, the influence and impact of these trainings on the current practice has not been reported. Assessing the perception of pharmacists and their present level of involvement in patients care is therefore pertinent for probable and worthwhile interventions.[48] Community pharmacy practice is largely underdeveloped in Nigeria.[49] Government hospitals are characterized by the traditional dispensing of drugs and inventory management although quite a few of them practice the unit dose dispensing system without consistency. The hospital pharmacy layouts in most hospitals in Nigeria are unsuitable for effective implementation of pharmaceutical care services. Most of the pharmacy departments in government hospitals were after thoughts, pharmacy departments were carved out when the building construction projects have already been completed without due considerations for model pharmacies at the planning stage. This has a become recurring decimal which extends to community pharmacy services where some premises use cubicles on road sides and commercial areas. Most government hospitals operate drug revolving funds (DRF).[50] However, the costs of drugs are usually more expensive at the DRF hospitals forcing patients to patronize community pharmacies.

Community pharmacy practice in Nigeria is adversely affected by the operations of drug charlatans and open drug markets, which abound in the country. Examples are the notorious Onitsha Head Bridge and Ariaria drug markets located in southeast Nigeria. Sabongari open drug market is located in Kano, northern Nigeria while Idumota drug market is located in Lagos. The activities of these open drug markets have resulted to low returns on investments for community pharmacies. Drug hawkers and patent medicine vendors access over-the-counter and ethical preparations freely. Substandard and counterfeit medicines are widespread. [50] Most community pharmacists are usually absent from their outlets in the day and present in the evenings due to their involvement in other income generating activities during the day. The community pharmacy practice is in most times commercially inclined as opposed to pharmaceutical care that is a patient centered practice.[50] A study in Nigeria indicated ethical lapses in the performance of community pharmacists in a town in Nigerian. [20] Lack of documentation and absence of conducive and confidential environment for patient counseling purpose is common in most community pharmacies in Nigeria.

Clinical pharmacy, unlike the discipline of pharmacy is comparatively recent and variably implemented form of practice even though it is evolving in community practice. It encourages pharmacist to shift focus from a solely product oriented role.[50] Over the past two decades, there has been an emerging consensus that the practice of clinical pharmacy itself should grow from a collection of patient-related functions, to a process in which all actions should be undertaken to achieve defined outcomes for the patient.[38] The outcomes are Clinical, Humanistic, and Economic. To achieve this ends, pharmacists cooperate with patients and other health care professionals in designing, implementing, and monitoring a care plan aimed at preventing and resolving drug related problems.[50]

Pharmaceutical care complements existing patient care practices to make drug therapy more effective and safe. It does not intend to replace the physician care, pharmacy technicians, or any other health care practitioner. The pharmaceutical care practitioner is a highly skilled patient care provider within the health care system.[51] The responsibilities associated with drug therapy have become so numerous and complex that the need for practitioners with this focus has become urgent. The need for this practitioner resulted from the following reasons: multiple practitioners writing prescriptions for a single patient often without co-ordination and lack of good knowledge of therapeutics and communication, large number of medications and overwhelming amount of drug information presently available to patients. Patients play a more active role in the selection, use of medications and increase in the complexity of drug therapy. Other needs include increase in self-care through alternative and complementary medicine and level of drug-related morbidity and mortality which results in significant human and financial costs.[51]

