ASSESSMENT OF CURRENT PHARMACEUTICAL CARE PRACTICES BY COMMUNITY PHARMACISTS

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A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF CLINICAL PHARMACY & PHARMACY PRACTICE, FACULTY OF PHARMACY, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF PHARMACY (B. PHARM) AND DOCTOR OF PHARMACY (PHARM. D) DEGREE IN PHARMACY

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CERTIFICATION

This is to certify that Aisosa Ehonwa with matriculation number PHA1707030 completed the project research study “Assessment of Current Pharmaceutical Care Practices by Community Pharmacists” as a requirement for the award of the Doctor of Pharmacy (Pharm. D) degree in the department of Clinical Pharmacy & Pharmacy Practice, Faculty of Pharmacy, University of Benin.

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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 and to my family for their unwavering love, support, and encouragement throughout my academic journey. Their belief in me has been my greatest motivation.

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TABLE OF CONTENTS

COVER PAGE i

TITLE PAGE ii

CERTIFICATION iii

DEDICATION iv

ACKNOWLEDGEMENT v

TABLE OF CONTENTS vi

ABSTRACT ix

CHAPTER ONE 1

INTRODUCTION 1

1.1. Background 1

1.2. Definition of pharmaceutical care 2

1.3. Historical Development of Pharmaceutical Care 5

1.4. Steps in pharmaceutical care process 7

1.4.1. Establish a professional/therapeutic relationship 8

14.2. Collect patient specific subjective and objective data 8

1.4.3. Evaluate data and identify health and drug therapy problems 9

1.4.4. Develop and implement pharmaceutical care plans (Pharmacist's interventions) .. 9

1.4.5. Evaluate the interventions and follow-up 10

1.4.6. Documentation 10

1.5. Milestones in the integration of pharmaceutical care into practice 11

1.5.1. Pharmacists' attitudes 11

1.5.2. Setting 11

1.5.3. Public attitudes and expectations 12

1.5.4. Lack of standards 12

1.5.5. Systems-related barriers 12

1.6. The role of community pharmacists in patient-centred care 13
1.6.1. Medication management 14
1.6.2. Patient education and empowerment 14
1.6.3. Community engagement and public health 15
1.7. Evolution of pharmaceutical care in community pharmacy 15
1.7.1. Regulatory framework 16
1.7.1.1. Role of regulatory bodies 16
1.7.1.2. Compliance with standards and guidelines 17
1.7.2. Organizational culture and policies 17
1.7.2.1. Influence of the pharmacy setting: 17
1.7.2.2. Policies supporting or hindering pharmaceutical care delivery 17
1.7.3. Professional training and development 18
1.7.3.1. Impact of continuing education 18
1.7.3.2. Integration of pharmaceutical care principles in pharmacy curricula 18
1.8. Current pharmaceutical care practices among community pharmacists 18
1.8.1. Medication therapy management services 19
1.8.2. Patient education and counselling 19
1.8.3. Medication adherence programs 19
1.9. Common challenges faced by community pharmacists 20
1.9.1. Time constraints 20
1.9.2. Reimbursement issues 20
1.9.3. Lack of Collaboration with Other Healthcare Professionals 21
1.10. Statement of the Problem 21
1.11. Justification of study 22
1.12. Objectives of Study 22
CHAPTER TWO 24
2.0. METHODS 24

2.1. Study setting 24
2.2. Study design 24
2.3. Study population 24
2.3.1. Inclusion Criteria: 24
2.3.2. Exclusion Criteria: 24
2.4. Sampling technique and sample size 25
2.5. Study Instrument 25
2.6 Data collection 25
2.7. Method of data analysis 26
CHAPTER THREE 27
3.0. RESULTS 27
3.1. Respondents Demographics 27
3.2. Pharmaceutical Care Practices 29
3.3. Patient Education 31
CHAPTER FOUR 33
4.0. DISCUSSION 33
4.1. Pharmaceutical Care Practices 33
4.2. Patient Education 34
CHAPTER FIVE 35
5.1. Conclusion 35
REFERENCES 36
APPENDIX 45

ABSTRACT

Background: Pharmaceutical care is increasingly vital in community pharmacies, where pharmacists play a key role in patient care. Healthcare reforms and legislative initiatives have driven the shift towards patient-centered care in community pharmacy. Evaluating current practices is crucial for enhancing patient outcomes and continuous assessment ensures alignment with evolving patient needs and standards.

Objectives: To assess the current pharmaceutical care practices by community pharmacists and evaluate the extent of patient education practices conducted by study participants in their establishments.

Methods: In a cross-sectional observational design to evaluate pharmaceutical care practices among community pharmacists in Benin City, a simple random sampling was employed to select 239 participants. Data was collected through a structured questionnaire and analyzed descriptively using Microsoft Excel 2016.

Results: As much as 93.7% of community pharmacists in Benin City reported having a counseling section in their pharmacies. 95.0% actively involved patients in medication management. However, only 45.6% had access to electronic health records, and just 20.9% conducted medication reviews regularly. Concerningly, less than half (49.4%) felt very confident about their knowledge of pharmaceutical care principles. Despite these challenges, over 85% educated patients on the importance of adherence to drug therapy, showcasing their commitment to improving patient outcomes. However, only 54% always provided medication counseling, indicating potential gaps in patient education. Furthermore, while 91.2% felt adequately trained to identify and resolve medication-related problems, only 63.6% considered patients' preferences when providing pharmaceutical care.

Conclusion: The study reveals varying levels of pharmaceutical care practices and patient education among community pharmacists, highlighting the importance of continuous training and patient-centered approaches for optimal healthcare outcomes.

Keywords: Pharmaceutical care, Community pharmacists, Patient education, Medication counseling, Medication review, electronic health records, Patient adherence, Healthcare outcomes, Continuous training, Patient-centered approach.

CHAPTER ONE

INTRODUCTION

1.1.Background

Pharmaceutical care, a patient-centred approach to pharmacy practice, has evolved as an important component of healthcare delivery, especially in community pharmacy settings. It stresses the pharmacist's involvement in improving drug therapy outcomes, patient wellbeing, and overall health-related quality of life. In recent years, as healthcare systems around the world have evolved, the role of community pharmacists monitoring and improving pharmaceutical care practices has gained attraction (Spanakis *et al*., 2019).

Historically, community pharmacists dispensed drugs and offered minimal medication advice (Messerli *et al*., 2016). However, as drug regimens get more complex, the prevalence of chronic diseases rises, and the scope of pharmacy services expands, community pharmacists' roles have widened to include a greater range of patient care tasks. These activities include drug therapy management, medication reconciliation, adherence monitoring, health screenings, vaccines, and health promotion campaigns (Mossialos *et al*.,2015).

