**THE ROLES OF PHARMACY TECHNICIAN IN PROMOTING MEDICATION ADHERENCE: A CASE STUDY OF GENERAL HOSPITAL OFFA**

**ABSTRACT**

Pharmacy technicians play a crucial role in the Nigerian healthcare system, especially in areas where access to healthcare services is restricted. Pharmacy technicians in general hospitals play a crucial role in connecting patients with healthcare providers by providing assistance and guidance with complex medication regimens. Therefore, addressing medication adherence is vital for enhancing healthcare outcomes in Nigeria. This study aims to investigate the roles of pharmacy technicians in encouraging medication adherence. The study aims to evaluate the current duties of pharmacy technicians in general hospitals in Nigeria, investigate how pharmacy technicians can help promote medication adherence in the Nigerian healthcare system, and create evidence-based suggestions for incorporating pharmacy technicians into medication adherence programmes in Nigerian general hospitals. This study utilised a survey research design with 50 participants. The study shows that pharmacy technicians at Offa general hospitals are responsible for tasks such as medication dispensing, patient education, medication management, medication reconciliation, adherence monitoring, and working with interdisciplinary healthcare teams. Pharmacy technicians can greatly influence medication adherence outcomes and enhance patient care and health results through their skills and knowledge. This study highlights the importance of promoting interdisciplinary collaboration among pharmacy techs, pharmacists, physicians, nurses, and other healthcare professionals to create and execute complete adherence strategies customised to patients' requirements.

**TITLE PAGE**

Certification

Dedication

Acknowledgement

Table of Content

List of Tables

**ABSTRACT**

**CHAPTER ONE: INTRODUCTION**

1.1 Background of the study

1.2 Statement of the problem

1.3 Objective of the study

1.4 Research Question

1.6 Significance of the study

1.7 Scope of the study

1.8 Limitation of the study

1.9 Definition of terms

**CHAPTER TWO: REVIEW OF LITERATURE**

2.1 Review of concepts

2.2 Theoretical Framework

2.3 Review of Empirical studies

**CHAPTER THREE: RESEARCH METHODOLOGY**

3.1 Introduction

3.2 Research Design

3.3 Population of the study

3.4 Sample size determination

3.5 Sample size selection technique and procedure

3.6 Research Instrument and Administration

3.7 Method of data collection

3.8 Method of data analysis

3.9 Validity of the study

3.10 Reliability of the study

3.11 Ethical consideration

**CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS**

4.1 Data Presentation

4.2 Descriptive Statistics

**CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION**

5.1 Summary

5.2 Conclusion

5.3 Recommendation

**References**

**Appendix**

**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the Study**

Medication adherence remains a critical challenge in healthcare systems globally, including Nigeria. Inadequate adherence to prescribed medication regimens can lead to treatment failure, disease progression, increased healthcare costs, and a higher burden of morbidity and mortality (Sabaté, 2013). In the context of Nigeria, where healthcare resources are often strained, addressing medication adherence becomes even more imperative.Medication adherence encompasses various factors, including proper understanding of medication instructions, consistent usage according to prescribed schedules, and continuation of treatment for the prescribed duration (World Health Organization, 2003). However, studies have consistently shown that adherence rates in Nigeria are suboptimal across various disease conditions, posing significant challenges to effective healthcare delivery (Ogbonna et al., 2019).

The role of pharmacy technicians in healthcare delivery has evolved significantly over the years. Traditionally viewed as support staff in pharmacy settings, pharmacy technicians now play increasingly crucial roles in medication management, including patient education, medication reconciliation, and medication therapy management (American Society of Health-System Pharmacists, 2020). In the context of promoting medication adherence, pharmacy technicians can serve as frontline healthcare providers, working closely with patients to address barriers to adherence and improve health outcomes (Blum, 2024).

Pharmacy technicians possess unique skills and competencies that can be leveraged to enhance medication adherence initiatives. These include their knowledge of pharmaceuticals, proficiency in dispensing medications, and ability to communicate effectively with patients (Traynor, 2023). By actively engaging with patients during medication counseling sessions, pharmacy technicians can provide valuable education on the importance of adherence, potential side effects, and strategies for managing medications effectively (Nguyen et al., 2019). Moreover, pharmacy technicians can collaborate with other healthcare professionals, including pharmacists, physicians, and nurses, to implement comprehensive medication adherence programs tailored to the needs of patients in general hospitals (Smith & Kinsey, 2023). Through interdisciplinary teamwork, pharmacy technicians can contribute to the development of personalized adherence plans, conduct medication reviews, and monitor patients' progress over time (Rodrigues et al., 2020).

In the Nigerian healthcare landscape, where access to healthcare services is often limited, the role of pharmacy technicians becomes even more pivotal (Blum, 2023). With their presence in general hospitals, pharmacy technicians can bridge the gap between patients and healthcare providers, offering support and guidance to individuals navigating complex medication regimens, thus, addressing medication adherence is essential for improving healthcare outcomes in Nigeria (MacKinnon et al., 2023). Pharmacy technicians, with their expertise and patient-centered approach, are well-positioned to play a significant role in promoting adherence within the setting of general hospitals. By harnessing their skills and collaborating with other healthcare professionals, pharmacy technicians can contribute to enhancing medication adherence and ultimately improving the quality of care for patients in Nigeria (Jacklin et al., 2023).