Pharmaceutical care as the crucial philosophy and mission of pharmacy practice

Understanding and knowledge of this philosophy must precede efforts to implement pharmaceutical care. One primary setback to the practice of pharmaceutical care in our environment is lack of articulated standards for pharmacists to conform to in their daily practice. A study identified and evaluated the challenges to effective practice of pharmaceutical care in hospital settings. The result revealed the challenges that limit pharmaceutical care implementation namely; lack of time, insufficient remuneration, lack of teamwork among health care workers and deficiency in staff strength.[52] These findings are also obtainable in community pharmacies. Although pharmacists have good knowledge of pharmaceutical care, the Nigerian community pharmacists should match their PC knowledge with actions in their premises. Electronic dispensing is vital to PC and reduces time and efforts expended in contending with high patient-pharmacist ratio. There should be sufficient remuneration for pharmacists for rendering pharmaceutical care services. Other health care professionals should be educated on the importance of pharmaceutical care services.[52] Some PC studies have established the challenges to pharmaceutical care service implementation in community and hospital pharmacies in developing countries.[53, 54] Ogbonna *et al.* noted that institutional constraints, pharmacists attitude, lack of role models and government policies as the major limitations to PC practice in Nigeria.[71] A study by Okonta *et al.* identified similar problems.[55] Community pharmacies in Nigeria need to embrace this philosophy fully to drive the change.

Documentation practices in community pharmacies

Continuity of care will be illusive without proper documentation of patients information. Documentation enhances patients follow up and monitoring as they move from one level and state of care to another. Evidence calls for enhanced strategies through policy interventions and continuing education to facilitate pharmaceutical care documentation for wholesome implementation for improved quality of life.[56] In Nigeria, due to shortfalls in qualified medical personnel, direct access to pharmacists in all the areas of practice is not possible presently. Thus, the quality of pharmaceutical services in any given region is dependent on the availability of pharmacists. The conditions of pharmacy practice differ among countries and between different areas within the same country due to shortfall in the number of pharmacists. The direct supervision of pharmaceutical products by the pharmacist can be beneficial at ensuring the provision of high quality services to the patients.[57] Pharmacy employees do not follow dispensing workflow procedures. Poor dispensing practices could manifest as errors occurring at the transcription stage, incomplete dispensing, and lack of proper counseling about drugs sold, drugs not being labeled and different drugs mixed in the same package.[58] Drug sellers and hawkers abound with their unethical practices. Often times, they fail to counsel their customers while in some cases.[59] Customers were rarely informed about the precautionary measures and adverse effects of drug.[60] These services are provided in community pharmacies especially in those manned by registered pharmacists, but there is increased need for consistency and professionalism. Thus, community pharmacies are underutilized with respect to their capacity to deliver health promotion services.

Regulations and Control

Regulations regarding prescription drugs are generally not respected in developing countries, and one of the most worrisome issues concerning irrational drug use is the availability of over-the-counter drugs, which circulate freely.[61] The problem of dispensing prescription only medicine (POM) preparations as OTC, in many developing countries, is very common. Drug hawkers and vendors do not only prescribe and dispense drugs to their customers, but also do them with great confidence to woe innocent people.[58] Self-medication by patients especially with ethical preparations should be completely unacceptable.[62] Dispensers hardly ask questions about the illness and patients history obtained is inadequate to determine the nature or severity of disease or appropriateness of therapy.[63] The consequence is treating symptoms and leaving the underlying problems. Majority of the pharmacies do not have superintendent pharmacists while in some cases, the pharmacists consult only in the evening when they usually have rush. Majority of customers visiting community pharmacies seek care for acute respiratory infections (ARI), fever, pains, and diarrhea. Other conditions for which customers seek care at community pharmacies include loss of appetite, dyspepsia, rashes, wounds, worm infestation, emergency contraception, sexually transmitted diseases (STDs), skin infections eg scabies, eye, ear, nose, throat infections, and other self limiting conditions. [64] The quality of case-management at the retail sector leaves much room for improvement. It depends on the knowledge of the and manner in which private drug sellers treat their customers. [65] Pharmacy employees dispense wide range of drugs ranging from OTC, non-steroidal anti-inflammatory drugs (NSAIDs), antibiotics, and steroids.[66, 67] Studies show that some dispensers attend to their customers and provide treatments with friendly attitude and dispositions, but most of them prescribe ineffective, dangerous, inappropriate, and inadequate dosages f medications with little or no counseling. Such practices were observed for diarrhea,[68] acute respiratory infection (ARI),[58] malaria, back pain, and STD.[68] Another observation was that drug sellers and unskilled attendants in community pharmacies prescribe and sell drugs especially medications similar to those they have learnt by filling physicians prescriptions as reported by a study.[44] With scarce resources and easy access to drug sale outlets in developing countries, the role of pharmacist need to be emphasized for safe and effective use of medications through their evolving roles. It helped in the achievement