The transition to patient-centred care in community pharmacy practice has been bolstered by a number of healthcare reforms and legislative initiatives aiming at increasing healthcare quality, lowering healthcare costs, and improving patient outcomes (Lancaster *et al*., 2018). Pharmaceutical care practices are closely aligned with these goals, focusing on optimizing medication usage, eliminating medication errors, lowering adverse drug events, and developing collaborative relationships between pharmacists, patients, and other healthcare providers.

Despite increased awareness of the value of pharmaceutical care in community pharmacy practice, there is still a need for continual assessment and evaluation of present methods to guarantee their effectiveness and alignment with changing patient requirements and healthcare standards (Badro *et al*., 2020). This assessment looks at various aspects of pharmaceutical care delivery, such as the scope of services provided, the quality of patient interactions, the integration of technology, the impact on patient outcomes, and the identification of barriers and facilitators to practice implementation.

Community pharmacists can perform a full review of current pharmaceutical care practices, providing healthcare stakeholders with important insights into areas of strength and possibilities for development (Latif, 2018). This knowledge can be used to establish targeted interventions, legislative reforms, and educational activities to improve the quality and impact of pharmaceutical care services in community pharmacy settings, resulting in better patient outcomes and healthcare delivery.

1.2.Definition of pharmaceutical care

The conventional understanding of "pharmaceutical care" has often been attributed to Hepler and Strand's definition, which defines it as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient’s quality of life" (Hepler and Strand, 1990). However, as early as 1990, there has been ongoing debate surrounding various aspects of this definition and differing interpretations of how it aligns with the professional mission of pharmacists (PCNE, 2013). This definition of pharmaceutical care often did not explicitly designate the pharmacist as the sole provider of pharmaceutical care. Instead, it includes the pharmacy team or other healthcare professionals in the provision of pharmaceutical care services. However, the underlying implication in these definitions is that pharmacists are typically expected to be the primary responsible providers of pharmaceutical care due to their specialized expertise in medications. Pharmaceutical care involves the

pharmacist's responsibility for direct care of the patient, which includes assessing the patient's medication needs, formulating and implementing medication therapy plans, monitoring and modifying the therapy, and managing patient responses to therapy (Cipolle et al., 2012). Pharmaceutical care encompasses the process through which a pharmacist cooperates with patients and other professionals in designing, implementing, and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient (Strand et al., 1997).

While pharmacy staff such as pharmacy technicians or nurses may also participate in pharmaceutical care services, it's essential to recognize that their education and training may vary significantly between countries. As a result, they may not always provide the same level of care as pharmacists. It's important to acknowledge that pharmacists are not the only professionals involved in medication-related care, and a multidisciplinary approach is often preferred.

In a multidisciplinary healthcare setting, each collaborator should focus on their respective specialty, and their contributions should not be subsumed under a single definition. For instance, care provided by a nurse regarding medications would typically be termed "nursing care," defined as "care given to patients by nursing service personnel" (MeSH term since 1966). The definition of pharmaceutical care by the Pharmaceutical Care Network Europe (PCNE) highlights the collaborative nature of pharmaceutical care, emphasizing the contribution of pharmacists while acknowledging the involvement of other healthcare providers. This approach implies that pharmaceutical care involves collaboration between different contributors and does not exclude any other healthcare provider who may play a role in patient care related to medications (PCNE, 2013).

The provision of pharmaceutical care should always be tailored to meet the individual needs of each person, rather than targeting populations or society as a whole. This personalized

approach is a fundamental concept of pharmaceutical care. The term "care" denotes a process that extends beyond simple dispensing or one-off services, requiring follow-up to assess the impact of the provided care. This distinguishes pharmaceutical care from routine counselling at the time of dispensing or other standalone pharmaceutical services, such as vaccination programs.

Optimizing the use of medicines is a critical responsibility of pharmacists, particularly considering the increasing accessibility of medicines worldwide (Holloway and van Dijk, 2011). Despite this accessibility, ensuring the responsible use of medications remains a significant challenge, as highlighted by the World Health Organization (WHO) and IMS reports (WHO, 2012; Aitken and Gorokhovich, 2012). Pharmacists play a crucial role in this optimization process, which involves not only considering system-based elements such as indication, safety, and effectiveness but also addressing patient-centred elements such as adverse drug events, handling difficulties, or management of dosing regimens. Even the decision not to take a medicine can be viewed as optimizing medicines use during the pharmaceutical care process, particularly if it benefits the recipient's health.

The ultimate goal of pharmaceutical care is to improve health outcomes for individuals receiving the service. Pharmacists should consider every aspect of the recipient's well-being, including their quality of life. This broader perspective extends beyond previous definitions, such as the Hepler and Strand definition from 1990, which exclusively focused on quality of life (. Establishing measurable health outcomes is essential for assessing and quantifying pharmaceutical care services through robust research studies. Evidence demonstrating validated services that improve health outcomes can help legitimize the pharmacist's role as a competent healthcare provider, particularly in the face of criticism from other healthcare professionals (van Mil and Fernandez-Llimos, 2013).

1.3.Historical Development of Pharmaceutical Care

The evolution of pharmacy practice has been characterized by a gradual transition from a product-centred to a patient-centred orientation, with stages unfolding over time rather than through abrupt changes occurring simultaneously across the profession and globally (Essack, 2020).

Initially, pharmacy functioned primarily as a manufacturing industry, with pharmacists serving as both producers and providers of drugs. This era, reminiscent of a cottage industry, saw pharmacists concocting patent medicines according to proprietary recipes, which they then prescribed and dispensed directly to patients from their own dispensaries. In this early stage, pharmacists held a multifaceted role akin to today's pharmaceutical industry, drugstore, and primary care provider, offering not only medications but also advice and guidance on their selection and use, reflecting a clearly defined social value (Higby and Urick, 2021).

However, the post-World War II era, marked by the industrial revolution, witnessed a significant shift in pharmaceutical manufacturing towards mass production by large-scale industry. Consequently, pharmacists transitioned from drug manufacturing to compounding, focusing on the mixing of pre-manufactured medications according to prescription and guiding patients on self-care practices (Higby and Urick, 2021).