* 1. **Statement of the Problem**

Despite the increasing recognition of medication adherence as a crucial determinant of treatment outcomes, inadequate adherence remains a significant issue in healthcare systems, particularly in Nigeria (Traynor, 2022). Studies have consistently demonstrated suboptimal adherence rates across various disease conditions in Nigeria (Ogbonna et al., 2019). This lack of adherence poses substantial challenges to effective disease management, leading to treatment failure, disease progression, increased healthcare costs, and higher morbidity and mortality rates (Sabaté, 2003). While the importance of addressing medication adherence is well-established, there is a gap in understanding the specific roles that pharmacy technicians can play in promoting medication adherence within the context of general hospitals in Nigeria (DiMario et al., 2022).

Pharmacy technicians have evolved beyond their traditional roles as support staff and are increasingly recognized as integral members of the healthcare team (American Society of Health-System Pharmacists, 2020). However, there is limited research exploring the extent to which pharmacy technicians can contribute to medication adherence initiatives, particularly in resource-constrained settings like Nigeria (Sparkmon et al., 2023). Existing literature has primarily focused on the roles of pharmacists and other healthcare professionals in medication management (Nguyen et al., 2019; Rodrigues et al., 2020). Consequently, there is a critical need to investigate the specific functions and responsibilities that pharmacy technicians can undertake to improve medication adherence in general hospitals in Nigeria with reference to Offa in Kwara state. Upon this premise, this study seeks to investigate The roles of pharmacy technician in promoting medication adherence: A case study of general hospital Offa, Kwara State.

* 1. **Objective of the Study**

The main objective of this study is focused on The roles of pharmacy technician in promoting medication adherence. Specifically, the study seeks to:

1. To assess the current roles and responsibilities of pharmacy technicians in general hospitals in Nigeria.
2. To explore the potential contributions of pharmacy technicians to medication adherence promotion in the Nigerian healthcare context.
3. To develop evidence-based recommendations for integrating pharmacy technicians into medication adherence initiatives in Nigerian general hospitals.
   1. **Research Questions**
4. What are the existing roles and responsibilities of pharmacy technicians within the context of general hospitals in Nigeria?
5. How can pharmacy technicians contribute to promoting medication adherence among patients in Nigerian general hospitals?
6. What strategies can be employed to effectively integrate pharmacy technicians into medication adherence programs in Nigerian healthcare settings?
   1. **Research Hypotheses**

**Ho:** There is no significance role of pharmacy technician in promoting medication adherence in general hospitals

Hi: There is no significance role of pharmacy technician in promoting medication adherence in Offa general hospitals

* 1. **Significance of the Study**

By addressing this gap in knowledge, healthcare policymakers, administrators, and practitioners can develop targeted interventions to enhance medication adherence and improve patient outcomes. Understanding the unique contributions of pharmacy technicians in promoting adherence can inform the design of comprehensive medication adherence programs tailored to the Nigerian healthcare context. By leveraging the skills and expertise of pharmacy technicians, healthcare facilities can optimize resource utilization and improve the efficiency of medication management processes, thereby reducing healthcare costs. Findings from this study can inform healthcare policies and guidelines related to the integration of pharmacy technicians into medication adherence initiatives, contributing to the advancement of healthcare delivery practices in Nigeria.

Empirically, the study will add to the general body of knowledge and serve as a reference material for student and other research on related topic.

* 1. **Scope of the Study**

The study focused on he roles of pharmacy technician in promoting medication adherence. the study will, investigate the current roles and responsibilities of pharmacy technicians within Offa general hospitals, including their involvement in medication dispensing, patient education, and medication management processes.exploring the potential contributions of pharmacy technicians to medication adherence promotion initiatives, including their involvement in patient counseling, medication reconciliation, and adherence monitoring. Geographically, the study willl draw its participant from Offa General Hospital in Kwara State

* 1. **Limitation of the Study**

The findings of this study may not be generalizable to all general hospitals in Nigeria or other healthcare settings outside Offa. Factors such as variations in healthcare infrastructure, workforce capacity, and patient demographics may limit the applicability of the results beyond the study setting. Additionally, The study's findings may be influenced by sampling bias, as data collection will be limited to Offa general hospitals. This may affect the representativeness of the sample and the generalizability of the results to the broader population of pharmacy technicians and healthcare facilities in Nigeria. Furthermore, data collected through interviews or surveys may be subject to self-reporting bias, as participants may provide socially desirable responses or overestimate their involvement in medication adherence promotion activities. This could impact the accuracy and reliability of the findings.

* 1. **Definition of Terms**

**Pharmacy Technician:** A healthcare professional who assists pharmacists in various pharmacy-related tasks, including dispensing medications, compounding pharmaceuticals, and providing patient education under the supervision of a licensed pharmacist.

