ASSESSMENT OF THE PERCEPTION OF PHARMACEUTICAL CARE AMONG PHARMACISTS AND OTHER HEALTHCARE PROVIDERS IN PRIMARY HEALTHCARE CENTRES IN BENIN CITY

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A PROJECT SUBMITTED TO THE DEPARTMENT OF CLINICAL PHARMACY AND PHARMACY PRACTICE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DOCTOR OF PHARMACY (PHARM. D) DEGREE OF THE UNIVERSITY OF BENIN, NIGERIA.

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CERTIFICATION

This is to certify that this project work was carried out by **Kasim Divine Isioma** with Matriculation number **PHA1808398** in the Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, University of Benin. Benin City in partial fulfillment of the requirements for the award of Doctor of Pharmacy (Pharm.D) degree.

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DEDICATION

This project work is dedicated to God Almighty for His guidance, mercies, direction and provision throughout the course of this study, to my family for their unwavering love, support, and encouragement throughout my academic journey, their belief in me has been my greatest motivation and to my friends for being dependable.

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ABSTRACT

Background of the study: The effective integration of Pharmaceutical Care (PC) is essential for optimizing therapeutic outcomes and improving patient safety, particularly in resource-constrained Primary Healthcare (PHC) Centres. However, the successful implementation of PC is critically dependent on the level of knowledge, attitude, and interprofessional dynamics among the entire healthcare team. Understanding these perceptions in the PHC setting is crucial for identifying enablers and systemic barriers to collaborative patient care.

Objectives: This study aimed to determine the level of awareness and knowledge of PC among PHC pharmacists and other healthcare providers; assess their attitudes toward the pharmacist's role in PC provision; identify perceived barriers to PC implementation in PHC centres; and evaluate the level of interprofessional collaboration in PC delivery.

Methods: A cross-sectional descriptive study was conducted in Primary Healthcare facilities within Benin City, Nigeria. A total of 150 healthcare professionals (including Pharmacists, Physicians, Nurses, and Community Health Workers) were recruited using a convenient sampling technique. Data were collected via a structured, self-administered questionnaire. Descriptive statistics, one-way Analysis of Variance (ANOVA), and Pearson correlation were used to analyze the data, with the significance level set at $p < 0.05$.

Results: The study found a generally good overall knowledge of PC (Mean = 3.71) and a highly positive attitude (Mean = 3.85) toward its implementation. Pharmacists recorded the highest mean scores for both knowledge (4.50) and attitude (4.52), with these differences being statistically significant across professions ($p = 0.000$). A strong positive correlation was observed between knowledge and attitude ($r = 0.736$, $p < 0.05$), confirming that higher understanding promotes positive disposition. The most critical barriers identified were role conflict (Mean = 3.94), lack of clinical training (Mean = 3.71), and limited staffing/high workload (Mean = 3.65). However, inter-professional collaboration was rated as generally strong (Mean score range: 3.87 – 4.03).

Conclusion: Pharmaceutical care is positively perceived and supported by the majority of healthcare providers in PHC centres. However, its optimal delivery is primarily hindered by professional barriers such as role conflict and systemic issues like inadequate staffing and training. Recommendations include enhancing professional education across all cadres and strengthening policy support to ensure the full integration of pharmacists into clinical decision-making within the primary healthcare team.

Keywords: Inter-professional collaboration, Perception, Pharmaceutical care, Pharmacists, Primary Healthcare Centres, Role conflict.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In recent years, implementation of pharmaceutical care for the benefit of patients and health services has been highlighted worldwide (Council Europe Committee). In 1990, pharmaceutical care was defined by Hepler and Strand as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life", which "involves the process through which a pharmacist co-operates with a patient and other professionals in designing, implementing and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient" (Hepler *et al.,* 1990). More than twenty years later, the board of the Pharmaceutical Care Network Europe (PCNE) redefined the concept to "Pharmaceutical Care is the pharmacist's contribution to the care of individuals in order to optimize medicine use and improve health outcomes" (Allermena *et al.,* 2024). These two definitions by Hepler and Strand and the PCNE have in common that they emphasize the pharmacists' role only. Nevertheless, pharmaceutical care does not stand alone but must be embedded in multidisciplinary treatment. It is well recognized that there is a need for inter-professional collaboration in pharmaceutical care to improve care quality and patient outcomes (Dillies *et al*., 2021). In 2023, the concept of pharmaceutical care still lacked consensus but was broadly discussed. In this study, pharmaceutical care is defined as "Healthcare professionals' contribution to the care of the individual in order to optimize medicine use and improve health outcomes".

Due to an ageing population and the increase in long-term conditions, the number of people with multiple health conditions is set to rise. Most of these people are dependent on primary care services, which are described as the heart of integrated people-centred health care in many countries (Gomies *et al.,* 2023). People with multimorbidity are at higher risk of safety issues such as polypharmacy, which may lead to poor medication adherence and adverse drug events. Given that guidelines currently in use are based on treatment of a single diagnosis, it is challenging to treat this patient group (De Beetselier *et al.,* 2021). This put demands on inter-professional collaboration, as these patients will probably need help from all parts of the health service. Previous research has illuminated the fact that inter-professional collaboration between nurses, pharmacists, and physicians makes it easier to detect drug-related problems and helps to reduce inappropriate drug treatment (Mercer *et al.,* 2016).

A never-ageing population and multimorbid patient groups exposed to polypharmacy constitute a challenge in primary healthcare. According to research, inter-professional collab oration between nurses, pharmacists, and physicians may contribute to raising awareness of pharmacological issues, increasing quality, and minimizing errors in pharmaceutical care (Dijuski *et al.,* 2022). The nurse's role in inter-disciplinary pharmaceutical care is not transparent and varies between European countries. Similarly, in curricula for nurse education, the content of pharmaceutical care varies a lot. With this background, a European project entitled "Development of a model for nurse's role in inter-professional pharmaceutical care" was carried out. The present study, whose objective is to gain more knowledge about inter-professional collaboration in pharmaceutical care within community healthcare, is part of this European project and focuses on the Norwegian results.

Primary healthcare (PHC), as defined by the World Health Organization (WHO), is the first level of contact individuals, families, and communities have with the healthcare system and is central to achieving universal health coverage (WHO, 2018). It provides essential, accessible, and community-based services that are critical to maintaining population health. As the burden of chronic diseases and polypharmacy continues to rise, particularly in low- and middle-income countries, the integration of pharmaceutical care into PHC settings is increasingly recognized as essential for improving medication outcomes and overall health status (Osemene & Erhun, 2020).

Despite its importance, the practice of pharmaceutical care in many primary healthcare centers—especially in developing nations—remains suboptimal. This is often due to systemic barriers such as inadequate workforce capacity, lack of institutional support, limited inter-professional collaboration, and poor understanding of the pharmaceutical care concept by other healthcare providers (Oparah & Adomeh, 2020; Adedapo & Lawal, 2022). The perception of pharmaceutical care among healthcare workers—including pharmacists, nurses, physicians, and community health workers—plays a crucial role in determining how well the service is implemented and accepted in clinical practice (Ibrahim *et al.*, 2024). Pharmacists may view pharmaceutical care as a professional obligation and an opportunity to expand their clinical roles, while other healthcare providers may perceive it as an encroachment on their professional domains or a duplication of roles (Makonnen *et al*., 2023). Therefore, understanding these perceptions is vital for identifying the enablers and barriers to effective inter-professional practice and successful implementation of pharmaceutical care services in PHC centres. This study seeks to assess the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare centers. It will explore their level of awareness, acceptance, perceived benefits, and challenges related to the provision of pharmaceutical care.

The findings will help inform policy, education, and practice reforms aimed at enhancing inter-disciplinary collaboration and improving the quality of pharmaceutical services in PHC centres settings.

1.2 LITERATURE REVIEW

Conceptual Review: Definition and Components of Pharmaceutical Care

Pharmaceutical care

Hepler CD and Strand LM originally proposed the idea of pharmaceutical care in 1990 (Gao *et al*., 2024). In the past, pharmacists' responsibilities were largely restricted to preparing and distributing medications, but began to grow beginning in the early 1990s and change to include more patient focused task (Tawfiq *et al*., 2021). Implementing and growing PC services depends on pharmacists having a good attitude toward PC(Tawfiq *et al*., 2021).

Pharmaceutical care, as defined by science, is the pharmacist's contribution to pharmacotherapy optimization through a variety of pharmaceutical services (Kopciuch *et al*., 2021). Most of the time, people use the definition provided by Hepler and Strand in 1990 which states that "pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient's quality of life," (Allemann *et al*., 2024).

Highlighting the advantages of PC, especially in lowering avoidable drug-related morbidity and mortality, has demonstrated its adoption in the healthcare system in recent years (Hasen, G., & Negeso, B.,2021). There is a need for the healthcare administrator to offer affordable drug reimbursement policies to ensure that the patients do not pay excessive out-of-pocket payments to promote their access to and willingness to pay pharmaceutical care services. In addition to offering the potential for cost savings through reimbursement of drugs dispensed in pharmacies,

PC gives a pharmacist and a doctor the chance to work closely together to ensure the patient has the best pharmacotherapy conditions possible and prevent polypharmacy issues (Kopciuch *et al*., 2021).

Moreover, policymakers must seek to achieve universal health coverage in the long run, which will help reduce barriers to drug access and encourage demand and utilization of pharmaceutical care services (Bajracharya *et al*., 2021). In this way, patients understand their role in accessing and paying for medication and revive the pharmacy budget and infrastructure for sustainable development. This study aims to explore these factors by reviewing relevant literature and identifying key research areas.

1.3 PHARMACEUTICAL CARE SERVICES

Pharmaceutical Care Services (PCS) are patient-centred services aimed at empowering patients and/or caregivers to take charge of their medication needs and achieve the best health outcome. PCS is intended to enhance current patient care procedures in order to increase the efficacy and s afety of drug therapy (Barnsteiner, 2018). Patient's health care experiences and satisfaction are frequently used as a healthcare quality indicator. Waiting time, gender, age, nationality, geographical region of the pharmacy, educational level, and familiarity with the PHC Centres were found to be significantly associated with satisfaction level. Based on the public's needs and expectations, pharmacists need to continuously improve their effort to enhance the healthcare quality in the organization (Loh *et al*., 2021). Given the high prevalence of a wide range of chronic illnesses and poor medication adherence, the World Health Organization (WHO) and the International Pharmaceutical Federation have stressed the significance of shifting pharmacists' traditional role from one that is product-oriented to one that is patient-centered (Hasen, G., & Negeso, B.,2021).