In the subsequent stage, which followed the introduction of the 1951 Durham Humphrey Amendment to the 1938 US Food, Drug, and Cosmetic Act, pharmacists' roles diverged depending on their practice setting (Flowers and McCoul, 2022). The amendment restricted the legal status of medications to prescription-only, limiting the scope of who could prescribe and advise on medication use. As a result, community pharmacists became primarily involved in dispensing medications, serving as distribution channels for the pharmaceutical industry. Conversely, hospital pharmacists assumed a support role in managing drug products,

engaging in activities such as distribution, management, large-volume compounding, nursing education, and participation in Pharmacy and Therapeutics Committees. However, in both community and hospital practice settings, the emphasis remained predominantly on the product rather than the patient (Higby and Urick, 2021).

The Clinical Pharmacy model, which originated in the United States during the 1960s, marks a significant shift towards patient-oriented pharmacy practice (Saghir *et al*., 2020). In this model, community pharmacists resumed their role in providing drug information, offering advice on medication use, and counselling patients on topics such as generic substitution and non-prescription drug use. While physicians retained ultimate responsibility for medication therapy outcomes, hospital pharmacists played a crucial supporting role, drawing on their specialized knowledge of medication action and use.

The adoption of the Clinical Pharmacy model signalled the re-emergence of patient-oriented pharmacy, with pharmacists assuming clinical functions such as:

- Interpreting, questioning, and validating drug orders.
- Monitoring patients' drug therapy.
- Managing selected drug therapies (e.g., aminoglycosides, heparin, aminophylline, parenteral nutrition).
- Detecting and reporting drug allergies and adverse drug reactions.
- Providing drug-use education.
- Answering drug information requests.
- Conducting patient reviews.
- Participating in patient care rounds.

- Performing drug use review and patient pharmaceutical care model functions.

This stage in the evolution of pharmacy practice marked the beginning of hospital pharmacists' recognition for their social value. Pharmacists were not just performing functions but taking responsibility for the functions they performed and those under their supervision.

The subsequent stage in the transition of pharmacy practice involved the era of taking responsibility for clinical functions such as disease management, with the drug product serving as the foundation. Hepler and Strand's, (1990) definition of pharmaceutical care encapsulates this concept, emphasizing the responsible provision of drug therapy to achieve specific outcomes that improve a patient's quality of life. Pharmacists collaborate with patients and other healthcare professionals to design, implement, and monitor care plans aimed at preventing and resolving drug-related problems (DRPs).

The International Pharmaceutical Federation (FIP) statement in 1998 further elaborates on pharmaceutical care as the responsible provision of pharmacotherapy to achieve outcomes that enhance a patient's quality of life (Awaisu and Mottram, 2018). This collaborative process aims to prevent, identify, and solve medicinal product and health-related problems, emphasizing continuous quality improvement in the use of medicinal products. Pharmacists are expected to apply a higher level of drug knowledge, clinical skill, and independent judgment, accepting the burden of responsibility in their practice.

1.4.Steps in pharmaceutical care process

A stepwise approach is crucial for ensuring consistency and facilitating the adoption of pharmaceutical care in a practice setting. Cipolle *et al*. (1998) defined pharmaceutical care as a nine-step process, while Strand identified three basic components: assessment of patient needs, development of a care plan, and follow-up evaluation (Santana etal., 2018). Although

these frameworks may vary slightly, they both emphasize the importance of a systematic approach to patient care (Oparah *et al*., 2020).

1.4.1. *Establish a professional/therapeutic relationship*

The first step in pharmaceutical care is to establish a professional and therapeutic relationship with the patient. This patient-centred approach requires pharmacists to interact with one patient at a time, demonstrating empathy and concern for the patient's well-being. By greeting the patient warmly and expressing genuine interest in their health, pharmacists can initiate a therapeutic relationship. As this relationship develops, patients begin to trust the pharmacist and grant them authority to take responsibility for their care, often referring to them by name or as "my pharmacist."

14.2. *Collect patient specific subjective and objective data*

The next step involves collecting patient-specific subjective and objective data. The pharmacist relies on various sources of information, including patient interviews, discussions with other caregivers, review of medical records, laboratory reports, and physical assessments. By employing skills such as inspection, palpation, percussion, and auscultation as appropriate, pharmacists gather comprehensive data to inform their assessment of the patient's health status and medication-related needs.

This data collection process yields both subjective information, such as the patient's symptoms, concerns, and medication history, as well as objective data, including vital signs, laboratory results, and physical examination findings. By gathering this information systematically, pharmacists can develop a comprehensive understanding of the patient's health status and identify any medication-related problems or needs that require intervention.

1.4.3. *Evaluate data and identify health and drug therapy problems*

To effectively evaluate data and identify health and drug therapy problems, a systematic approach is essential. This process requires critical thinking and problem-solving skills. The practitioner compares problems and treatments to ensure that each drug is appropriately managing a condition and that every condition is being managed with or without a drug.

Health problems may encompass various aspects, such as medical or psychiatric diagnoses, patient complaints, abnormal laboratory test results, observations of abnormal signs or symptoms, social or financial situations, psychological concerns, or physical limitations/disabilities. Similarly, drug therapy problems should be identified and briefly described, considering factors such as indication, safety, efficacy, compliance, and appropriateness of dosage regimen and form.

Once identified, the severity of problems is assessed, and they are prioritized to determine the need for immediate intervention, intervention at a later time, or no intervention. The pharmacist should provide sufficient evidence, such as primary literature, supporting the existence of a drug-related problem and the therapeutic principles used as a basis for solving it.

1.4.4. *Develop and implement pharmaceutical care plans (Pharmacist's interventions)*

The next step involves developing and implementing pharmaceutical care plans, also known as pharmacist interventions. These plans aim to solve the identified problems effectively. The written plan of action should define patient-specific goals clearly, ensuring they are achievable, measurable, and consistent with the pharmacist's professional responsibilities. Examples of patient-specific goals include maintaining blood pressure below a certain threshold, demonstrating compliance with medication therapy, and understanding the disease state.

Pharmacist interventions can be categorized into two major types: patient-focused and drug-focused interventions. Patient-focused interventions may include assisting with compliance issues, providing patient education and counselling, monitoring the patient's progress, implementing non-drug therapy, and referring the patient to other healthcare professionals. Drug-focused interventions involve actions such as adding a new drug, discontinuing medication, changing drug, dose, interval, duration, or dosage form, and establishing monitoring parameters.

Before implementing pharmaceutical care plans, pharmacists should ensure that patients have all the necessary supplies (i.e., drugs and information) to comply with the plan effectively. This comprehensive approach to pharmaceutical care planning and implementation ensures that patients receive optimal care tailored to their individual needs and circumstances.