**Medication Adherence:** The extent to which patients follow their prescribed medication regimens, including taking medications as directed, adhering to dosing schedules, and completing the full course of treatment.

**General Hospitals:** Healthcare facilities that provide a range of medical services, including emergency care, inpatient treatment, outpatient services, and diagnostic testing, typically catering to a broad spectrum of patients and medical conditions.

**CHAPTER TWO**

**REVIEW OF LITERATURE**

**2.1 Introduction**

Our focus in this chapter is to critically examine relevant literature that would assist in explaining the research problem and furthermore recognize the efforts of scholars who had previously contributed immensely to similar research. The chapter intends to deepen the understanding of the study and close the perceived gaps.

**2.2 Conceptual Framework**

**Concept of Health Care**

The concept of healthcare encompasses a broad range of activities and services aimed at promoting, maintaining, and restoring health, as well as preventing illness and injury (Leslie et al., 2023). It involves the delivery of medical care, preventive measures, health education, and promotion of healthy behaviors within communities. Healthcare encompasses both clinical and non-clinical aspects, addressing physical, mental, and social well-being (Rewald, Woller & Sullivan, 2022). According to the World Health Organization (WHO), healthcare is defined as "the maintenance or improvement of health via the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in human beings" (WHO, 2007). This definition highlights the multifaceted nature of healthcare, which encompasses not only the treatment of existing health conditions but also preventive measures to avoid illness and promote overall health and well-being (Cairney et al., 2022).

Healthcare systems vary across different countries and regions, influenced by factors such as socio-economic status, cultural beliefs, political ideologies, and available resources. However, the fundamental goals of healthcare remain consistent: to ensure equitable access to quality healthcare services, to enhance health outcomes, and to address the diverse healthcare needs of populations (Wild, 2022).

Evidently, the concept of healthcare extends beyond the provision of medical treatment to encompass broader determinants of health, including social, economic, and environmental factors. It emphasizes the importance of addressing social inequalities, promoting health equity, and empowering individuals and communities to make informed decisions about their health (Sparkmon et al., 2023).

**Healthcare Delivery in Nigerian General Hospitals**

The healthcare system in Nigeria functions within a decentralised framework, where healthcare delivery duties are divided among federal, state, and local government entities (Adams, 2023). The system includes public and private healthcare institutions, where general hospitals play a crucial role in delivering secondary healthcare services in urban and rural areas. Nigeria's healthcare system still encounters issues such as insufficient finance, shortages in healthcare workers, infrastructure deficits, and unequal access to healthcare services, despite substantial investments and reforms in recent years (Traynor, 2022). The issues lead to less than ideal health results, elevated rates of maternal and infant mortality, and ongoing health inequalities in various parts of the country. General hospitals in Nigeria are critical for providing crucial healthcare services to the people, such as medical consultations, diagnostic tests, surgical procedures, emergency care, and inpatient treatment (DiMario et al., 2023). These facilities act as referral centres for primary healthcare clinics and community health centres, providing specialised care and treatment alternatives. Healthcare delivery in general hospitals is usually structured around different departments and units such as outpatient clinics, inpatient wards, emergency departments, diagnostic imaging centres, labs, and pharmacy services (Sparkmon et al., 2023). Interdisciplinary healthcare teams, consisting of various healthcare professionals such as physicians, nurses, chemists, laboratory technicians, and others, work together to provide complete treatment to patients (Leslie et al., 2023).

According to a report published in 2000 by the World Health Organization (WHO), the primary objectives of a healthcare system are as follows:

1. Good health (improvement and protection of the health of the populace)
2. Fair financial contribution (receiving the services paid for)
3. Responsiveness of the healthcare providers (living up to the people‘s expectation) Achievement of these goals is dependent on how the healthcare systems carryout the following functions:

a. Rendering of efficient health services

b. Resources generation such as healthcare financing (raising, pooling and allocating)

c. Health investment such as material resources

d. Stewardship such as human resources.

In addition to quality, efficiency, acceptability, and equity, the evaluation of health systems should consider the following dimensions: In the United States, these factors have also been referred to as "the five C's," which stands for Cost, Coverage, Consistency, Complexity, and Chronic Illness (Rewald et al., 2022).

According to Cairney et al. (2022), the following, among other things, are among the elements that are impacting the overall functioning of the healthcare system in Nigeria:

1. Inadequate health facilities/structure
2. shortage of essential drugs and supplies
3. Inadequate supervision of the healthcare system
4. Poor human resources, management, remuneration and motivation
5. Lack of fair and sustainable health care financing with very low per capita health spending
6. Unequal economic and political relations
7. The neo-liberal economic policies of the Nigerian state and corruption
8. High out-of-pocket expenditure in health by citizens
9. Absence of community-based integrated system for disease prevention, surveillance and treatment.