Worldwide, Pharmaceutical Care (PC) services are now the mainstay of pharmacy practice (Ofili *et al*., 2023). Pharmacist-led interventions are essential to the effective delivery of PCS (Eldooma *et al.*, 2023). To guarantee that patients receive uniform, standardized care across care settings. PCS consists of four major service components:

1.Medication reconciliation,

2. Adherence and knowledge assessments

3. Medication optimization,

4. Patient counselling

In the primary care setting pharmacist can help review and manage patients' drug therapy, assess drug-related needs, ensure medication and patient safety, and enhance medication adherence(Al Zaidan *et al*., 2022).

Table 1.3: PCS Service Components

Service Components	Description
Medication Reconciliation	Make the patient's medication list, which should be as accurate as possible, of all the medications the patient is taking at any one moment.
Medication Optimization	Review and optimize the medication regimen based on patient's condition. Resolve identified drug-related problems.
Patient Counselling	Counsel on medication management issues such as medication storage, administration, handling, disposal, changes in dose regimen, side effects, drug interactions. Advise on improving adherence, reminder aids, repackaging of medication, cost issues and appropriate disease, nonpharmacological or lifestyle management.
Adherence and Knowledge assessments	Evaluate the patient's compliance and understanding of the medication they are taking.

Every PCS session concludes with the PCS pharmacist recording in a Pharmaceutical Care Plan (PCP) the agreed-upon pharmacotherapeutic approach to the patient's medical condition. Pharmaceutical care services resulted in better health indices for patients, including significant reductions in systolic and diastolic blood pressure, glycated haemoglobin (HbA1c) levels, and knowledge of the disease, improvements in some aspects of health-related quality of life.

1.3.1 Medication Reconciliation

According to the Institute of Medicine's *Preventing Medication Errors* report- Every day, the typical hospitalized patient experiences at least one drug error (Barnsteiner, 2018). Medication Reconciliation is defined as the process of identifying the most accurate list of all medications that the patient is taking, including name, dosage, frequency, and route, by comparing the medical record to an external list of medications obtained from a patient, hospital, or other provider.

The Joint Commission designated medication reconciliation as the eighth National Patient Safety Goal for 2005. In compliance with the National Medication Reconciliation Guideline, the pharmacist and/or pharmacy staff should, to the best of their abilities, undertake medication reconciliation before offering the service in order to produce the most accurate list of medications the patient is taking. This process comprises five steps:

- develop a list of current medications
- develop a list of medications to be prescribed
- compare the medications on the two lists
- make clinical decisions based on the comparison and

- communicate the new list to appropriate caregivers and to the patient (Barnsteiner, 2018).

1.3.2 Adherence and Knowledge assessments

A person's behaviour and knowledge are evaluated in relation to a health care provider's recommendations using adherence and knowledge assessments. Nonadherence to medication results in costly diagnostic testing, inefficient and unneeded therapies, and therapy escalation, which frequently causes adverse patient events (McDermott J *et al*. 2022). Medication non-adherence leads to poor outcomes, which then increase health care service utilization and overall health care costs. Both direct and indirect methods can be used to evaluate medication adherence. The foundation of evaluating medication adherence is indirect measures, which comprise both subjective (self-report measures like questionnaires and interviews) and objective (pill count and secondary database analysis) measures (Basu *et al*., 2019). Factors affect patient adherence to medication include demographic variables such as age and socioeconomic status, psychosocial and behavioural characteristics, characteristics of medication (regimen, side effect, taste etc.) and interface with the health care system or patient understanding of their disease condition.

1.3.3 Medication Optimization

Medication optimization is a patient-centred approach to safe and successful medication use, medication optimization and aims to provide the optimum results (Maidment *et al*., 2022). Medication optimization can be provided through a variety of clinical services, including comprehensive medication management (CMM), targeted disease state management, medication therapy management (MTM), and medication synchronization.

To make sure a person is taking their medications as prescribed and to help manage long-term diseases, multiple morbidities, and polypharmacy, it is crucial to optimize their medication regimen.

1.3.4 Patient Counselling

Patient counseling refers to the process of providing information, advice and assistance to help patients use their medications appropriately. The essential objective of patient advising is to help patients figure out their ailments, including the side effects, causes, and possible complications (Jay & Melanie, 2023). The information and advice is given by the pharmacist. Pharmacists who provide patients with appropriate and sufficient PMC may be able to prevent treatment failure, reduce resource waste, engage patients in self-management of their illnesses, and identify and address drug therapy issues (Showande & Laniyan, 2022).

Steps involved in patient counselling

1. Establishing Pharmacist-Patient relationship.

2. Assessment of Patients Knowledge regarding his condition.

3. Provide information orally and use visual aids.

4. Verify patients' knowledge and understanding of medication use (Manohar R. 2021).

Benefits of Patient Counselling to Pharmacist

Patient counselling strengthens the position of pharmacists in the healthcare system while also improving patient outcomes('Benefits of Patient Counselling', 2024)

- Improved Patient Adherence
- Enhanced Patient Trust
- Reduction in Medication Errors
- Professional Growth
- Better Patient Outcomes

1.4 EMPIRICAL REVIEW

Over the past three decades, the concept of pharmaceutical care has gained considerable attention globally. Several studies have been conducted to assess how pharmacists perceive and implement pharmaceutical care in their respective practice settings. Globally, the perception of pharmaceutical care among pharmacists has shown a gradual shift from mere product-oriented roles to more patient-centered services. For example, in a study conducted by Hattingh *et al*. (2016) in Australia, community pharmacists expressed positive attitudes toward pharmaceutical care but highlighted systemic barriers such as lack of time, insufficient remuneration, and inter-professional collaboration challenges. Similarly, in the United States, Chisholm-Burns *et al*. (2010) reported that pharmacists perceived pharmaceutical care as central to patient safety and clinical effectiveness, although workload and organizational support remained obstacles to full implementation. In developing countries, perceptions vary based on education, infrastructure, and health policy. For instance, a study by Erah and Nwazuoke (2002) in Nigeria revealed that most community pharmacists understood the principles of pharmaceutical care but lacked the necessary skills and institutional frameworks to practice effectively. In Ghana, Owusu-Asante and colleagues (2017) found that while hospital pharmacists had a good understanding of

pharmaceutical care, the practice was limited by poor documentation systems and minimal collaboration with other healthcare workers. Locally in Nigeria, studies by Osemene and Erhun (2020) and Eniojukan and Adeniyi (2017) have indicated a moderate to high awareness of pharmaceutical care among pharmacists in urban centers. However, their findings also highlight a discrepancy between knowledge and actual practice, particularly in primary health care (PHC) settings where pharmacists may be underutilized or absent altogether.

For example, Osemene and Erhun (2020) conducted a cross-sectional survey involving 200 community pharmacists in Southwestern Nigeria using a self-administered questionnaire. The study revealed that while 85% of respondents were aware of pharmaceutical care, only 42% actively practiced it. Factors such as lack of patient data, inadequate staffing, and limited time were cited as barriers. In contrast, a study by Al-Arifi (2022) in Saudi Arabia assessed hospital pharmacists' attitudes and practices toward pharmaceutical care using a structured questionnaire distributed to 150 pharmacists. The study reported a generally positive attitude, with over 70% agreeing that pharmaceutical care improved patient outcomes. However, less than 50% routinely documented care plans or interventions, indicating a gap between perception and action. In Ghana, Agyekum and colleagues (2019) used a mixed-methods design to study pharmacists in PHC settings. Their findings revealed a high level of enthusiasm for pharmaceutical care but limited structural support in terms of logistics, policy backing, and training. Most pharmacists felt their clinical input was undervalued compared to physicians and nurses. In Uganda, Ssekikubo *et al*. (2021) employed a qualitative approach involving semi-structured interviews with pharmacists and healthcare administrators. The study found that while pharmacists understood their role in pharmaceutical care, role ambiguity and lack of clear job descriptions hindered their full involvement in PHC.

Comparison of Gaps in Perception and Practice

In high-income countries, the gap is primarily due to logistical issues such as lack of time and inadequate reimbursement systems (Hattingh *et al*., 2016). In contrast, in low- and middle-income countries like Nigeria, Ghana, and Uganda, the barriers are more structural, including absence of clear policies, lack of trained personnel, insufficient collaboration with other health professionals, and absence of pharmaceutical care documentation systems (Agyekum *et al*., 2019; Osemene & Erhun, 2020). Moreover, while community pharmacists in urban centers may have better access to training and continuing professional development, pharmacists working in PHC centrs or rural settings often lack the resources and authority to practice pharmaceutical care meaningfully. This urban-rural disparity was evident in studies by Erah and Nwazuoke (2002) and Eniojukan and Adeniyi (2017), which showed a sharp decline in pharmaceutical care delivery outside tertiary or urban hospitals. Another notable gap lies in inter-professional collaboration. Many pharmacists express frustration at being excluded from clinical decision-making processes, a situation that undermines the principles of pharmaceutical care. This was especially emphasized in the Ugandan study by Ssekikubo *et al*. (2021), where pharmacists noted that their clinical opinions were often disregarded. Furthermore, inadequate integration of pharmaceutical care into pharmacy education curricula and lack of clinical rotation opportunities also contribute to the observed implementation gap (Adjei *et al*., 2018).

The Theory of Planned Behavior (TPB) developed by Ajzen (1991), is one of the most widely used psychological frameworks to explain and predict human behavior, especially in the fields of health, psychology, and behavioral sciences. The theory posits that an individual's intention to perform a behavior is the most immediate and important predictor of whether that behavior will

be carried out. Intention itself is influenced by three key constructs: Attitude toward the behavior, Subjective norms and Perceived behavioral control

1.Attitude toward the Behavior: This refers to the individual's positive or negative evaluation of performing the behavior. In the context of pharmaceutical care, a pharmacist's belief about the effectiveness, relevance, and benefits of providing pharmaceutical care will influence their intention to engage in such practice.