1.4.5. *Evaluate the interventions and follow-up*

To ensure the effectiveness of pharmaceutical care, the pharmacist must evaluate interventions and follow up on patient outcomes. Pharmaceutical care is outcome-oriented, encompassing clinical, humanistic, and economic aspects. The pharmacist assesses whether their intervention has improved patient outcomes and determines if modifications to care plans are necessary. This process of follow-up provides valuable insights and lessons for future patient care.

1.4.6. *Documentation*

Documentation of pharmaceutical care activities is integral throughout the entire process. It serves as evidence of actions taken, creates an audit trail, and ensures continuity of care, especially when another pharmacist is on duty. Additionally, documentation facilitates practice research by accumulating data for analysis. Pharmacists may maintain different types of records, including pharmaceutical care patient charts, personalized pharmaceutical care

plans for patients, and practice management reports. These records can be kept manually, electronically, or through a combination of both methods. Cipolle *et al*. (1998) highlighted the importance of documentation, emphasizing its role in supporting effective patient care and practice management.

1.5. Milestones in the integration of pharmaceutical care into practice

1.5.1. *Pharmacists' attitudes*

One of the primary barriers to implementing pharmaceutical care lies within the attitudes of pharmacists themselves. Factors such as knowledge, skills, and attitudes towards traditional dispensing can significantly impact the adoption of pharmaceutical care practices. Some pharmacists may feel more inclined towards the traditional product-oriented nature of pharmacy practice, while others may lack the necessary understanding or interest in pharmaceutical care. Time constraints, inertia, and personal energy levels also play a role in shaping pharmacists' readiness to embrace pharmaceutical care as a core aspect of their practice (Oparah *et al*., 2020).

1.5.2. Setting

The practice of pharmaceutical care can be influenced by the setting in which it is implemented. While the concept of pharmaceutical care is practitioner-driven, certain settings may facilitate or hinder its execution. For instance, community pharmacies may lack essential resources such as patient data access or designated counselling areas, which can pose significant barriers to the delivery of pharmaceutical care services. Additionally, constraints such as the absence of trained supportive personnel or collaboration with prescribing physicians can further impede the implementation of pharmaceutical care initiatives (Oparah *et al*., 2020).

1.5.3. *Public attitudes and expectations*

Public perceptions and expectations of pharmacists also play a crucial role in determining the success of pharmaceutical care implementation. In some cases, the public may not anticipate certain healthcare roles from pharmacists, which can act as a demotivating factor for pharmacists to engage in activities such as health promotion. For example, consumer surveys in the UK revealed that many individuals did not perceive community pharmacists as playing a role in health promotion, contrary to professional assumptions. However, in contexts like Nigeria where self-medication is prevalent, patients' expectations of pharmacists may be higher, potentially creating a mismatch between patient expectations and pharmacist capabilities. It is essential to recognize that consumer perceptions and expectations of pharmacy services can evolve over time, particularly as pharmacists increase their interaction with patients through the delivery of pharmaceutical care services (Oparah *et al*., 2020).

1.5.4. *Lack of standards*

The absence of standardized guidelines for pharmaceutical care poses a significant barrier to its effective implementation. If each pharmacy organization or individual pharmacist defines pharmaceutical care according to their own agenda, it can lead to inconsistencies and hinder the delivery of quality care. Establishing a standardized method for collecting patient information, identifying and resolving drug-related problems, and documenting pharmaceutical care practices is crucial for ensuring consistency and efficacy in patient care. Implementing a systematic documentation system for pharmaceutical care can help alleviate inertia and facilitate its adoption among patients (Oparah *et al*., 2020).

1.5.5. *Systems-related barriers*

Another significant barrier is the lack of a comprehensive process for defining appropriate outcomes of drug therapy within healthcare settings. This poses challenges for employers and purchasers in assessing the quality and appropriateness of healthcare services. Additionally,

inadequate physical facilities in pharmacies limit pharmacists' ability to provide pharmaceutical care effectively. The absence of dedicated consultation areas and the physical separation of pharmacists from diagnostic and therapeutic decision-making processes hinder their involvement in patient care. In some contexts, like Nigeria, where physicians hold exclusive responsibility for patient care, pharmacists may face resistance in their efforts to provide pharmaceutical care in hospital settings. However, community pharmacies, where pharmacists have more autonomy, present both challenges and opportunities for implementing pharmaceutical care initiatives (Oparah *et al*., 2020).

1.6. The role of community pharmacists in patient-centred care

Community pharmacies offer high accessibility, allowing healthcare consumers to easily approach pharmacists without appointments or referrals (Al-Arifi, 2012; Al Juffali *et al*.,2019). Moreover, consumers expect community pharmacists to play a significant role in enhancing health outcomes (Al-Arifi, 2012; Al-Tannir *et al*., 2016). Consequently, pharmacist involvement in raising public health awareness at the community level, educating the public on disease prevention and lifestyle management, and promoting the quality use of medicines is crucial in reducing morbidity and mortality from chronic diseases such as ischemic heart diseases and diabetes mellitus (Al-Arifi, 2012; Alkhenizan, 2014; Khaliq, 2012). The potential for community pharmacists to address the capacity gap in providing extended patient-centred care services is a much-needed initiative (Al-Arifi, 2012). Given the emphasized importance of public-private partnerships for effective primary healthcare, there is a significant opportunity for community pharmacies to contribute to this vision (Al-Jedai *et al*., 2016). Numerous studies support the notion of transforming the role of community pharmacies from merely providing dispensing services to becoming providers of patient-centred care (Al-Jedai *et al*., 2016; Al-Tannir *et al*., 2016; Rasheed *et al*., 2016).

1.6.1. Medication management

Community pharmacists play a crucial role in managing medications, ensuring that patients receive safe, effective, and suitable treatment plans (Kooyman and Witry, 2019). They conduct thorough evaluations of patients' medication histories to detect potential issues like drug interactions, duplications, or incorrect dosages. Moreover, community pharmacists assess patients' medication therapies of ambulatory patients for any concerns or inconsistencies and collaborate with other healthcare professionals to address them effectively (Livori *et al.*, 2023). Additionally, these pharmacists provide patients with essential information about their medications, including proper administration methods, potential side effects, and strategies for enhancing adherence. Furthermore, they actively promote medication adherence by educating patients on the significance of following their prescribed treatment regimens and assisting in overcoming any obstacles to adherence.