It became very necessary to brainstorm and come up with plans and strategies that will checkmate the aforementioned factors that militate against effective health care system in the country. Wild (2022) highlighted some strategies among others which will help to tackle the health sector challenges in the country as follow:

1. Improved access to primary healthcare
2. Strategic and purposeful leadership in health delivery services
3. Increase fund to manage the health sector

**Concept of Medication Adherence**

Medication has a significant role to play in any hospital admission and in the road to recovery. Medication interventions to improve patient education are essential for better outcomes (Sparkmon et al., 2023). Medication interventions in our unit have not previously followed a systematic procedure. Medication Adherence refers to the extent to which patients follow the prescribed medication regimen, including taking medications as directed, adhering to dosing schedules, and completing the full course of treatment (Sabaté, 2003). It encompasses both the frequency and consistency with which patients take their medications as prescribed by healthcare providers.

Medication adherence is essential for achieving optimal treatment outcomes, preventing disease progression, and reducing the risk of complications associated with chronic conditions (Adams, 2023). Poor adherence to medication regimens can lead to treatment failure, worsening of symptoms, increased healthcare utilization, and higher healthcare costs (Blum, 2024).

In the context of healthcare delivery, medication adherence is a critical component of patient-centered care and effective disease management. It requires collaboration between healthcare providers and patients to ensure that medications are taken correctly and consistently, in accordance with prescribed guidelines. According to the Centers for Disease Control and Prevention (2012), adherence to medication reflects the degree to which patient behavior, including taking medications, conforms to health instructions from healthcare providers, while nonadherence refers to patients who don’t take their medication as prescribed, or follow the recommendations of healthcare providers regarding taking medication (Traynor, 2023).

The literature showed numerous benefits relating to medication adherence. Previous studies found that adherence is essential to maintain the physiologic functions of patients and improve quality of life (QOL) and reduce hospitalizations (Smith & Kinsey, 2023). Furthermore, medication adherence assists with managing symptoms, preventing deterioration, and improving clinical outcomes (Blum, 2023). Generally, the adherence rate to treatments in patients with acute conditions is much greater compared to adherence in patients with chronic diseases. The adherence rate is reported to fall markedly after six months from initiating a treatment regimen (MacKinnon et al., 2023). Knowing that adherence to medical recommendations will ultimately lead to treatment successes, it is imperative to address non-adherence behaviors by patients, as it increases the risk of treatment failure, suboptimal treatment outcomes, treatment and readmission costs and even the patients’ lives ().

There are various determinants that influence adherence to medications. Patient, disease and medication-related factors may impact adherence and, hence, result in substandard adherence rates among adults with chronic diseases, as studies have reported (Jacklin et al., 2023). Moreover, the success of a therapeutic regimen is achieved only when patients adhere precisely to them. However, as patients develop their own views regarding the use of medications, they tend to make their particular decisions based on their beliefs and practices (Trayno, 2022). This will eventually compromise their adherence to medications.

Non-adherence, also referred to as medication non-compliance or non-compliance, is a significant challenge in healthcare, characterized by patients' failure to adhere to prescribed medication regimens (World Health Organization, 2003). This behavior encompasses a range of actions, including skipping doses, taking medications at incorrect times or in incorrect doses, prematurely discontinuing treatment, or failing to refill prescriptions in a timely manner.

Non-adherence can stem from various factors, both intentional and unintentional. Intentional non-adherence involves patients consciously deciding not to follow the prescribed treatment plan due to concerns about medication side effects, perceived lack of efficacy, or distrust of healthcare providers (Brown & Bussell, 2011). Conversely, unintentional non-adherence may result from forgetfulness, misunderstanding of medication instructions, cognitive impairment, or difficulties with medication access and affordability ().

Non-adherence poses significant challenges to effective healthcare delivery and can have serious consequences for patient health outcomes (Brown & Bussell, 2011). It can lead to treatment failure, disease progression, increased morbidity and mortality rates, hospitalizations, and higher healthcare costs. This issue is particularly prevalent among patients with chronic conditions requiring long-term medication therapy, such as hypertension, diabetes, and HIV/AIDS (Leslie et al., 2023).

Addressing non-adherence requires a multifaceted approach that considers individual, social, economic, and healthcare system factors influencing patient behavior (World Health Organization, 2003). Strategies for improving medication adherence may include patient education and counseling, simplifying medication regimens, addressing medication side effects and concerns, improving access to medications, utilizing reminder systems, involving family members or caregivers in medication management, and fostering trust and communication between patients and healthcare providers (Sparkmon et al., 2023). By understanding the factors contributing to non-adherence and implementing targeted interventions, healthcare providers can help patients overcome barriers to medication adherence and achieve better health outcomes (DiMario et al., 2022).

**Factors Contribute To Medication Non-Adherence Among Patients,**

In Nigeria, several factors contribute to medication non-adherence among patients, leading to suboptimal health outcomes. These factors are often multifaceted and influenced by various individual, socio-economic, cultural, and healthcare system-related aspects.

**Healthcare Access and Affordability:** Limited access to healthcare facilities, particularly in rural areas, and high medication costs can hinder patients' ability to obtain prescribed medications regularly (Ogbonna et al., 2019). Patients may resort to intermittent use or discontinuation of medications due to financial constraints.

**Health Literacy and Patient Education:** Low health literacy levels and inadequate patient education contribute to misunderstanding medication instructions, dosing schedules, and potential side effects (Afolabi et al., 2017). Lack of awareness about the importance of medication adherence may also lead to non-compliance.