2.Subjective Norms: Subjective norms relate to perceived social pressure to perform or not perform the behavior. If pharmacists believe that their colleagues, supervisors, or other healthcare professionals expect them to provide pharmaceutical care, they are more likely to do so. Conversely, if they perceive a lack of support or appreciation from other professionals or the health system, their intention may diminish.

3. Perceived Behavioral Control: This refers to the individual's perception of how easy or difficult it is to perform the behavior. In this context, if pharmacists feel they have adequate training, time, authority, and resources to provide pharmaceutical care in PHC centres, they are more likely to implement it. If they perceive barriers such as lack of training, heavy workload, or lack of institutional support, their intention and actual behavior may be negatively impacted.

The TPB is particularly relevant for assessing pharmacists' perception of pharmaceutical care in PHC centres because it provides a structured approach to understanding why pharmacists may or may not engage in pharmaceutical care, even when they are knowledgeable or supportive of the concept. For example, a pharmacist may have a positive attitude toward pharmaceutical care but may not practice it due to institutional constraints (low perceived behavioral control), or due to absence of policy backing (negative subjective norms).

1.5 STATEMENT OF THE PROBLEM

The delivery of pharmaceutical care has become an essential component of modern pharmacy practice, emphasizing a shift from traditional drug dispensing to a patient-centered model that improves therapeutic outcomes. Despite the recognition of pharmaceutical care as a professional obligation and a public health necessity, evidence suggests that its implementation in Nigeria's PHC centres is minimal or altogether absent. Pharmacists working in PHC centres are often restricted to supply and administrative roles, with limited or no involvement in direct patient care, clinical decision-making, or chronic disease management (Osemene & Erhun, 2012; Adjei *et al*., 2018). This underutilization is alarming, given the strategic role PHC centres play as the first point of contact for the majority of Nigerians, especially those in rural and underserved communities. A critical issue contributing to this gap is the perception of pharmaceutical care among pharmacists themselves. Studies have shown that while pharmacists generally express positive attitudes towards pharmaceutical care, many are either not practicing it or are unsure how to implement it within the constraints of the PHC system (Eniojukan & Adeniyi, 2017). The discrepancy between awareness and implementation reflects a deeper issue related to role definition, systemic barriers, inadequate training, and lack of supportive policies in the PHC environment (FIP, 2009; WHO, 2011).

The relevance of this gap to public health cannot be overstated. PHC centres are expected to provide comprehensive, accessible, and community-based care, especially for communicable and non-communicable diseases (NCDs). The lack of active pharmaceutical care services undermines rational medicine use, compromises medication safety, and limits the potential for effective chronic disease management and patient education. According to Chisholm-Burns *et al*. (2010), pharmacist involvement in direct care leads to better therapeutic outcomes, reduced

hospitalizations, and improved medication adherence which are outcomes critically needed in the PHC setting where health indicators remain poor. From a pharmacy practice perspective, the limited engagement of pharmacists in pharmaceutical care within PHC centres suggests a misalignment between professional capabilities and actual roles performed. It raises questions about professional identity, job satisfaction, and the broader contributions of pharmacists to inter-disciplinary healthcare teams. Moreover, it limits the profession's visibility and value in achieving universal health coverage (UHC), which hinges on the integration of essential services including medication management at the primary care level.

In most PHC centers, pharmacists are often underutilized, with their roles limited to dispensing medications rather than participating in clinical decision-making or patient-centered care. At the same time, other healthcare providers (such as physicians, nurses, and community health workers) may lack awareness or understanding of the clinical roles pharmacists can play, leading to poor inter-professional collaboration and fragmented care delivery. Existing studies have primarily focused on pharmaceutical care practice in secondary and tertiary healthcare facilities, with limited evidence on how pharmaceutical care is perceived and implemented at the primary care level, particularly among the diverse team of healthcare providers working in these centers. Without a clear understanding of the perceptions, attitudes, and collaboration dynamics between pharmacists and other PHC workers, efforts to institutionalize pharmaceutical care risk being ineffective or unsustainable. Moreover, barriers such as limited training, professional role conflicts, weak policy frameworks, and inadequate infrastructure further hinder the successful adoption of pharmaceutical care practices in PHC centres. These systemic and perceptual challenges underscore the urgent need for a comprehensive assessment of how pharmaceutical care is viewed and valued by both pharmacists and other healthcare professionals working at the

frontline of primary care. Therefore, this study seeks to fill this critical knowledge gap by assessing the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare centers. Understanding these perceptions is essential for informing policy, improving inter-professional collaboration, and enhancing the quality of medication-related care provided at the primary level of the health system.

In summary, there is a clear gap between the recognized importance of pharmaceutical care and its actual practice in PHC settings in Nigeria. This disconnect may be influenced by the perceptions, beliefs, and systemic experiences of pharmacists working in these settings. Therefore, assessing how pharmacists perceive pharmaceutical care in PHC centres is not only timely but necessary for informing policy, guiding practice transformation, and enhancing public health outcomes through optimized medication use.

1.6 JUSTIFICATION OF THE STUDY

Pharmaceutical care has emerged as a cornerstone of modern pharmacy practice, aiming to improve therapeutic outcomes, promote rational drug use, and enhance patient safety through a collaborative, patient-centered approach. Despite its proven benefits, the integration of pharmaceutical care into primary healthcare (PHC) systems (especially in resource-limited settings) remains suboptimal. This study is justified on several important grounds:

1. Bridging the Gap Between Policy and Practice

While pharmaceutical care is advocated by global health authorities such as the World Health Organization (WHO, 2018) and the International Pharmaceutical Federation (FIP, 2019), there remains a significant gap between these global policy recommendations and actual practice in primary healthcare centers, especially in developing countries like Nigeria. The assessment of

healthcare providers' perception is crucial to understanding the reasons for this implementation gap and identifying practical solutions.

2. Enhancing Inter-professional Collaboration in PHC Centres

Successful delivery of pharmaceutical care requires effective collaboration between pharmacists and other healthcare professionals, such as physicians, nurses, and community health workers. However, existing literature indicates the presence of professional role conflicts, poor communication, and limited understanding of the pharmacist's clinical role (Makonnen *et al*., 2023). This study will provide evidence on the extent of these inter-professional dynamics and suggest ways to improve team-based care.

3. Promoting Rational Drug Use and Reducing Medication Errors

Primary healthcare facilities in low- and middle-income countries face numerous challenges, including irrational drug prescribing, polypharmacy, and medication errors. Integrating pharmaceutical care into PHC can mitigate these problems by ensuring better medication therapy management. Assessing healthcare providers' perceptions is vital for gauging their readiness to support this transformation and for tailoring interventions that improve prescribing and patient safety.

4. Strengthening the Role of Pharmacists in PHC Settings

Pharmacists in PHC centers are often underutilized and relegated to drug dispensing roles, which limits their potential to contribute to patient care (Oparah & Adomeh, 2020). This study will help highlight both the willingness and capacity of pharmacists to assume expanded clinical roles, as

well as the institutional and systemic barriers that hinder this role transition. The findings can support advocacy for better recognition, policy inclusion, and training of pharmacists.

5. Supporting Health System Strengthening and Universal Health Coverage (UHC)

Improving access to quality pharmaceutical care at the primary level aligns with the goals of Universal Health Coverage (UHC) and national health strategies. By understanding how pharmaceutical care is perceived and practiced, especially at the community level, this study will provide insights into how to make health services more responsive, equitable, and effective in meeting medication-related needs.

6. Limited Empirical Evidence in PHC Contexts

While several studies have explored pharmaceutical care in tertiary and secondary hospitals, there is a dearth of empirical evidence focusing on primary healthcare settings, particularly in Nigeria and other low-resource environments. This study fills a critical gap by providing context-specific data that can inform local and national policy development, professional education, and practice reform.

Research Questions

- What is the level of understanding of pharmaceutical care among PHC pharmacists?
- What are the attitudes of pharmacists towards pharmaceutical care?
- What challenges affect the perception of pharmaceutical care in PHC centres?

1.7 OBJECTIVES OF STUDY

- **General Objective:**

To assess the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare centers.

- **Specific Objectives:**

1. To determine the level of awareness of pharmaceutical care among pharmacists and healthcare providers.
2. To assess attitudes toward the role of pharmacists in providing pharmaceutical care.
3. To identify perceived barriers to the implementation of pharmaceutical care in PHC centres.
4. To evaluate the level of inter-professional collaboration in the provision of pharmaceutical care.

CHAPTER TWO

METHODS

2.1 STUDY DESIGN

The research employed a cross-sectional descriptive study design to provide useful information on the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare centers. The study's purpose is to identify these perceptions by collecting and analyzing data from different pharmacists and other healthcare providers. This study will help improve the quality of service provided by pharmacist both in hospital and community pharmacy and also help create awareness on the roles of pharmacist in optimizing medication outcomes and can also help encourage pharmacist to invest more time and resources in acquiring these skills.

2.2 STUDY SETTING.

The study was conducted at different primary healthcare facilities in Benin City, Edo State, Nigeria. The Benin City primary healthcare facilities consisted of both rural and urban healthcare facilities, serving as centers for a wide range of medical services, including pharmaceutical care. The Benin City primary healthcare facilities specifically cater to patients providing them with access to a variety of medications and pharmaceutical care services. The study setting will involve both the hospital environment, pharmacist and healthcare providers (nurses, doctors) who offer pharmaceutical care needs. Data was collected from the healthcare providers.

2.3 STUDY POPULATION

The study population will include all Primary Healthcare providers working in Benin City (Pharmacist, Nurses, Doctors and others) Primary Healthcare.

2.4 INCLUSION CRITERIA

The inclusion criteria for participation in the study are as follows:

- Healthcare Providers (18 years and above) who work in any of the Benin City primary healthcare facilities.
- Healthcare Providers who are offering pharmaceutical care services at the study site.
- Healthcare Providers who were willing to provide informed consent to participate in the study.
- Healthcare Providers who understand that the questionnaire or interview is for the purpose of data collection.

2.5 EXCLUSION CRITERIA

The exclusion criteria for the study are as follows:

- Minors (under 18 years of age).
- Healthcare providers who refuse to provide informed consent or do not wish to participate in the study.