1.6.2. ***Patient education and empowerment***

Community pharmacists act as educators and advocates for patients, empowering them to actively manage their health (Luetsch, 2019). They offer patients precise and trustworthy information regarding their health conditions, medications, and available treatment options. Additionally, community pharmacists provide guidance on fostering healthy lifestyle habits, encompassing aspects such as nutrition, exercise, smoking cessation, and stress management (Agomo *et al.*, 2018). Moreover, they actively engage in preventive care efforts, which include administering immunizations, conducting health screenings, and managing medication therapy to mitigate the onset or progression of diseases. Furthermore, pharmacists educate patients on self-care practices for handling minor ailments and chronic conditions independently at home, thereby enabling them to make well-informed decisions about their healthcare.

1.6.3. *Community engagement and public health*

Community pharmacists are actively engaged in advancing public health and wellness in their local communities (Agomo *et al.*, 2018). They take part in various public health endeavours such as organizing vaccination campaigns, hosting health fairs, and participating in community outreach initiatives. They advocate for health promotion and disease prevention strategies, working to increase awareness of prevalent health issues and encourage healthy habits among community members (El Hajj *et al.*, 2016). Pharmacists collaborate closely with other healthcare professionals, including doctors, nurses, and public health experts, to ensure coordinated care and enhance patient outcomes. Furthermore, they champion policies and programs aimed at promoting patient-centred care and enhancing access to healthcare services within their communities

1.7. Evolution of pharmaceutical care in community pharmacy

The evolution of pharmaceutical care within community pharmacy reflects a significant shift from a product-oriented model to a patient-centred approach aimed at improving health outcomes and enhancing the quality of patient care. Historically, community pharmacies primarily focused on dispensing medications, with limited involvement in patient care beyond medication supply. However, as healthcare paradigms evolved, the role of community pharmacists expanded to encompass a broader spectrum of services, including medication management, health education, and preventive care.

Over time, various professional organizations, such as the American Pharmacists Association (APhA), have developed guidelines and principles to guide the implementation of pharmaceutical care in community pharmacy settings (FIP, 2012). These principles typically involve comprehensive patient assessment, medication therapy management, patient education, and ongoing monitoring and follow-up to ensure optimal treatment outcomes.

The evolution of pharmaceutical care in community pharmacy has been supported by advancements in technology, which have enabled pharmacists to access patient health records, conduct medication reviews, and communicate effectively with other healthcare providers (Goode *et al*., 2019). Additionally, legislative changes and reimbursement policies have facilitated the integration of pharmaceutical care services into community pharmacy practice, recognizing the value of pharmacists' contributions to patient care (Daly *et al*., 2020).

Today, community pharmacists are actively involved in providing a range of patient-centred services, including medication therapy management, immunizations, chronic disease management, and health screenings. They serve as accessible healthcare professionals within the community, offering personalized care, promoting health literacy, and contributing to improved patient outcomes.

Pharmaceutical care practices are influenced by a variety of factors, ranging from regulatory frameworks to professional training and development. Understanding these factors is crucial for optimizing patient care and ensuring the effective delivery of pharmaceutical services.

1.7.1. Regulatory framework

1.7.1.1. Role of regulatory bodies

Regulatory bodies play a significant role in shaping pharmaceutical care practices by establishing guidelines, standards, and regulations that govern the practice of pharmacy (Pezzola and Sweet, 2016). These bodies, such as the Food and Drug Administration (FDA) in the United States or the Medicines and Healthcare products Regulatory Agency (MHRA) in the United Kingdom, set forth requirements for pharmacists regarding medication dispensing, patient counselling, and medication management. Their actions and policies directly impact the scope of pharmaceutical care services that pharmacists can provide.

1.7.1.2. *Compliance with standards and guidelines*

Pharmacists must comply with regulatory standards and guidelines set forth by regulatory bodies to ensure the quality and safety of pharmaceutical care practices. This includes adherence to Good Pharmacy Practice (GPP) standards, medication safety protocols, and ethical guidelines for patient care. Compliance with these standards not only ensures the provision of high-quality care but also helps maintain public trust in the pharmacy profession.

1.7.2. Organizational culture and policies

1.7.2.1. *Influence of the pharmacy setting:*

The organizational culture and environment within a pharmacy setting can significantly influence pharmaceutical care practices (Al Rahbi *et al*., 2014). Factors such as staffing levels, workflow processes, and resource allocation can impact the extent to which pharmacists are able to engage in patient-centred care activities. Pharmacies that prioritize patient care and invest in supportive infrastructure are more likely to facilitate the delivery of pharmaceutical care services effectively.

1.7.2.2. *Policies supporting or hindering pharmaceutical care delivery*

Organizational policies and practices can either support or hinder the delivery of pharmaceutical care services. Policies that encourage pharmacist-patient interactions, provide adequate time for medication counselling, and prioritize patient safety contribute to the successful implementation of pharmaceutical care. Conversely, policies that prioritize profit margins over patient care or restrict pharmacists' autonomy may impede the provision of comprehensive pharmaceutical care services.

1.7.3. Professional training and development

1.7.3.1. *Impact of continuing education*

Continuing education plays a vital role in enhancing pharmacists' knowledge, skills, and competencies in pharmaceutical care (Wheeler and Chisholm-Burns, 2018). Through ongoing training programs, pharmacists can stay updated on the latest advancements in medication therapy, patient counselling techniques, and evidence-based practice guidelines. Continuous learning ensures that pharmacists are equipped to provide optimal pharmaceutical care services that meet the evolving needs of patients.

1.7.3.2. *Integration of pharmaceutical care principles in pharmacy curricula*

The integration of pharmaceutical care principles into pharmacy curricula is essential for preparing future pharmacists to deliver patient-centred care (Nunes-da-Cunha and Fernandez-Llimos, 2017). Pharmacy education programs should emphasize the importance of communication skills, clinical reasoning, and collaborative practice in pharmaceutical care delivery. By incorporating experiential learning opportunities and case-based studies, pharmacy schools can cultivate a workforce of competent and compassionate pharmacists capable of providing high-quality pharmaceutical care services (McCartney and Boschmans, 2018).

1.8. Current pharmaceutical care practices among community pharmacists

Current pharmaceutical care practices among community pharmacists encompass a range of services aimed at optimizing medication therapy and promoting patient well-being. In this essay, we will explore the key components of contemporary pharmaceutical care practices, including medication therapy management services, patient education and counselling, medication adherence programs, and identified strengths and weaknesses in current practices.