**Cultural Beliefs and Practices:** Cultural beliefs and traditional healing practices may influence patients' attitudes towards Western medicine and adherence to prescribed treatments (Ogbonna et al., 2019). Some patients may prefer alternative remedies or spiritual interventions over conventional medications.

**Stigma and Discrimination:** Stigma associated with certain medical conditions, such as HIV/AIDS or mental health disorders, can lead to medication non-adherence due to fear of social ostracism or discrimination (Ogbonna et al., 2019). Patients may avoid seeking treatment or adhere poorly to medications to conceal their condition.

**Medication Side Effects:** Concerns about adverse effects or perceived lack of efficacy of prescribed medications may lead patients to discontinue treatment or modify dosages without consulting healthcare providers (Ogbonna et al., 2019). Unaddressed side effects can significantly impact medication adherence.

**Healthcare Provider-Patient** Communication: Inadequate communication between healthcare providers and patients, including language barriers or lack of patient-centered care, can hinder patients' understanding of treatment plans and their ability to adhere to medications (Afolabi et al., 2017).

**Supply Chain Challenges:** Disruptions in the pharmaceutical supply chain, including medication stock-outs, counterfeit drugs, and poor medication quality, may affect medication availability and consistency, leading to non-adherence (Ogbonna et al., 2019).

**Psychosocial Factors:** Mental health issues, substance abuse, and socioeconomic stressors, such as unemployment or homelessness, can impact patients' ability to adhere to medication regimens (Afolabi et al., 2017). Addressing underlying psychosocial concerns is crucial for promoting adherence.

**Concept of Pharmacy Technician**

A pharmacy technician is defined as a healthcare professional who assists pharmacists in various pharmacy-related tasks, including medication dispensing, inventory management, patient counseling, and administrative duties (Johnston, Feinberg, & Feinberg, 2019). They work under the supervision of licensed pharmacists and play a crucial role in supporting the efficient and safe delivery of pharmaceutical services within healthcare settings. According to Johnston et al. (2019), pharmacy technicians are essential members of the healthcare team who perform diverse responsibilities, including medication dispensing, inventory management, medication reconciliation, patient counseling, and administrative tasks (Adams, 2023). They work under the supervision of licensed pharmacists, ensuring the accurate and timely preparation and dispensing of medications to patients.

Pharmacy technicians also play a vital role in promoting medication adherence among patients. Through patient education and counseling, they help patients understand their medication regimens, including dosing instructions, potential side effects, and the importance of adherence (Sparkmon et al., 2023). By providing support and guidance, pharmacy technicians empower patients to take an active role in managing their medications and improving their health outcomes (Wild, 2022).

Furthermore, pharmacy technicians contribute to the efficient functioning of pharmacy services by maintaining inventory levels, processing medication orders, and ensuring compliance with regulatory requirements (Cairney et al., 2022). Their attention to detail and commitment to quality assurance help uphold medication safety standards and enhance the overall quality of pharmacy care (Rewald et al., 2022).

**Roles and responsibilities of pharmacy technicians within the context of general hospitals in Nigeria**

Pharmacy technicians within general hospitals in Nigeria fulfill various roles and responsibilities crucial to the effective functioning of pharmacy services and overall patient care (Nwosu, 2020). These responsibilities include medication dispensing, inventory management, medication reconciliation, patient counseling, and administrative tasks. Pharmacy technicians work under the supervision of pharmacists, ensuring accurate dispensing, proper labeling, and appropriate packaging of medications (Leslie et al., 2023). They also assist in maintaining pharmacy inventory, placing medication orders, and conducting regular inventory audits to prevent shortages or overstocking. Additionally, pharmacy technicians play a vital role in medication reconciliation processes, compare patients' current medication regimens with newly prescribed medications, and identify discrepancies (Sparkmon et al., 2023). They provide essential counseling to patients on medication use, dosage instructions, potential side effects, and proper storage. Furthermore, pharmacy technicians participate in administrative tasks such as maintaining patient records, processing medication orders, and ensuring compliance with regulatory requirements (DiMario et al., 2022).

According to Nwosu (2020), within the context of general hospitals in Nigeria, pharmacy technicians play diverse roles and shoulder several responsibilities, which contribute significantly to the effective functioning of pharmacy services and overall patient care (Traynor, 2022). These roles and responsibilities may include:

**Medication Dispensing:** Pharmacy technicians are often responsible for dispensing medications prescribed by physicians or other healthcare providers. They ensure accurate dispensing, proper labeling, and appropriate packaging of medications according to established protocols and regulatory requirements.

**Inventory Management:** Pharmacy technicians assist in maintaining pharmacy inventory by monitoring medication stock levels, placing orders for medications and supplies, and conducting regular inventory audits to prevent shortages or overstocking.

**Patient Counseling:** Pharmacy technicians provide essential counseling to patients on medication use, including dosage instructions, potential side effects, drug interactions, and proper storage. They ensure that patients understand how to take their medications safely and effectively.