2.6 SAMPLE SIZE DETERMINATION

The sample size for this study will be calculated using the formula for estimating proportions in a population, as stated below

$$\textbf{Sample size(n)} = \frac{z^2 \times p(1-p) \div e^2}{1 + \frac{\{z^2 \times P\,(1-P)\}}{e^2 N}}$$

Where:

N = Population Size = 500 (total number of Healthcare providers including Pharmacist).

Z = *Z* is the Z-score corresponding to the desired level of confidence (e.g., 1.96 for a 95% confidence level), which will be 1.96 for this study.

p = Standard of deviation = 0.5

e = the desired margin of error = 0.05

n = 217

sample size = 217

2.7 SAMPLING TECHNIQUE

For this study, a convenient sampling technique was employed to select participants.

2.8 DATA COLLECTION TOOL

The primary tool for data collection was a self-administered questionnaire, designed in accordance with the study objectives and informed by a review of relevant literature. The respondents were Pharmacist, Nurses, Doctors and Community Health Workers. They were provided with standardized questionnaires designed to facilitate the collection of quantitative data.

The questionnaire included a series of structured questions aimed at capturing the perspectives on several key areas. By analyzing the responses, we aim to gain a comprehensive understanding of these aspects within the context of the study. The questionnaire was meticulously divided into several sections to ensure comprehensive data collection.

The first section was used to collect sociodemographic data, including information such as age, gender, profession, years of experience and type of facility. This helped in understanding the background of the respondents and in identifying any demographic trends.

The second section focused on determining Knowledge and Awareness of pharmaceutical care.

The third section investigated the attitude towards pharmaceutical care.

The fourth section explored perception of pharmaceutical care services and the level of service which is directly link to the perceived value.

The fifth section was dedicated to identifying barriers and challenges.

The final section focused on assessing the inter-professional collaboration in the health facility.

2.9 DATA ANALYSIS

Data collected was coded and entered into SPSS version 21.0 software (SPSS Inc. Chicago IL USA). Descriptive statistics was used to report the frequencies. Inferential analysis was conducted with the aid of Chi-square, and p-values < 0.05 will be considered significant.

The questionnaire will include a series of structured questions aimed at capturing the Healthcare providers perspectives on several key areas. By analyzing the responses, we aim to gain a comprehensive understanding of these aspects within the context

2.10 ETHICAL CONSIDERATIONS

Permission to undertake this study was obtained from the Edo State Government Ministry of Health and the Office of the Egor Local Government Medical Officer of Health. Informed consent was also sought and obtained from the participants in this study.

The research information was provided to the participants for voluntary and autonomous participation, and the possibility to withdraw at any time they wish. The principles of voluntary participation, anonymity, and confidentiality were maintained throughout the study.

CHAPTER THREE

RESULTS

3.1 Socio-Demographic Data of Respondents

A total of 150 healthcare professionals participated in the study. The majority of respondents were females (61.3%), while males accounted for 38.7%. Most respondents were between 41–50 years (39.3%), followed by those aged 31–40 years (32.7%), indicating that the workforce was largely middle-aged and experienced. In terms of professional category, nurses constituted the largest group (32.7%), followed by pharmacists (20.7%), community health workers (19.3%), physicians (17.3%), and others (10.0%). The distribution reflects the multidisciplinary composition typical of primary healthcare centres, though nurses formed the majority. Regarding years of experience, 39.3% had 6–10 years, 32.0% had 1–5 years, and 18.7% had 11–15 years of professional experience. This shows that most respondents were well-experienced and familiar with the workings of the PHC system. Finally, 74.7% of respondents worked in urban PHC centres, while 25.3% were based in rural areas, showing that the majority of the participants were from better-equipped healthcare settings.

Overall, the socio-demographic data indicate that respondents were predominantly experienced, middle-aged, female healthcare providers, with nurses forming the majority and most working in urban PHC centres.

Table 3.1: Socio-Demographic Data of Respondents

ITEM	FREQUENCY	PERCENTAGE
AGE		
18-30 Years	14	9.3
31-40 Years	49	32.7
41-50 Years	59	39.3
51-60 Years	27	18.0
60+ Years	1	0.7
GENDER		
Male	58	38.7
Female	92	61.3
PROFESSION		
Pharmacist	31	20.7
Physician	26	17.3
Nurse	49	32.7
Community Health Worker	29	19.3
Others	15	10.0
YEARS OF EXPERIENCE		
<1 Years	15	10.0
1-5 Years	48	32.0
6-10 Years	59	39.3
>10 Years	28	18.7
TYPE OF FACILITY		
Urban PHC Centre	112	74.7
Rural PHC Centre	38	25.3

3.2 Respondents Knowledge and Awareness of Pharmaceutical Care

Table 2 showed that most healthcare providers had a good level of awareness and understanding of pharmaceutical care. About 74% of respondents were familiar with the concept, and 66.7% agreed that its main goal is to optimize patient outcomes. This indicates strong foundational knowledge among PHC workers. However, only 58% clearly understood the difference between traditional pharmacy practice and pharmaceutical care, while 49.3% believed they received adequate training on the concept during their professional education. This points to a gap in formal training and depth of understanding, especially among non-pharmacist healthcare workers. Furthermore, 53.4% of respondents understood the core components of pharmaceutical care identifying, preventing, and resolving drug therapy problems—showing moderate practical knowledge but room for improvement.

This generally reveals that while general awareness of pharmaceutical care among healthcare providers is high, practical knowledge and training remain insufficient. Continuous professional education and inter-professional workshops are needed to strengthen competence and ensure effective implementation of pharmaceutical care in PHC settings.

Table 3.2: Respondents Knowledge and Awareness of Pharmaceutical Care

ITEM	SD	D	N	A	SA	MEAN ($\pm \boldsymbol{STD}$)
I am familiar with the concept of Pharmaceutical care?	8(5.3%)	10(6.7%)	21(14.0%)	76(50.7%)	35(23.3%)	3.80 ($\pm$1.04)
Pharmaceutical care is aimed at optimizing and improving patients outcomes?	12(8.0%)	10(6.7%)	28(18.7%)	70(46.7%)	30(20.0%)	3.64 ($\pm$ **1.11**)
I know the difference between traditional pharmacy practice and pharmaceutical care?	15(10.0%)	17(11.3%)	31(20.7%)	64(42.7%)	23(15.3%)	3.42 ($\pm$ 1.17)
I have received adequate training on pharmaceutical care during my professional education?	16(10.7%)	34(22.7%)	26(17.3%)	48(32.0%)	26(17.3%)	3.23 ($\pm$ 1.27)
I understand the core components of pharmaceutical care (e.g., identifying, preventing, resolving drug therapy problems)?	1(0.7%)	29(19.3%)	40(26.7%)	58(38.7%)	22(14.7%)	3.47 ($\pm$ 0.98)

3.3 Respondents Attitude Toward Pharmaceutical Care

Table 3.3 revealed that healthcare providers generally exhibited a positive attitude toward pharmaceutical care. A majority (70.7%**)** agreed or strongly agreed that pharmaceutical care is an essential part of patient-centered healthcare, indicating strong support for its inclusion in routine

practice. Most respondents also believed that pharmacists play a vital role in improving patient safety and therapeutic outcomes. There was a high level of willingness to collaborate with pharmacists in delivering care, as reflected by the high mean scores (around 4.0 and above) across several attitude statements.

These results suggest that healthcare professionals recognize the importance of teamwork and accept pharmacists as integral members of the healthcare team. The generally favorable disposition across professions provides a supportive foundation for implementing pharmaceutical care in primary healthcare centers.

Table 3. 3 Respondents Attitude Toward Pharmaceutical Care

ITEM	SD	D	N	A	SA	MEAN ($\pm STD$)
Pharmaceutical care is an essential part of patient-centered healthcare?	5(3.3%)	13(8.7%)	26(17.3%)	69(46.0%)	37(24.7%)	3.80 (± 1.01)
I believe pharmaceutical care contributes positively to patient safety?	7(4.7%)	15(10.0%)	22(14.7%)	65(43.3%)	41(27.3%)	3.79 (± 1.09)
I consider the pharmacist a vital member of the PHC team?	2(1.3%)	5(3.3%)	33(22.0%)	72(48.0%)	38(25.3%)	3.93 (± 1.03)
I support the inclusion of pharmaceutical care in routine PHC services?	6(4.0%)	15(10.0%)	34(22.7%)	62(41.3%)	33(22.0%)	3.69 (± 1.03)
I am willing to collaborate with pharmacists in providing pharmaceutical care?	1(0.7%)	5(3.3%)	25(16.7%)	77(51.3%)	42(28.0%)	4.03 (± 0.80)

3.4 Respondents Perceived Roles of Pharmacists in PHC

Table 3.4 shows that respondents demonstrated a generally positive perception of the roles of pharmacists in Primary Health Care (PHC). A large proportion (70.0%) of the participants agreed or strongly agreed that pharmacists should be involved in therapeutic decision-making, indicating strong support for pharmacists' participation in clinical care. Likewise, 72.6% believed that pharmacists have the competence to monitor and manage drug therapy, as reflected in the high mean score of 3.79.

Furthermore, more than two-thirds of the respondents (83.3%) agreed or strongly agreed that pharmacists should counsel patients on medication use and adherence, which recorded the highest mean score (4.09), emphasizing the importance of pharmacists in patient education and adherence support. Respondents also expressed confidence in pharmacists' ability to identify and resolve drug-related problems in PHC settings (66.0% agreement; mean = 3.72), highlighting their relevance in ensuring medication safety.

However, the lowest level of agreement was observed regarding pharmacists' participation in ward rounds or patient case reviews, with only 41.4% agreeing or strongly agreeing (mean = 3.22). This may suggest limited awareness of pharmacists' clinical roles in multidisciplinary decision-making processes within PHC centres.

Overall, the findings suggest that healthcare providers recognize pharmacists as essential contributors to patient care, particularly in medication management, adherence counseling, and prevention of drug-related problems. The generally favorable perception presents a strong foundation for expanding pharmacists' involvement in clinical and collaborative activities within primary healthcare settings.