1.8.1. *Medication therapy management services*

Medication therapy management (MTM) services are a cornerstone of pharmaceutical care provided by community pharmacists (Ferreri *et al*., 2020). These services involve comprehensive reviews of patients' medication regimens to identify potential drug therapy problems, optimize treatment outcomes, and ensure medication safety. Pharmacists assess factors such as medication appropriateness, effectiveness, and adherence, as well as potential drug interactions or adverse effects. Through MTM services, pharmacists collaborate with patients and healthcare providers to develop personalized care plans tailored to individual patient needs (Ferreri *et al*., 2020).

1.8.2. *Patient education and counselling*

Patient education and counselling are integral components of pharmaceutical care practices in community pharmacies (Alfadl *et al*., 2018). Pharmacists play a crucial role in empowering patients to take an active role in managing their health conditions and medications. They provide clear and concise information about prescribed medications, including proper administration techniques, potential side effects, and strategies for managing medication-related concerns. Additionally, pharmacists offer guidance on lifestyle modifications, disease prevention, and self-care practices to promote optimal health outcomes (Kusher *et al*., 2016).

1.8.3. Medication adherence programs

Medication adherence programs are designed to address barriers to medication adherence and improve patient compliance with prescribed treatment regimens. Community pharmacists employ various strategies to support medication adherence, such as medication synchronization programs, pill organizers, reminder systems, and adherence counselling sessions (Schneider and Aslani, 2018; Kadia and Schroeder, 2015). By fostering open communication and establishing rapport with patients, pharmacists can identify and address

factors contributing to non-adherence, ultimately enhancing treatment outcomes and reducing healthcare costs associated with medication-related complications.

Additionally, Current pharmaceutical care practices among community pharmacists demonstrate several strengths, including accessibility, patient-centeredness, and expertise in medication management. Community pharmacies serve as convenient and accessible healthcare destinations for patients, allowing for timely intervention and support. Pharmacists' ability to provide personalized care and tailored interventions contributes to improved patient outcomes and medication safety. However, challenges such as time constraints, limited reimbursement for cognitive services, and inadequate interprofessional collaboration may hinder the full realization of pharmaceutical care potential in community pharmacy settings.

1.9. Common challenges faced by community pharmacists

1.9.1. *Time constraints*

One of the primary challenges faced by community pharmacists is the pressure of time constraints (Odukoya *et al*., 2015). Community pharmacies are often busy environments with high patient volumes and limited staffing, leading to limited time available for comprehensive patient care activities. Community pharmacists must balance dispensing medications, managing inventory, and addressing patient inquiries within tight time frames. As a result, they may struggle to dedicate sufficient time to provide thorough medication counselling, conduct medication reviews, or implement preventive care interventions.

1.9.2. *Reimbursement issues*

Reimbursement issues pose significant challenges for community pharmacists, particularly concerning compensation for cognitive services beyond traditional dispensing activities (Soares, 2018). While dispensing medications generates revenue for pharmacies, many

clinical services provided by pharmacists, such as medication therapy management (MTM) and immunizations, may not be adequately reimbursed or may not be reimbursed at all. This disparity in reimbursement can hinder the implementation of expanded patient care services and limit the scope of pharmaceutical care offered by community pharmacies.

1.9.3. *Lack of Collaboration with Other Healthcare Professionals*

Effective collaboration among healthcare professionals is essential for delivering comprehensive and coordinated patient care. However, community pharmacists often face challenges in establishing and maintaining collaborative relationships with other healthcare providers, such as physicians, nurses, and allied health professionals (Bollen *et al*., 2019). Communication barriers, professional silos, and differing practice priorities can impede interprofessional collaboration and limit opportunities for pharmacists to participate fully in patient care teams. Without seamless collaboration, pharmacists may miss out on valuable opportunities to contribute their expertise to patient care decision-making and achieve optimal treatment outcomes.

1.10. Statement of the Problem

Despite the pivotal role of community pharmacists in providing pharmaceutical care, there is a lack of comprehensive understanding of the current practices and challenges faced by community pharmacists in delivering pharmaceutical care services. Existing literature provides limited insight into the specific practices, interventions, and outcomes associated with pharmaceutical care in community pharmacy settings in Benin City (Erah and Nwazuoke, 2002; Osemwenkha and Akenzua, 2009). Consequently, there is a need to assess the current pharmaceutical care practices undertaken by community pharmacists to identify areas for improvement and optimization.

1.11. Justification of study

Therefore, a comprehensive understanding of the prevailing practices within community pharmacy settings in Benin City is crucial for identifying gaps in care provision and avenues for improving patient outcomes. Evaluating pharmaceutical care practices not only enriches the quality of care dispensed by community pharmacists but also lays the groundwork for establishing standardized guidelines and benchmarks to ensure consistent and pharmaceutical care delivery. It holds significant importance in promoting the professional development of community pharmacists in Benin City. With a rising number of pharmacists holding Doctor of Pharmacy degrees in the study setting, one would anticipate a heightened level of pharmaceutical care practice. Currently, there are anecdotal reports indicating subpar quality in pharmacy store settings. Additionally, issues like the unavailability of essential medicines and substandard service delivery are prevalent. Moreover, there's a shortage of trained clinical pharmacists, with many premises opting for technicians. The widespread use of counterfeit and substandard medicines further compounds these challenges.

1.12. Objectives of Study

Main Objective

The objective of this study is to assess the current pharmaceutical care practices by community pharmacists in Benin City, Edo State. By identifying areas for improvement and recognizing training requirements, this research aims to develop tailored continuing education programs and skill enhancement initiatives to meet the evolving demands of community pharmacy practice. Ultimately, the study aims to provide invaluable insights that can significantly enhance patient care in community pharmacy settings. By emphasizing the significance of pharmaceutical care practices, the study will refine patient-centred approaches, thereby raising the standard of care and fostering positive health outcomes for individuals.

Study specific objectives

These include:

- To assess the current pharmaceutical care practices by community pharmacists in Benin City, Edo State.
- To evaluate the extent of patient education practices conducted by study participants in their establishments.

CHAPTER TWO

2.0. METHODS

2.1. Study setting

The study setting encompassed various community pharmacies located in urban and suburban areas across Benin City, Edo-state.

2.2. Study design

The study employed a cross-sectional observational design to assess current pharmaceutical care practices among community pharmacists. This design allowed for the collection of data at a single point in time, providing a snapshot of the prevailing practices within the selected pharmacies. Following ethical approval and informed consent from the study participants, a structured questionnaire was used to collect the following information from each study participant: socio-demographics, pharmaceutical care practices, patient education.

2.3. Study population

The study population for this study comprised community pharmacists practicing in urban and suburban areas of Benin City.