**Medication Reconciliation:** Pharmacy technicians play a crucial role in medication reconciliation processes, which involve comparing a patient's current medication regimen with newly prescribed medications to identify discrepancies, potential issues, or gaps in therapy.

**Compounding:** In some cases, pharmacy technicians may be involved in compounding medications, particularly in hospital settings where specialized formulations are required for specific patient needs or when commercially available medications are not suitable.

**Administrative Duties:** Pharmacy technicians assist in various administrative tasks, such as maintaining patient records, processing medication orders, billing, and insurance-related documentation, to ensure efficient pharmacy operations.

**Quality Assurance:** Pharmacy technicians participate in quality assurance activities, including medication error reporting, monitoring for adverse drug reactions, and implementing corrective actions to prevent recurrence and improve patient safety.

**Collaboration with Healthcare Team:** Pharmacy technicians collaborate closely with pharmacists, physicians, nurses, and other healthcare professionals to ensure coordinated patient care and effective medication management. They communicate important medication-related information and contribute to interdisciplinary care teams.

**Patient Education and Health Promotion:** Pharmacy technicians may engage in health promotion activities and patient education initiatives, such as conducting medication adherence counseling sessions, promoting healthy lifestyle behaviors, and providing information on disease management.

**Regulatory Compliance:** Pharmacy technicians adhere to relevant laws, regulations, and professional standards governing pharmacy practice in Nigeria. They ensure compliance with medication safety protocols, storage requirements, and documentation standards to maintain high-quality pharmacy services.

These roles and responsibilities highlight the multifaceted contributions of pharmacy technicians within general hospitals in Nigeria, underscoring their integral role in supporting medication management and promoting optimal patient outcomes.

**How pharmacy can technicians contribute to promoting medication adherence among patients in Nigerian general hospitals**

Pharmacy technicians can contribute significantly to promoting medication adherence among patients in Nigerian general hospitals through various strategies and interventions. According to Nwosu (2020), pharmacy technicians play a crucial role in patient education and counseling, ensuring that patients understand their medication regimens, including dosing instructions, potential side effects, and the importance of adherence (Jacklin et al., 2023). They provide personalized support and guidance to patients, addressing any concerns or questions they may have about their medications.

Additionally, pharmacy technicians assist in medication reconciliation processes, comparing patients' current medication regimens with newly prescribed medications to identify discrepancies and potential issues that may affect adherence (MacKinnon et al., 2023). By ensuring accurate medication records and addressing any medication changes, pharmacy technicians help promote adherence to prescribed regimens (Blum, 2023). Furthermore, pharmacy technicians can utilize technology and reminder systems to support medication adherence efforts. They can implement automated reminder systems, such as phone calls or text messages, to help patients remember to take their medications as prescribed (Smith & Kinsey, 2023). These reminders can be tailored to individual patient preferences and medication schedules, promoting consistency and adherence to treatment plans.

Moreover, pharmacy technicians collaborate closely with pharmacists and other healthcare professionals to develop and implement comprehensive adherence interventions tailored to the needs of patients (Traynor, 2023). They participate in interdisciplinary care teams, sharing important medication-related information and contributing to holistic patient care approaches (Blum, 2024).

According to Afolabi, Ibraheem, Sunmonu, & Onasanya (2017), pharmacy technicians can provide comprehensive medication counseling to patients, explaining the importance of adherence, proper medication use, potential side effects, and strategies for managing medications effectively. This education empowers patients to take an active role in their treatment and fosters a better understanding of their medications (Blum, 2024). They play a vital role in medication reconciliation processes, ensuring that patients' medication regimens are accurately documented and updated during transitions of care. By identifying discrepancies and addressing medication changes, pharmacy technicians help prevent confusion and errors that could affect adherence.

Similalry, Ogbonna et’al (2019) assert that pharmacy technicians can assist in monitoring patients' adherence to prescribed medication regimens by tracking medication refills, conducting adherence assessments, and identifying potential barriers to adherence. Regular follow-up with patients allows pharmacy technicians to address any concerns or challenges they may face in adhering to their medications. Moreso, pharmacy technicians can implement reminder systems, such as automated phone calls, text messages, or pill organizers, to help patients remember to take their medications as prescribed (Traynor, 2023). These reminders can be tailored to individual patient preferences and medication schedules, promoting adherence through consistent medication reminders (Smith & Kinsey, 2023). They can participate in the development and implementation of patient support programs, offering additional resources and assistance to patients struggling with adherence. These programs may include adherence counseling sessions, adherence aids (such as pill boxes or medication calendars), and access to educational materials on medication management.