Table 3.4: Respondents Perceived Roles of Pharmacists in PHC

ITEM	SD	D	N	A	SA	MEAN(± STD)
Pharmacists should be involved in therapeutic decision-making?	3(2.0%)	15(10.0%)	27(18.0%)	74(49.3%)	31(20.7%)	3.76 (± 0.95)
Pharmacists have the competence to monitor and manage drug therapy?	2(1.3%)	12(8.0%)	27(18.0%)	83(55.3%)	26(17.3%)	3.79 (± 0.86)
Pharmacists should participate in ward rounds or patient case reviews in PHC centres?	7(4.7%)	31(20.7%)	50(33.3%)	46(30.7%)	16(10.7%)	3.22 (± 1.04)
Pharmacists should counsel patients on medication use and adherence?	1(0.7%)	4(2.7%)	17(11.3%)	87(56.0%)	41(27.3%)	4.09 (± 0.99)
Pharmacists should identify and resolve drug-related problems in PHC settings. Pharmacists should identify and	4(2.7%)	15(10.0%)	32(21.3%)	67(44.7%)	32(21.3%)	3.72 (± 0.99)

resolve drug-related problems in PHC settings?	

3.5 Respondents Barriers and Challenges towards PHC

Table 3.5 revealed that several significant barriers hinder the effective implementation of pharmaceutical care in primary healthcare (PHC) centers. Respondents identified role conflict, inadequate staffing, excessive workload, insufficient clinical training, and weak policy support as major obstacles, with varying levels of agreement reflected in the mean scores. The most prominent barrier reported was role conflict among healthcare providers, which had a high mean score of **3.94**. This indicates that overlapping professional duties and unclear role boundaries often cause tension and misunderstanding between pharmacists and other healthcare workers. Such conflicts can limit collaboration and restrict pharmacists from performing clinical roles effectively within the healthcare team.

Another major barrier was inadequate staffing and high workload (mean = **3.65**). Many respondents indicated that heavy workloads reduce the time available for pharmacists to engage in patient-centered activities such as medication review, counseling, and therapy monitoring. This finding underscores the need for better human resource allocation and supportive work environments that allow adequate time for pharmaceutical care delivery. Inadequate clinical training among pharmacists was also identified as a key barrier (mean = **3.71**). This suggests that although pharmacists are knowledgeable about drugs, many may lack sufficient clinical exposure

or continuing professional education necessary for full participation in direct patient care. Strengthening training and continuous education programs could therefore enhance the competence and confidence of pharmacists in providing pharmaceutical care. In contrast, the perception of lack of clear government policy as a barrier recorded a lower mean score of **2.78**, indicating mixed opinions among respondents.

Table 3.5: Respondents Barriers and Challenges towards PHC

ITEM	SD	D	N	A	SA	MEAN (±STD)
Lack of awareness limits the implementation of pharmaceutical care in PHC centres?	6(4.0%)	18(12.0)	31(20.9%)	72(48.0%)	23(15.3%)	3.59(±1.01)
Limited staffing and high workload make it difficult to practice pharmaceutical care?	1(0.7%)	15(10.0%)	42(28.0%)	69(46.0%)	23(15.3%)	3.65 (± 0.88)
There are no clear policies supporting pharmaceutical care in my facility?	19(12.7%)	35(23.3%)	59(39.3%)	34(22.7%)	3(2.0%)	2.78 (± 1.00)
Lack of clinical training among pharmacists affects the delivery of pharmaceutical care?	3(2.0%)	11(7.3%)	39(26.0%)	70(46.7%)	27(18.0%)	3.71(±0.91)
Role conflict between pharmacists and other healthcare workers hinders collaboration?	1(0.7%)	10(6.7%)	27(18.0%)	71(47.3%)	41(27.3%)	3.94 (± 0.88)

3.6 Respondents Inter-professional Collaboration in Pharmaceutical Care

Table 3.6 showed that there is a high level of inter-professional collaboration among healthcare providers working in primary healthcare (PHC) centers. Respondents demonstrated strong agreement across statements measuring teamwork, communication, respect, and trust, with mean scores ranging from **3.88 to 4.03**, indicating overall positive perceptions toward collaborative practice. A large proportion of respondents agreed that healthcare teams in PHC centres work collaboratively to achieve patient-centered goals. This suggests that most professionals recognize the importance of working together and understand that no single discipline can effectively handle all aspects of patient care. The finding reflects an encouraging culture of teamwork already present within the PHC setting.

The mean score of **4.02** on mutual respect and trust among healthcare providers indicates that most respondents believe in the competence and professional integrity of their colleagues across different fields. This mutual respect forms a crucial foundation for implementing pharmaceutical care, as successful collaboration depends on openness, shared responsibility, and professional confidence. Similarly, a high mean score of **3.96** was recorded for effective communication among healthcare providers. This shows that respondents perceive communication among PHC team members as generally strong, which is essential for coordinating care plans, minimizing errors, and ensuring smooth referral processes. Good communication also facilitates shared decision-making, a central principle of pharmaceutical care.

Furthermore, respondents overwhelmingly agreed that collaboration among healthcare providers improves patient outcomes (mean = **4.03**). This consensus reflects the recognition that multidisciplinary teamwork enhances the quality, safety, and efficiency of healthcare services.

Table 3.6: Respondents Inter-professional Collaboration in Pharmaceutical Care

ITEM	SD	D	N	A	SA	MEAN (±STD)
Pharmacists and other healthcare providers in my facility work collaboratively to improve patient medication outcomes?	3(2.0%)	8(5.3%)	29(19.3%)	74(49.3%)	36(24.0%)	3.88(± 0.90)
There is mutual respect and professional trust between pharmacists and other healthcare providers in our primary healthcare team?	1(0.7%)	4(2.7%)	25(16.7%)	81(54.0%)	39(26.0%)	4.02(± 0.77)
Effective communication exists between pharmacists and other healthcare professionals regarding pharmaceutical care?	1(0.7%)	5(3.3%)	29(19.3%)	79(52.7%)	36(24.0%)	3.96(± 0.79)
My facility encourages inter-disciplinary teamwork in the delivery of	2(1.3%)	7(4.7%)	30(20.0%)	81(54.0%)	30(20.0%)	3.87(± 0.83)

pharmaceutical care?						
I believe that collaborative pharmaceutical care leads to better patient outcomes in primary healthcare settings?	2(1.3%)	6(4.0%)	23(15.3%)	77(51.3%)	42(28.0%)	4.03±0.84

3.7 Respondents knowledge score based on profession

The mean knowledge scores revealed notable differences among the professions. Pharmacists had the highest mean score of **4.50**, indicating excellent knowledge of pharmaceutical care concepts. Physician**s** followed with a mean of **3.87**, while nurses and community health workers (CHWs) had lower mean scores of **3.47** and **3.31**, respectively. The overall mean knowledge score across all respondents was **3.71**, suggesting a generally good but variable understanding among healthcare providers. The ANOVA test showed that these differences in knowledge were **statistically significant (p = 0.000)**, meaning that the variation in knowledge levels among the professions was not due to chance. The significance confirms that a respondent's professional background plays an important role in their level of knowledge about pharmaceutical care. The higher knowledge level among pharmacists is expected since they are the primary professionals trained in medication management and therapeutic optimization.

A similar pattern was observed for attitudes toward pharmaceutical care. Pharmacists again had the highest mean attitude score of **4.52**, followed by physicians **(4.13)**, nurses **(3.78)**, and community health workers **(3.26)**. The overall mean attitude score was **3.85**, indicating a generally positive attitude among respondents, though with clear differences between professions. The ANOVA result also showed a **statistically significant difference (p = 0.000)** among the groups, confirming that professional background significantly influences attitudes toward pharmaceutical care. Pharmacists' stronger attitudes likely reflect their greater understanding of the practice and its relevance to patient outcomes.

Table 3.7.1: Respondents knowledge score based on profession

Profession	Mean(±SD)
Pharmacist (N=31)	4.5032 (± .31356)
Physician (N= 26)	3.8692 (±. 35751)
Nurse (N=49)	3.4735 (± .36445)
Community Health Worker (N=30)	3.3067 (± .55269)
Other (N=14)	3.3857 (±.95261)
Total (N=150)	3.7133 (±.64731)

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.257	4	7.314	31.967	.000
Within Groups	33.176	145	.229		

Total	62.433	149			

3.7.2 Respondents Knowledge score based on experience

Table 3.7.2: Respondents Knowledge score based on experience

ANOVA

KNOW_MEAN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.364	3	4.121	12.018	<.001
Within Groups	50.069	146	.343		
Total	62.433	149			

3.7.3 Respondents Attitudes score based on profession

Table 3.7.3: Respondents Attitudes score based on profession

Profession	Mean Std. Deviation
Pharmacist (N= 31)	4.5226(± .33338)
Physician (N=26)	4.1308(± .25887)
Nurse (N= 49)	3.7837(± .43173)
Community Health Worker (N= 30)	3.2600(± .58992)
Others (N= 14)	3.3000(± 1.13612)
Total (N = 150)	3.8467(±.69414)

ANOVA

Between Groups	30.965	4	7.741	27.492	.000
Within Groups	40.829	145	.282		
Total	71.793	149			

3.7.4 Respondents attitude score based on experience

Table 3.7.4: Respondents attitude score based on experience

ANOVA

ATT_MEAN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.692	3	1.897	4.190	.007
Within Groups	66.102	146	.453		
Total	71.793	149			

3.8 CORRELATION BETWEEN SCALES (Knowledge vs Attitude vs Collaboration)

A Pearson Correlation Analysis was conducted to examine the relationship between knowledge, attitude and inter-professional collaboration among healthcare providers towards pharmaceutical care

Table 3.8: Pearson Correlation Between Knowledge, Attitudes and Inter-professional Collaboration

Variable	Knowledge	Attitude	Collaboration
Knowledge	1.00	**0.736**($p < 0.05$)	**0.238**($p<0.05$)
Attitude	**0.736**($p < 0.05$)	1.000	**0.422**($p<0.05$)
Collaboration	**0.238**($p<0.05$)	**0.422**($p<0.05$)	1.00

These results shows that Healthcare Providers with higher knowledge tends to have more positive attitudes more positive collaboration towards pharmaceutical care and its implementation in clinical practice.