2.3.1. Inclusion Criteria:

- Licensed community pharmacists practicing in urban and suburban areas.

2.3.2. Exclusion Criteria:

- Pharmacists unwilling to participate or provide consent for the study.

2.4. Sampling technique and sample size

Simple random sampling technique was used for selecting a representative sample from the population. The sample size for this study was calculated using the Slovin formula from the sample population as stated below:

$$n = \frac{N}{1+Ne^2}$$

Population of community pharmacists in Benin City according to the Association of Community Pharmacists of Nigeria (ACPN) database 2024 is 596 community pharmacists.

Where;

N= Total population

n= sample size

E= Error margin at specified confidence level, using confidence level of 95% and percentage error of 5% (0.05)

$$n = \frac{596}{1+596(0.05)^2}$$

n= 239 participants

2.5. Study Instrument

A questionnaire was structured into distinct sections covering socio-demographic information, pharmaceutical care practices, and patient education initiatives. The question type from these sections include close ended questions and a few open ended questions.

2.6 Data collection

A self-structured questionnaire, based on the study objectives and relevant literature, was utilized as the primary instrument for data collection. The questionnaire was distributed to

community pharmacists during gatherings organized by the Association of Community Pharmacists (ACPN) as approved by the ACPN Chairman, the Young Pharmacists Groups (YPG), and meetings held by the Pharmaceutical Society of Nigeria Edo State (PSN).

2.7. Method of data analysis

All data collected during the study were first coded using letters and numbers. The coded alphabets and numbers were entered into a spreadsheet using Microsoft Excel 2016, and analysed using Microsoft Excel 2016. . Descriptive statistics, was performed to summarize the data collected and the information was presented in the form of tables, percentages, and mean statistical tools.

CHAPTER THREE

3.0. RESULTS

3.1. Respondents Demographics

Table 1 presents the social demographics of the participants. Majority of them (132, 55.2%) were males and only 37 (15.5%) of them had less than a year of working experience. Regarding professional qualifications, the majority 145 (60.7%) possessed a Pharm D qualification. Most of the respondents (64.9%) were Superintendent Pharmacists.

Table 1: Respondents Demographics

S/N	VARIABLE	FREQUENCY	PERCENT (%)
1	Gender		
	Male	132	55.2
	Female	107	44.8
	Total	239	100.0
2	Duration of Practice		
	Less Than a Year	37	15.5
	1-5 Years	100	41.8
	6-10 Years	53	22.2
	More Than 10 Years	49	20.5
	Total	239	100.0
3	Professional Qualification		
	Pharm D	145	60.7
	B.pharm	90	37.7
	Others	4	1.7
	Total	239	100.0
4	Role In Pharmacy		
	Superintendent	155	64.9
	Intern	28	11.7
	Locum	50	20.9
	Others	6	2.5
	Total	239	100.0

3.2. Pharmaceutical Care Practices

Table 2 presents responses on pharmaceutical care practices. Majority of the study participants (93.7%) had a counselling section structured in the pharmacy. Only (45.6%) had access to electronic health records and (54%) always provided medication counselling to patients, medication review was only provided by (20.9%) of the participants. Less than (50%) of them were confident about their knowledge of PC principles. Majority were still documenting their activities manually. Over (90%) of them considered patient medication history, Current medication, potential drug interaction and patient lifestyle when providing PC care, and only 63.6% of them considered patients preferences. Although (91.2%) of them felt adequately trained to identify and resolve medication-related problems, only (49.4%) were very confident about their knowledge of PC principles.

Table 2: Pharmaceutical Care Practices

S/N	Variable	Frequency	%
1	Has a counselling section structured in the pharmacy	224	93.7
2	Actively involve patients in their medication management and decision-making process	227	95.0
3	Carries out documentation on Patient's specific subjective and objective findings	168	70.7
4	Actively monitor and follow up with patients to assess their medication outcomes	197	82.4
5	Have access to electronic health records (HER) or other patient information systems in your Pharmacy	108	45.6
6	Felt adequately trained to identify and resolve medication-related problems	218	91.2
7.	Provide Medication Counseling to Patients When Dispensing Medications		
	Always	129	54.0
	Most of the Times	81	33.9
	Sometimes	23	9.6
	Rarely	4	1.7
	Never	2	.8
8.	How Often Participant Conducts Medication Reviews with Patients		
	Regularly (At Least Once A Year)	50	20.9
	Occasionally (As Needed)	166	69.5
	Rarely	20	8.4
	Never	3	1.3
9.	How Confident Participant Feels about Knowledge of Pharmaceutical Care Principles		
	Not Confident at All	6	2.5
	Slightly Confident	17	7.1
	Moderately Confident	56	23.4
	Very Confident	118	49.4
	Extremely Confident	42	17.6
10.	Approach to Documentation		
	Manually	156	65.3
	Electronically	70	29.3
	Others	13	5.4
11.	Aspects Considered When Providing Pharmaceutical Care		
	Patient Medication History	233	97.5
	Current Medication	231	96.7
	Potential Drug Interaction	220	92.1
	Patient Lifestyle	224	93.7
	Patient Preferences	152	63.6

3.3. Patient Education

Table 3 presents Patient Education. A substantial majority of respondents 223 (93.3%) were actively involved in educating patients on medication use. Moreover, a significant proportion 188 (78.7%) provide health education on lifestyle modifications, showcasing the integral role of pharmacists in promoting overall well-being beyond medication management. Additionally, the data indicates that 146 (61.1%) of respondents regularly evaluate patients' understanding of prescribed medications, emphasizing the importance of ensuring patients possess a clear comprehension of their medication regimens. Similarly, a substantial majority 204 (85.4%) educate patients on the significance of adhering to drug therapy, acknowledging the crucial role adherence plays in attaining optimal treatment outcomes. Despite these proactive measures, a notable percentage of respondents 148 (61.9%) encounter challenges in ensuring effective patient education.