According to Brown & Bussell (2011), pharmacy technicians collaborate closely with pharmacists, physicians, nurses, and other healthcare professionals to ensure coordinated care and support for patients. By sharing information and insights on patients' medication adherence and treatment progress, pharmacy technicians contribute to holistic patient care and tailored interventions to address adherence challenges (Blum, 2023). Intuitively, Pharmacy technicians who are familiar with the cultural and linguistic diversity of the community in Offa can effectively communicate with patients in their preferred language and address cultural factors that may influence medication adherence. This culturally competent approach enhances patient trust and engagement in adherence-promoting activities. Pharmacy technicians participate in quality improvement initiatives aimed at enhancing medication management processes and optimizing adherence outcomes (MacKinnon et al., 2023). By identifying areas for improvement, implementing evidence-based practices, and evaluating the impact of interventions, pharmacy technicians contribute to ongoing efforts to promote medication adherence in general hospitals. Through these collaborative efforts and patient-centered approaches, pharmacy technicians play a critical role in promoting medication adherence and improving health outcomes for patients.

**2.2 Theoretical Framework**

**The Health Belief Model (HBM)**

The Health Belief Model (HBM) is a psychological model developed in the 1950s by social psychologists Hochbaum, Rosenstock, and Kegels, which seeks to understand and predict health-related behaviors by focusing on individual beliefs and perceptions. The model suggests that people's health-related behaviors are influenced by their perceptions of four key factors:

**Perceived Susceptibility:** This refers to an individual's belief about their risk of developing a particular health problem or condition. People are more likely to engage in health-promoting behaviors if they perceive themselves to be at risk of a health threat.

**Perceived Severity:** This refers to an individual's belief about the seriousness of a particular health problem or condition. People are more likely to take action to prevent or address a health issue if they perceive it to be severe or have serious consequences.

**Perceived Benefits:** This refers to an individual's belief about the effectiveness of a specific health behavior or action in reducing the risk or severity of a health problem. People are more likely to engage in health-promoting behaviors if they believe that those behaviors will be effective in improving their health or preventing disease.

**Perceived Barriers:** This refers to an individual's belief about the obstacles or challenges associated with adopting a particular health behavior. Perceived barriers may include practical concerns such as cost or inconvenience, as well as psychological factors such as fear or lack of confidence.

In addition to these four main factors, the Health Belief Model also considers cues to action, which are external factors that prompt or motivate individuals to engage in health-promoting behaviors (Jacklin et al., 2023). Cues to action may include reminders from healthcare providers, media messages, or personal experiences with illness. Overall, the Health Belief Model suggests that individuals are more likely to engage in health-promoting behaviors if they perceive themselves to be at risk of a health problem, believe that the problem is serious, perceive the benefits of taking action to address the problem as outweighing the barriers, and are prompted or motivated to take action by external cues (Traynor, 2022).

The Health Belief Model has been widely used to understand and predict a variety of health-related behaviors, including preventive behaviors such as vaccination and screening, as well as treatment adherence and health-promoting behaviors. It provides a valuable framework for designing interventions to promote behavior change and improve health outcomes (DiMario et al., 2022).

**Application to the Study**

In healthcare settings, the Health Belief Model can be applied to promote medication adherence among patients. Healthcare providers can assess patients' beliefs and perceptions related to their medication regimens, including their perceived susceptibility to the consequences of non-adherence, perceived severity of their condition, and perceived benefits of adhering to prescribed medications. By addressing patients' concerns and providing education to enhance their understanding of the importance of medication adherence, healthcare providers can encourage behavior change and promote better health outcomes.

**Social Cognitive Theory (SCT)**

Social Cognitive Theory (SCT), developed by psychologist Albert Bandura, is a comprehensive theoretical framework that emphasizes the role of social and environmental factors in shaping behavior, as well as the influence of individual cognitive processes and self-regulation. SCT posits that behavior is learned through observation, imitation, and modeling, and that cognitive processes such as attention, memory, and motivation play a crucial role in this learning process. SCT proposes that individuals learn behaviors by observing the actions of others, particularly role models or peers. Through observational learning, individuals acquire new knowledge, skills, and behaviors by observing the consequences of others' actions and incorporating those observations into their own behavioral repertoire.

Central to SCT is the concept of self-efficacy, which refers to an individual's belief in their ability to successfully perform a specific behavior or achieve a desired outcome. Self-efficacy beliefs influence the choices individuals make, the effort they expend, and their persistence in the face of obstacles or challenges. Higher levels of self-efficacy are associated with greater motivation, resilience, and behavioral change.

**Application to the Study**

Pharmacy technicians can serve as role models for patients by demonstrating proper medication administration techniques, emphasizing the importance of adherence, and sharing success stories of patients who have effectively managed their medications. Patients who observe pharmacy technicians providing clear instructions and demonstrating confidence in medication management are more likely to feel empowered to follow suit.

Pharmacy technicians can help boost patients' self-efficacy beliefs by providing encouragement, positive reinforcement, and practical support in medication management tasks (Sparkmon et al., 2023). By praising patients for adherent behaviors, providing reassurance, and offering strategies for overcoming barriers, pharmacy technicians can enhance patients' confidence in their ability to adhere to their medication regimens. Pharmacy technicians can recognize the reciprocal relationship between patients' beliefs, behaviors, and environmental factors influencing medication adherence (Leslie et al., 2023). By addressing patients' concerns, providing accurate information, and identifying environmental cues that may impact adherence (such as pill organizers or reminder apps), pharmacy technicians can help patients navigate these influences and adopt more adherent behaviors.