of millennium development goals especially at the grassroots.[62] Other limitations to pharmaceutical care in community pharmacies include resource related constrains, systemic constrains, pharmacists attitude, lack of pharmaceutical care skills and lack role models.[69]

Current dispensing practices in community pharmacies in Nigeria

Distribution of medicines relies greatly on community pharmacies. An estimated 80% of medicines are distributed through this channel. Thus, majority of the population relies on community pharmacy services for their health care needs. There are approximately 63,000 community pharmacies in Nigeria.[68] These pharmacies are quite diverse in their geographical distribution and operations, and are located in the urban areas, rural areas, sometimes a few meters away from government hospitals, in streets and residential areas, grocery stores and market stalls. They often lack adequate facilities, staffing, and equipment. Besides, the dispensers who work at these pharmacies are not trained, most of them learn through apprenticeship from patent medicine vendors, and are involved in making diagnoses, recommending therapy to helpless patients and dispensing of all manner of medicines. The state of community pharmacies in Nigeria is below what is obtainable in most developed countries. Inappropriate storage and dispensing of medicines, poor documentation, inappropriate prescription checks, and poor labeling are the foremost issues at these outlets in Nigeria. Non-availability of registered pharmacists, coupled with register-and-go syndrome, is major concern. There is shortage of pharmacists who could be engaged to ensure good pharmacy practice. The dispensers working at these community pharmacies have minimal formal education, with little or no professional training. They rely on information gathered from the medical representatives of pharmaceutical companies and experiences on the job over the years. With this state of qualification and training, they carry out the functions of a dispenser, storekeeper, inventory manager, accountant, prescriber, procurement officer, and patient counselor. All kind of medicines are freely available irrespective of their status. The process of prescription handling is poor and patients are treated blindly. Prescription validation, drug labeling, and patient counseling are the missing components of effective patient management in community pharmacies. Non-professionals handle ethical preparations due to the chaotic drug distribution system. However, on 1 July 2015, the Federal Government of Nigeria started initiation and implementation of a streamlined drug distribution system with a view to sanitizing the system from activities of charlatans. [70] Laws exist, but due to lack of accountability and weak regulatory framework, their implementation is short-lived. There is need for more empirical research in the area of dispensing practices at the grass roots.

Pharmaceutical care an evolving role and frontier in community pharmacy

Pharmaceutical care is an important component of good pharmacy practice but the pharmacists, stakeholders, and researchers in Nigeria have not embraced it fully due to poor regulations and practicing environment. There are very few studies, which focused on the practice of community pharmacies in Nigeria. Limited studies explored the role of pharmaceutical care in community pharmacies in Nigeria. Studies conducted in other countries provide insight on these issues, though the differences in healthcare systems make it difficult to extrapolate the results to the Nigerian setting.[43] Health system research focusing on current dispensing practices is required to explore PC and community pharmacy operations in Nigeria. It requires stakeholders collaboration in designing and executing a well thought-out, scientifically sound study design, with quantitative and qualitative tools and provision of ample funding.

CONCLUSION

This article described the state of pharmaceutical care in community pharmacy practice in Nigeria. Community pharmacies have great potentials as a channel for rendering public health services at the grassroots but remain largely untapped. Pharmaceutical care boosts patients care and improves health outcomes. However, it is still alien to most community pharmacies in Nigeria. Gaps exist in matching the theory with practice of pharmaceutical care in community pharmacies in Nigeria. Pharmaceutical care improves service delivery in line with the global best practice and pharmacists expanded role.

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