Table 3: Patient Education

S/N	Variable	Frequency	Percent (%)
1	Engages in Educating Patients on Medication Use		
	Always	223	93.3
	Sometimes	16	6.7
	Never	-	-
	Total	239	100
2	Offers Health Education on Life Style Modifications to Patients		
	Always	188	78.7
	Sometimes	46	19.2
	Never	5	2.1
	Total	239	100
3	Routinely Assess Patients' Comprehension of Prescribed Medications		
	Always	146	61.1
	Sometimes	87	36.4
	Never	6	2.5
	Total	239	100.0
4	Educates Patients on Importance of Adherence to Drug Therapy		
	Always	204	85.4
	Sometimes	33	13.8
	Never	2	.8
	Total	239	100.0
5	Encounters Challenges in Ensuring Effective Patient Education		
	Always	148	61.9
	Sometimes	72	30.1
	Never	19	7.9
	Total	239	100.0

CHAPTER FOUR

4.0. DISCUSSION

4.1. Pharmaceutical Care Practices

A significant majority of pharmacies indicated having structured counselling sections 224 (93.7%) and actively engaging patients in medication management and decision-making processes 227 (95.0%). This emphasizes the commitment of these pharmacies to patient-centred care, as patient involvement in treatment decisions is a fundamental aspect of quality healthcare delivery (Olson, et al., 2021). Additionally, the majority of pharmacies reported documenting patients' specific subjective and objective findings 168 (70.7%) and actively monitoring and following up with patients to evaluate medication outcomes 197 (82.4%). This reflects adherence to best practices in pharmaceutical care, which involve thorough documentation and continuous monitoring of patient progress (ACCP, 2015). However, the limited access to electronic health records (EHR) or other patient information systems among surveyed pharmacies 108 (45.6%) indicates a potential area for improvement in terms of technological integration in pharmaceutical care practices (Katz and Hawley, 2013). Despite these challenges, the majority of pharmacy professionals expressed feeling adequately trained to recognize and address medication-related issues 218 (91.2%). Highlighting the importance of ongoing professional development and training to ensure the competency of healthcare providers in delivering quality pharmaceutical care (Wheeler and Chisholm-Burns, 2018). In terms of medication counselling during dispensing, the findings reveal a high level of consistency among respondents that offer counselling 210 (87.9%) which is crucial for patient education and empowerment (Katz and Hawley, 2013).

4.2. Patient Education

Concerning patient education, vast majority of responders 223 (93.3%) were actively involved in educating patients about medication use, underlining the importance of pharmacists in providing medication-related information and guidance (Isfahani et al, 2013). Furthermore, 118 (78.7%) of pharmacies offer health education on lifestyle changes, demonstrating the extended scope of pharmacy practice in promoting holistic well-being beyond pharmaceutical management (Mossialos et al., 2015). 146 (61.1%) of respondents reported regularly evaluating their patients' understanding of prescribed medications, consistent with finding by Kwan et al., (2013). Furthermore, an overwhelming majority of responders 204 (85.4%) educate patients on the need of adhering to pharmacological therapy, emphasizing the role of medication adherence in attaining optimal treatment outcomes (Kim et al., 2018).

From a clinical standpoint, the emphasis on patient education is consistent with evidence-based approaches shown to increase drug adherence, treatment outcomes, and patient safety (Adams, 2010). Economically, engaging in patient education initiatives may result in cost savings by lowering medication mistakes, hospital readmissions, and healthcare use caused by non-adherence (Adams, 2010; Hesselink et al., 2014). Furthermore, from a humanistic perspective, successful patient education promotes empowerment, autonomy, and trust in the patient-provider relationship, thereby improving patients' overall treatment experience (Holmström and Röing, 2010).

CHAPTER FIVE

5.1. Conclusion

Findings from the present study emphasized the role of community pharmacies in patient-centered care and medication management. Despite challenges such as limited access to electronic health records, pharmacy professionals demonstrated a strong commitment to delivering quality pharmaceutical care through structured counselling, patient education, and medication monitoring. The emphasis on patient education not only enhances treatment adherence and outcomes but also fosters empowerment and trust in the patient-provider relationship. Moving forward, continued professional development and technological integration are vital for optimizing pharmaceutical care practices and ensuring comprehensive patient support and well-being.

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APPENDIX

QUESTIONNAIRE: ASSESSMENT OF CURRENT PHARMACEUTICAL CARE PRACTICES BY COMMUNITY PHARMACISTS.

Thank you for participating in this survey. Your insights as a community pharmacist are crucial in understanding the impact of pharmaceutical care to patient's outcomes. Please answer the following questions honestly and to the best of your knowledge.

SECTION 1: DEMOGRAPHICS

1.1.Gender

Male ( )

Female ( )

1.2 How long have you been practicing as a community pharmacist?

Less than 1 year ( )

1-5 years ( )

6-10 years ( )

More than 10 years ( )

1.3 What is your professional qualification?

Pharm.D ( )

B.Pharm ( )

Others (specify below)

____

1.4 What is your Role in the Pharmacy?

Superintendent Pharmacist ( )

Intern Pharmacist ( )

Locum Pharmacist ( )

Others (Please specify) ____________________________

SECTION 2: PHARMACEUTICAL CARE PRACTICES

Please tick one of the boxes only.

	YES	**NO**
2.1. Do you have a counseling section structured in your pharmacy?		
2.2. Do you actively involve patients in their medication management and decision-making process?		
2.3. Do you carry out documentation on Patient's specific subjective and objective findings?		
2.4. Do you actively monitor and follow up with patients to assess their medication outcomes?		
2.5. Do you have access to Electronic health records (HER) or other patient information systems in your Pharmacy?		
2.6. Do you feel adequately trained to identify and resolve medication-related problems?		

2.7. Which of the following aspects do you consider when providing pharmaceutical care? (Select all that apply)

Patient's medical history ( )

Current medications ( )

Potential drug interactions ( )

Patient's lifestyle ( )

Patient's preferences ( )

2.8. Do you provide medication counseling to patients when dispensing medications?

Always ( )

Most of the time ( )

Sometimes ( )

Rarely ( )

Never ( )

2.9. How often do you conduct medication reviews with patients?

Regularly (at least once a year) ( )

Occasionally (as needed) ( )

Rarely ( )

Never ( )

2.10. How confident do you feel in your knowledge of pharmaceutical care principles?

Not confident at all ( )

Slightly confident ( )

Moderately confident. ( )

Very confident ( )

Extremely confident ( )

2.11. What means do you use in documenting?

Manually ( )

Electronically ( )

Others (please specify) ________________

SECTION 3. PATIENT EDUCATION

	Yes	**No**	**Sometimes**
3.1. Do you engage in educating Patients on medication use?			
3.2. Do you offer health education on life style modifications to patients?			
3.3. Do you routinely assess patients' comprehension of prescribed medications?			
3.4. Do you educate patients on importance of Adherence to drug therapy?			
3.5. Do you encounter challenges in ensuring effective patient education?			

Conclusion: Thank you for completing the questionnaire. Your feedback is essential in gaining insights into the perceived impact of pharmaceutical care in community practice on patients outcomes.