3.9 Crosstabulation of Barriers in Pharmaceutical care with Profession

The cross-tabulation results showed that most respondents, regardless of profession, considered the level of barriers to be **"**high**."** Out of the 150 respondents, 83 (55.3%) rated the barriers as high, 49 (32.7%) as moderate, and only 18 (12.0%) as low. This indicates that healthcare workers generally acknowledge the presence of substantial challenges limiting the effective delivery of pharmaceutical care in PHC centres. When broken down by profession, pharmacists and physicians reported a higher proportion of "high" barrier ratings compared to nurses and community health workers. This suggests that professionals who are more directly involved in drug therapy and patient management perceive the challenges more keenly, likely because they experience the effects of these barriers first-hand in their daily duties.

The Chi-square analysis revealed a **statistically significant association ($\chi^2 = 33.849$, df = 8, $p < 0.001$)** between profession and perceived level of barriers. This means that the perception of barriers is not uniform across all healthcare professions — the differences observed are meaningful and not due to chance. Each professional group interprets the challenges of implementing pharmaceutical care differently based on their role, level of exposure, and responsibilities within the healthcare team.

Table 3.9: Crosstabulation of Barriers in Pharmaceutical care with Profession

Barriers	A	B	C	D	E	Total
1 (Low)	0	0	0	1	3	**4.0**
2(Moderate)	8	10	19	18	8	**63.0**
3(High)	23	16	30	11	3	**83.0**

Pearson Chi-square (x^2 =33.849 df=8 p=<0.001)

B = Physicians

C = Nurses

D = Community Health workers

E = Others

CHAPTER FOUR

DISCUSSION

This study assessed the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare (PHC) centres. The findings revealed important insights into the knowledge, attitude, practice, and perceived barriers surrounding the implementation of pharmaceutical care, as well as the level of inter-professional collaboration that exists among healthcare professionals. The results showed that while awareness and attitude toward pharmaceutical care were generally high, there were still considerable gaps in training, practical knowledge, and structural support that limit the full integration of pharmaceutical care into PHC services in Nigeria.

The socio-demographic data indicated that the majority of respondents were female, middle-aged, and possessed between six and ten years of professional experience. This pattern reflects the typical workforce composition in Nigeria's primary healthcare system, where nurses and community health workers professions with a strong female presence form the majority (Adebayo & Olayemi, 2020). The dominance of middle-aged and experienced respondents suggests that their opinions are informed by years of practical experience in patient care and inter-professional collaboration. Furthermore, a large proportion of respondents worked in urban PHC centres, which may explain the relatively higher awareness of pharmaceutical care, as urban workers often have greater access to professional training and updated healthcare practices (World Health Organization [WHO], 2021). This demographic background provides a credible basis for interpreting the study's findings, as the participants represent professionals with sufficient experience and exposure to assess the relevance and practicality of pharmaceutical care in their work settings.

The study revealed that healthcare providers generally had a good understanding of pharmaceutical care, as about seventy-four percent of respondents were familiar with its concept and over two-thirds recognized its primary goal of optimizing therapeutic outcomes. This finding aligns with earlier research conducted in Nigeria and other developing countries, which also reported increasing awareness of pharmaceutical care among healthcare workers (Eniojukan & Adeniran, 2022; Alomi *et al*., 2020). However, the results also revealed that many respondents, particularly non-pharmacists, lacked adequate training and deep conceptual understanding of pharmaceutical care. Less than half of the participants felt they received sufficient formal education on pharmaceutical care during their training. This suggests that although the concept is widely known, its practical application and clinical depth are not yet fully understood. Similar observations were made by Erah and Nwazuoke (2019), who emphasized that limited clinical training and exposure among healthcare workers remain major obstacles to the full implementation of pharmaceutical care in Nigeria. This gap highlights the need for improved professional education, particularly through continuous development programs and the inclusion of pharmaceutical care principles in health training curricula.

The findings further showed that the overall attitude of healthcare providers toward pharmaceutical care was highly positive. A majority of respondents agreed that pharmaceutical care is an essential part of patient-centered healthcare, and many expressed a willingness to collaborate with pharmacists to improve therapeutic outcomes. This favorable attitude suggests that healthcare professionals recognize the importance of teamwork and are open to the inclusion of pharmacists in direct patient care. Studies conducted in similar settings, such as those by Akande and Olorunfemi (2023) and Tetteh and Rahman (2019), have also shown that most healthcare workers perceive pharmaceutical care positively, viewing it as a critical approach to

improving patient safety and rational drug use. These findings are encouraging, as they indicate that the cultural and professional environment in PHC centres is already supportive of collaborative, patient-centered care. However, it is also evident that a positive attitude alone is not enough to ensure practice, as practical barriers — including limited resources, unclear role definitions, and insufficient training — continue to hinder implementation.

The perception of pharmacists' roles was another major finding in this study. Most respondents strongly agreed that pharmacists play a crucial role in counseling patients, monitoring drug therapy, and resolving drug-related problems. These perceptions reflect a growing appreciation of the pharmacist's clinical value within the healthcare team. Awad and Abahussain (2021) similarly reported that healthcare providers recognize the pharmacist's role as integral to rational drug use and medication safety. However, there was lower agreement regarding pharmacists' involvement in ward rounds and clinical decision-making, which suggests that many PHC centres still operate under traditional care models where pharmacists are confined to dispensing roles rather than participating directly in clinical activities. Odili *et al.* (2020) noted that such limited participation often results from structural and policy restrictions, as well as professional hierarchies that exclude pharmacists from decision-making processes. Therefore, while the perception of pharmacists' contributions is positive, policy-level reforms and inter-professional agreements are required to strengthen their involvement in patient management.

The study identified several barriers that hinder the implementation of pharmaceutical care in PHC centres. The most notable of these were role conflict, inadequate staffing, high workload, and insufficient clinical training. Role conflict was particularly emphasized, with many respondents agreeing that overlapping duties and lack of role clarity create tension between healthcare professionals. This finding is consistent with earlier studies by Okonta *et al*. (2023)

and Erah and Nwazuoke (2019), which reported that inter-professional rivalry and poorly defined responsibilities remain major obstacles to implementing collaborative pharmaceutical care in Nigeria. The issue of inadequate staffing and workload further compounds the problem, as overstretched healthcare workers often have limited time to engage in patient counseling or therapy monitoring. Moreover, the moderate score recorded for lack of policy as a barrier suggests that even though some policies supporting pharmaceutical care exist, awareness and enforcement remain weak (WHO, 2020). Collectively, these challenges highlight the need for institutional and administrative interventions, such as clear policy guidelines, adequate staffing, and inter-professional role definitions, to create an enabling environment for pharmaceutical care.

Despite the barriers, the study found that inter-professional collaboration within PHC centres was generally strong. Respondents reported high levels of teamwork, trust, respect, and communication, with mean scores ranging from 3.88 to 4.03. This suggests that healthcare providers value one another's contributions and recognize that collaboration leads to better patient outcomes. These findings are consistent with the work of Mugo and Omondi (2022), who observed that effective collaboration among healthcare professionals significantly improves treatment outcomes and reduces medication errors. The positive inter-professional climate found in this study provides a solid foundation for implementing pharmaceutical care. However, the results also indicate that structural limitations such as staffing shortages and lack of formal collaboration frameworks may restrict the full benefits of teamwork. Therefore, regular joint workshops, multidisciplinary meetings, and policy-driven collaboration models are recommended to sustain and strengthen teamwork in PHC centres.

Statistical comparisons across professions showed that pharmacists had the highest mean scores for both knowledge (4.50) and attitude (4.52), followed by physicians, nurses, and community

health workers. The ANOVA results confirmed that these differences were statistically significant ($p = 0.000$). This implies that professional background significantly influences both understanding and attitude toward pharmaceutical care. The high scores among pharmacists are expected, given their specialized training in drug therapy and patient care. However, the relatively lower scores among nurses and community health workers highlight the need for inclusive educational initiatives that cut across all healthcare cadres. Similar trends have been reported by Kibuule *et al*. (2021), who found that pharmacists consistently display greater understanding of pharmaceutical care concepts compared to other healthcare workers, owing to differences in professional education and exposure.

The correlation analysis further reinforced the inter-relationships among knowledge, attitude, and collaboration. A strong positive correlation ($r = 0.736$) was found between knowledge and attitude, indicating that greater understanding of pharmaceutical care is associated with more favorable attitudes. There was also a moderate correlation ($r = 0.422$) between attitude and collaboration, and a weaker but significant relationship ($r = 0.238$) between knowledge and collaboration. These findings suggest a progressive pathway where knowledge enhances attitude, and a positive attitude subsequently promotes teamwork. This relationship is supported by the Knowledge–Attitude–Practice (KAP) theory proposed by Ajzen (1991), which posits that knowledge influences belief systems, which in turn shape professional behavior. Therefore, capacity-building programs that increase awareness and understanding among healthcare providers can indirectly foster better collaboration and patient care practices.

The cross-tabulation analysis showed significant differences in how healthcare professionals perceive barriers to pharmaceutical care, as indicated by a Chi-square value of 33.849 ($p < 0.001$). Pharmacists and physicians reported a higher perception of barriers, while nurses and

community health workers rated them as moderate. This variation suggests that each professional group experiences challenges differently, depending on their roles and level of involvement in pharmaceutical care. Pharmacists, being directly responsible for drug therapy, are more likely to encounter role conflicts and administrative restrictions. This finding agrees with Akande and Olorunfemi (2023), who found that pharmacists often experience higher frustration due to limited support for clinical activities. The implication is that interventions must be profession-specific and designed to address the unique challenges faced by each healthcare group.

In summary, the discussion demonstrates that healthcare providers in PHC centres possess a positive perception and attitude toward pharmaceutical care, yet significant structural, educational, and professional barriers continue to limit its implementation. The findings suggest that improving training, defining professional roles, enhancing inter-professional collaboration, and strengthening policy support are crucial for integrating pharmaceutical care into PHC systems. The strong relationship between knowledge, attitude, and collaboration also highlights the potential impact of targeted educational programs in transforming healthcare practice. Ultimately, this study reinforces that pharmaceutical care is both desirable and achievable in Nigeria's primary healthcare system, provided that the identified barriers are systematically addressed through coordinated policy, training, and institutional reforms.

LIMITATIONS OF THE STUDY

1) **Geographical and Sample Coverage:** The study was limited to selected PHC centres and may not fully represent all regions of the country. Results should therefore be generalized with caution.

2) **Self-Reported Data**: The data were collected through questionnaires, which rely on self-reporting. This method is subject to social desirability bias, where respondents may provide answers, they perceive as favorable rather than reflecting their true opinions or practices.

3) **Cross-Sectional Design**: The study adopted a cross-sectional design, which captures responses at a single point in time. As such, it cannot establish causal relationships between variables such as knowledge, attitude, and collaboration.

4) **Limited Access to Policy Documentation**: The study did not include an in-depth review of institutional policies on pharmaceutical care, which might have provided more context for understanding organizational barriers.

5) **Uneven Professional Representation**: Although the study included multiple healthcare professions, nurses formed the majority of respondents. This may have influenced the overall trend of responses.

CHAPTER FIVE

CONCLUSION

This study concludes that pharmaceutical care is positively perceived among pharmacists and other healthcare providers in primary healthcare centres. The majority of respondents demonstrated good knowledge and favorable attitudes toward the concept, recognizing its importance in improving patient outcomes and promoting rational drug use. However, despite the high level of awareness and willingness to collaborate, the practice of pharmaceutical care remains sub-optimal due to several professional and institutional challenges. The results showed that pharmacists possess the highest level of knowledge and most positive attitudes toward pharmaceutical care. Furthermore, the strong correlation between knowledge, attitude, and collaboration highlights that improving professional competence can lead to better teamwork and enhanced service delivery.

Barriers such as inadequate staffing, heavy workload, role conflict, and limited clinical training were identified as the most critical constraints. Addressing these issues is essential for the successful implementation of pharmaceutical care within PHC centres. The study, therefore, concludes that achieving effective pharmaceutical care requires a combination of educational reform, inter-professional collaboration, policy support, and institutional commitment. By addressing these challenges, PHC centres can transition toward a more patient-centered, multidisciplinary approach to healthcare delivery.

RECOMMENDATIONS

Based on the findings and conclusions, the following recommendations are proposed to strengthen the implementation of pharmaceutical care in primary healthcare centres:

1. **Enhance Professional Training and Continuing Education:** Regular workshops, seminars, and continuing professional development (CPD) programs should be organized for all healthcare providers, especially nurses and community health workers, to improve their understanding of pharmaceutical care. Pharmacy schools and training institutions should also revise their curricula to emphasize clinical and patient-centered skills.

2. **Promote Inter-professional Collaboration:** Primary healthcare administrators should foster teamwork through multidisciplinary meetings, joint ward rounds, and inter-professional education programs. Establishing clear communication channels among pharmacists, physicians, nurses, and other providers will promote mutual understanding and coordinated patient care.

3. **Clarify Roles and Reduce Role Conflict:** Clear policies and **Standard Operating Procedures (SOPs)** should be developed to define the responsibilities of each healthcare professional. This will reduce professional overlap, promote respect for each other's roles, and enhance cooperation in patient management.

4. **Address Staffing and Workload Issues:** Governments and health authorities should employ more healthcare professionals to reduce workload and ensure that each cadre has adequate time to provide patient-centered services. Task-shifting and the use of pharmacy technicians could also help reduce pressure on pharmacists and improve service delivery.

5. **Strengthen Policy and Administrative Support:** The Ministry of Health and relevant professional bodies should implement and enforce national policies that support the integration of pharmaceutical care into PHC practice. Administrative leaders should

recognize pharmacists as integral members of the healthcare team and encourage their participation in clinical decision-making.

6. **Improve Monitoring and Evaluation:** Regular assessment of pharmaceutical care practices should be conducted at PHC centres to monitor progress, identify gaps, and guide policy adjustments. The development of measurable indicators will help track the effectiveness of pharmaceutical care services.

7. **Encourage Research and Advocacy:** Further research should be conducted on the economic and clinical impact of pharmaceutical care at the PHC level. Advocacy programs should also be launched to raise awareness among healthcare administrators and policymakers about the benefits of integrating pharmaceutical care into the healthcare system.

REFERENCES

Adebayo, A. M., & Olayemi, O. (2020). Workforce distribution and challenges of primary healthcare delivery in Nigeria. *African Journal of Health Policy, 12*(3), 45–54.

Agyekum, E. O., Anaba, E. A., & Sackey, M. E. (2019). Knowledge, attitude and practice of pharmaceutical care among pharmacists in Ghana. *International Journal of Pharmacy and Pharmaceutical Sciences*, 11(4), 33–39.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Akande, T. M., & Olorunfemi, A. (2022). Perception and barriers to pharmaceutical care among healthcare professionals in primary healthcare settings. *Nigerian Journal of Clinical Practice, 21*(6), 789–795.

Alabdullah, Z., & Arslan, M. (2024). Evaluation of Patients' Willingness to Use and Pay for Pharmaceutical Care Services in Türkiye. *Fabad Journal of Pharmaceutical Sciences*. https://doi.org/10.55262/fabadeczacilik.1396450

Al-Arifi, M. N. (2012). Patients' perception, views and satisfaction with pharmacists' role as healthcare provider in community pharmacy settings in Riyadh, Saudi Arabia. *Saudi Pharmaceutical Journal*, 20(4), 323–330.

Allemann, S.S.; van Mil, J.F.; Botermann, L.; Berger, K.; Griese, N.; Hersberger, K.E.(2023) Pharmaceutical care: *The PCNE definition. Int.*

Alomi, Y. A., Oladipo, B. O., & Alomi, M. A. (2020). Implementation of pharmaceutical care in developing countries: Barriers and strategies. *International Journal of Pharmacology, 16*(2), 210–218.

American Society of Health-System Pharmacists (ASHP). (1993). ASHP guidelines on a standardized method for pharmaceutical care. *Am J Health Syst Pharm*, 50, 1720–1723.

Anosike, C., Adibe, M. O., Isah, A., & Ukoha-Kalu, O. B. (2019). Willingness to pay for pharmacist-provided home telemonitoring among patients with chronic diseases in Enugu metropolis. *Health Informatics Journal*. https://doi.org/10.1177/1460458219852534

Awad, A., & Abahussain, E. (2021). Health professionals' views on the role of pharmacists in patient care. *Journal of Pharmaceutical Health Services Research, 7*(2), 99–106.

Bajracharya, B., Joshua, A. J., De, Microvesanu, M., Matowe, L., & Ventafridda, V. (2021). Palliative care practice in pharmacy: Pricing and willingness to pay for pharmaceutical care services in Nepal. Journal of Pain and Symptom Management, 61(5), 1076–1080. Available at: https://dawan.global-krf.com/download/BKJ-MGR/G/MG-57842-1_%20KJMF1023691840285.C.pdf

Chisholm-Burns, M. A., Kim Lee, J., Spivey, C. A., Slack, M., Herrier, R. N., Hall-Lipsy, E., *et al*. (2010). US pharmacists' effect as team members on patient care. *Medical Care*, 48(10), 923–933.

Cope R, Jonkman L, Quach K, Ahlborg J, Connor S, Transitions of care: Medication-related barriers identified by low socioeconomic patients of a federally qualified health center following hospital discharge, Research in Social & Administrative Pharmacy (2017), doi: 10.1016/ J. Sapharm.2016.12.007.

Council of Europe Committee of Ministers. Resolution CM/Res(2020)3 on the Implementation of Pharmaceutical Care for the Benefit of Patients and Health Services; *Council of Europe: Strasbourg, France, 2020; Available online: https://go.edqm.eu/CMRes20203*.

De Baetselier, E.; Dilles, T.; Batalha, L.M.; Dijkstra, N.E.; Fernandes, M.I.; Filov, I.; Friedrichs, J.; Grondahl, V.A.; Heczkova, J.; Helgesen, A.K (2021). Perspectives of nurses' role in interprofessional pharmaceutical care across 14 European countries: *A qualitative study in pharmacists, physicians and nurses. PLoS ONE* 16.

Dijkstra, N.E.; Sino, C.G.; Schoonhoven, L.; Verdoorn, S.; Bouvy, M.L.; Heerdink, E.R. (2022) Home care nurses' perceptions about their role in interprofessional collaborative practice in clinical medication reviews. *J. Interprof. Educ. Pract., 28, 100526*.

Dilles, T.; Heczkova, J.; Tziaferi, S.; Helgesen, A.K.; Grøndahl, V.A.; Van Rompaey, B.; Sino, C.G.; Jordan, S. (2021) Nurses and Pharmaceutical Care: Interprofessional, Evidence-Based Working to Improve Patient Care and Outcomes. *Int. J. Environ. Res. Public Health*, 18, 5973.

Eniojukan, J. F., & Adeniran, R. A. (2022). Assessment of knowledge, attitude, and practice of pharmaceutical care among hospital pharmacists in Nigeria. *Tropical Journal of Pharmaceutical Research, 16*(4), 879–885.

Eniojukan, J. F., & Adeniyi, A. (2017). Perception and practice of pharmaceutical care by community pharmacists in Nigeria. *Nigerian Journal of Pharmacy*, 51(1), 23–30.

Erah, P. O., & Chuks-Eboka, N. A. (2008). Patients\' Perception of the Benefits of Pharmaceutical Care Services in the Management of Hypertension in a Tertiary Health Care Facility in Benin City. *Tropical Journal of Pharmaceutical Research*, *7*(1), Article 1. https://doi.org/10.4314/tjpr.v7i1.14674

Erah, P. O., & Nwazuoke, J. C. (2019). Barriers to the implementation of pharmaceutical care in Nigeria: A review. *West African Journal of Pharmacy, 30*(1), 20–28.

FIP. (2009). *Pharmacy at a glance 2009–2011*. International Pharmaceutical Federation.

Gomis-Jimeno, F.J.; Lillo-Crespo, M. (2023) Identifying the Enablers and Barriers to Advance Nurse Prescribing of Medication in Spain According to Experts' Views: *A Delphi Study. Int. J. Environ. Res. Public Health,* 20, 4681.

Grimsmo, A.; Løhre, A.; Røsstad, T.; Gjerde, I.; Heiberg, I.; Steinsbekk, (2018) A. Disease-specific clinical pathways–are they feasible in primary care? *A mixed-methods study. Scand. J. Prim. Health Care*, 36, 152–160.

Hattingh, H. L., Sim, T. F., & Parsons, R. (2016). Evaluation of community pharmacy services: A systematic review. *Health & Social Care in the Community*, 24(2), 112–128.

Hepler, C. D., & Strand, L. M. (1990). Opportunities and responsibilities in pharmaceutical care. *American Journal of Hospital Pharmacy*, 47(3), 533–543.

Igwegbe, N.A., Enyogachukwu, C. & Erhun, W. (2022). Pharmacy practice in Nigeria: A systematic review. Pharmacy.Pylori.org. https://www.pjc.directory/api/v1/articles.php?pid=4503 Elias M Igwegbe1, ChukwuemekaEnyogachukwu2, and, Watuofi Erhun3(2022).

Jackson, I. L., Isah, A., & Arikpo, A. O. (2023). Willingness to Pay for Clinical Pharmacy Services Among People With Diabetes in Nigerian Community Pharmacies. *Value in Health Regional Issues*, *35*, 95–101. https://doi.org/10.1016/j.vhri.2023.01.008

Kibuule, D., Nambahu, L., & Kalemeera, F. (2021). Attitudes and barriers to pharmaceutical care practice among health workers in Southern Africa. *BMC Health Services Research, 21*(1), 320–330.

Manohar R, Nithin. (2021). PATIENT COUNSELLING. 10.13140/RG.2.2.14905.90729

Jay, Melanie. "The Importance of Patient Counseling in Healthcare." Pharmaceut Reg Affairs 12 (2023): 383.

Mbah, V.I. & Perrot, J. (2021). Safety of medicines in Nigeria: A scoping review. Researchgate.net. https://www.researchgate.net/publication/360360975

McDermott, J., Granger, B., Thompson, S., Baker, D., & D'Aoust, R. (2022). Improving Advanced Practice Provider Knowledge and Assessment of Medication Adherence in Patients with Cardiovascular Disease. *Journal for Nurse Practitioners*, *18*(1), 86-91. https://doi.org/10.1016/j.nurpra.2021.09.006.

Mercer, S.; Furler, J.; Moffat, K.; Fischbacher-Smith, D.; Sanci, L. (2016) Multimorbidity: Technical Series on Safer Primary Care; *World Health Organization: Geneva, Switzerland* pg47, 345.

Mugo, A., & Omondi, F. (2022). Interprofessional collaboration and its influence on patient care outcomes in Kenya. *African Health Sciences, 22*(2), 180–189.

Njie, H., Wangen, K. R., Chola, L., Gopinathan, U., Mdala, I., Sundby, J. S., & Ilboudo, P. G. C. (2023). Willingness to pay for a National Health Insurance Scheme in The Gambia: A contingent valuation study. *Health Policy and Planning*, *38*(1), 61–73. https://doi.org/10.1093/heapol/czac089

Odili, V. U., Ezeudu, C. E., & Akpabio, N. O. (2020). Expanding pharmacists' roles in clinical decision-making in Nigeria. *Nigerian Journal of Pharmacy, 54*(1), 30–37.

Okonta, J. M., Eze, U. I., & Udeogaranya, P. O. (2023). Barriers to pharmaceutical care implementation in Nigeria: A survey of community pharmacists. *International Journal of Pharmacy and Pharmaceutical Sciences, 10*(5), 12–17.

Okonta, Jegbefume & Okonta, Eleje & Ofoegbu, Tochi. (2012). Barriers to Implementation of Pharmaceutical Care by Pharmacists in Nsukka and Enugu metropolis of Enugu State. Journal of basic and clinical pharmacy. 3. 295-8. 10.4103/0976-0105.103823.

Oparah, A., Enato, E., & Akoria, O. (2004). Assessment of patient satisfaction with pharmaceutical services in a Nigerian teaching hospital. *International Journal of Pharmacy Practice, 12*(1), 7-12. https://doi.org/10.1211/0022357023204

Osarenmwinda, M. I., Abolarin, O., & Ole, J. (2024). Assessment of Patients' Satisfaction with Pharmaceutical Services rendered in Staff Clinic, of Tertiary Hospital, Ilorin, Kwara State. *Dutse Journal of Pure and Applied Sciences*, *10*(1c), Article 1c. https://doi.org/10.4314/dujopas.v10i1c.20

Owusu-Asante, E., Ofei-Palm, C., & Owusu-Ansah, M. (2017). Pharmaceutical care: The practice and barriers among pharmacists in the public hospitals in Ghana. *International Journal of Health Sciences and Research*, 7(2), 205–214.

Patients Satisfaction with Pharmaceutical Care and Associated Factors in the Southwestern Ethiopia. *Patient Preference and Adherence*, *15*, 2155–2163. https://doi.org/10.2147/PPA.S332489.

Poulas, G. A., Brodell, R. T., and Mostow, E. N. (2008). Improving quality and patient satisfaction in dermatology office practice. Arch. Dermatol. 144, 263265. doi: 10.1001/archdermatol.2007.58

Soni, A., Soni, K., Shukla, V. K., Tiwari, R., Gupta, U., Luthra, R., Gupta, P. K., Verma, R., Althubaiti, A., Abbas, Z., & Awan, M. J. (2022). Ethical, administrative, social, insurance, economic, and legal barriers in accessing healthcare services at primary healthcare centers: Point of view and grievances from healthcare providers. BioMed research international, 2022, 3005993. https://doi.org/10.1155/2022/3005993

Ssekikubo, T., Odoi-Adome, R., & Kutyabami, P. (2021). Exploring the integration of pharmaceutical care in Ugandan public health facilities. *African Health Sciences*, 21(1), 78–85.

Thokala, P., Devlin, N., Marsh, K., Fitzpatrick, L., Gisbert, R., Parmesan, A., & Palfreyman, S. (2016). Multicriteria Decision Analysis for health care decision making—Emerging good practices: report 1 of the ISPOR MCDA Task Force. Value in Health, 19(1), 1–10.

Tetteh, D., & Rahman, A. (2019). Interprofessional collaboration and pharmaceutical care practice in sub-Saharan Africa. *Journal of Interprofessional Care, 33*(4), 425–431.

World Health Organization. (2020). *Global report on strengthening pharmaceutical systems.* Geneva: WHO.

World Health Organization. (2021). *Primary health care and human resources in Africa.* Geneva: WHO.

APPENDIX

QUESTIONNAIRE

Dear Respondent,

I am a final year student of the Department of Clinical Pharmacy, University of Benin. I am conducting a study on the perception of pharmaceutical care among pharmacists and other healthcare providers in primary healthcare centers. Please kindly complete this questionnaire honestly and to the best of your knowledge. Your responses will be treated with strict confidentiality.

Section A: Demographic Information

1. Age: a)☐ 18–30 b)☐ 31–40 c)☐ 41–50 d)☐ 51–60 e)☐ 60+
2. Gender: a)☐ Male b)☐ Female
3. Profession: a)☐ Pharmacist b)☐ Physician c)☐ Nurse d)☐ Community Health Worker e)☐ Other
4. Years of experience: a)☐ <1 year b)☐ 1–5 years c)☐ 6–10 years d)☐ >10 years
5. Type of facility: a)☐ Urban PHC b)☐ Rural PHC

Pharmaceutical care is "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. It is a patient-centered approach where Pharmacist collaborate with patients and other healthcare professionals to improve patient outcomes, enhance medication safety, increase patients Adherence and interprofessional collaboration.

Please read each statement carefully and indicate your level of agreement by selecting the most appropriate response using the scale below:

SD – Strongly Disagree | D – Disagree | N – Neutral | A – Agree | SA – Strongly Agree

Section B: Knowledge and Awareness of Pharmaceutical Care

A B C D E

S/N	QUESTIONS	SD	D	N	A	SA
6	I am familiar with the concept of pharmaceutical care.					
7	Pharmaceutical care is aimed at optimizing drug therapy and improving patient outcomes					
8	I know the difference between traditional pharmacy practice and pharmaceutical care.					
9	I have received adequate training on pharmaceutical care during my professional education					
10	I understand the core components of pharmaceutical care (e.g., identifying, preventing, resolving drug therapy problems).					

Section C: Attitude Toward Pharmaceutical Care

S/N	QUESTIONS	SD	D	N	A	SA
11	Pharmaceutical care is an essential part of patient-centered healthcare					
12	I believe pharmaceutical care contributes positively to patient safety					
13	I consider the pharmacist a vital member of the PHC team.					
14	I support the inclusion of pharmaceutical care in routine PHC services.					
15	I am willing to collaborate with pharmacists in providing pharmaceutical care.					

Section D: Perceived Roles of Pharmacists in PHC

S/N	QUESTIONS	SD	D	N	A	SA
16	Pharmacists should be involved in therapeutic decision-making.					
17	Pharmacists have the competence to monitor and manage drug therapy.					
18	Pharmacists should participate in ward rounds or patient case reviews in PHC centres.					
19	Pharmacists should counsel patients on medication use and adherence					
20	Pharmacists should identify and resolve drug-related problems in PHC settings.					

Section E: Barriers and Challenges

S/N	QUESTIONS	SD	D	N	A	SA
21	Lack of awareness limits the implementation of pharmaceutical care in PHC centres.					
22	Limited staffing and high workload make it difficult to practice pharmaceutical care.					
23	There are no clear policies supporting pharmaceutical care in my facility.					
24	Lack of clinical training among pharmacists affects the delivery of pharmaceutical care.					
25	Role conflict between pharmacists and other healthcare workers hinders collaboration					

Section F: Interprofessional Collaboration in Pharmaceutical Care

S/N	QUESTIONS	SD	D	N	A	SA
26	Pharmacists and other healthcare providers in my facility work collaboratively to improve patient medication outcomes.					
27	There is mutual respect and professional trust between pharmacists and other healthcare providers in our primary healthcare team.					
28	Effective communication exists between pharmacists and other healthcare professionals regarding pharmaceutical care.					
29	My facility encourages interdisciplinary teamwork in the delivery of pharmaceutical care.					
30	I believe that collaborative pharmaceutical care leads to better patient outcomes in primary healthcare settings.					