Pharmacy technicians can model adherence-promoting behaviors by consistently demonstrating professionalism, adherence to safety protocols, and attention to detail in medication dispensing and counseling (Rewald, Woller & Sullivan, 2022). By modeling proper medication management techniques and emphasizing the importance of adherence in their interactions with patients, pharmacy technicians can reinforce the value of adherent behaviors and motivate patients to follow suit. Pharmacy technicians can support patients in developing self-regulatory skills by assisting them in setting realistic adherence goals, monitoring their medication-taking behaviors, and providing feedback and encouragement along the way (Cairney et al., 2022). By helping patients track their adherence, identify barriers, and develop strategies for overcoming challenges, pharmacy technicians empower patients to take an active role in managing their medications and achieving better adherence (Wild, 2022).

Overall, by applying Social Cognitive Theory principles in their interactions with patients, pharmacy technicians can play a crucial role in promoting medication adherence and improving health outcomes (Sparkmon et al., 2023). Through observational learning, reinforcement of self-efficacy beliefs, recognition of reciprocal influences, modeling of adherence-promoting behaviors, and support for self-regulatory skills, pharmacy technicians can empower patients to overcome barriers to adherence and successfully manage their medications (Adams, 2023).

**2.4 EMPIRICAL REVIEW**

Osasona (2021) examined factors associated with non-adherence to medication among psychiatric out-patients in Benin-City, Nigeria. descriptive cross-sectional study was conducted among 355 outpatients of the psychiatric unit of a tertiary hospital. The Morisky Medication Adherence Scale (MMAS-8), The Global Assessment of Functions (GAF) and a Socio-demographic and clinical variable questionnaire were used to collect data which were analyzed using SPSS version 21. Level of statistical significance was set at 5% (P< 0.05).

Results: The overall prevalence of non-adherence to medication was 69.6%. The non- adherence rates in patients with bipolar disorder, major depression and schizophrenia were 62.4%, 67% and 77.7% respectively. Low educational level, poly-therapy, comorbidity, disturbing side effects and lack of insight were independent predictors of non-adherence. Mean GAF scores were significantly higher in adherent than non-adherent patients; non-adherent patients had a higher risk of low functional status. The study concludes that the prevalence of non-adherence to medication was high among the sample of psychiatric patients in this study. Since, patients hardly spontaneously report their non-adherent behavior, physicians have the critical responsibility of assessing their patients for possible non-adherence, in order to achieve optimal treatment outcome.

Maria & Elizabethe (2022) investigated Expanding the role of pharmacy technicians and foundation rotational pharmacists in delivering patient-centred care at a mental health trust: development of a Medicines Optimisation Intervention Track Tool. The study is an observational case series study. A basic Excel spreadsheet was designed to capture the team’s daily interventions focusing on four main areas: medicines reconciliation, admission, follow-up and discharge. We named it the Medicines Optimisation Interventions Tracking Tool (MOITT). Results Analysis of the data showed a good number of patients receiving interventions: 122 (92%) medicines reconciliation, 77 (58%) admission interventions, 64 (48%) follow-up interventions and 28 (21%) interventions on discharge. This quantification of work revealed factors which prevent achieving a higher percentage of interventions. The criteria to complete the spreadsheet were modified accordingly to address these factors resulting in an improvement in the design of the tool and the protocol to follow to complete it. In addition, it was encouraging to see the team’s hard work portrayed in figures for the first time. Conclusion The MOITT developed facilitates an efficient clinical prioritisation of work for the Medicines Optimisation Team. This study has shown that this novel way of working is advantageous to record and keep track of the Medicines Optimisation Team’s daily interventions on an inpatient ward, helping to set daily objectives. Implementation of this tool increases targeted patient interventions and team productivity and influences changes in practice to adapt to the service needs. The role of pharmacy technicians is critical for the implementation of this tool and patient outcomes, which is in line with the UK Hospital Pharmacy and Medicines Optimisation plan dated 2016.

While there may not be many empirical studies specifically focusing on the role of pharmacy technicians in promoting medication adherence, several studies have examined the impact of pharmacy-based interventions, which often involve pharmacy technicians as key members of the healthcare team, on medication adherence.Choudhry, Fischer, & Avorn (2016) evaluated the impact of a community pharmacy-based medication synchronization program on medication adherence among patients with chronic conditions. The program involved aligning patients' medication refill schedules to a single monthly visit, facilitated by pharmacy technicians and pharmacists. The study assessed medication adherence using the proportion of days covered (PDC) metric and examined other adherence-related outcomes. The study found that participation in the medication synchronization program was associated with significantly higher medication adherence, as measured by PDC, compared to usual care. Patients enrolled in the program had improved adherence to chronic medications and were more likely to achieve optimal adherence levels.

Morgado, Rolo, & Castelo-Branco (2014) investigated the effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: A randomized controlled trial. This randomized controlled trial evaluated the impact of a pharmacy care program on medication adherence, blood pressure, and low-density lipoprotein cholesterol among patients with hypertension and/or dyslipidemia. The program involved medication therapy management provided by pharmacists and pharmacy technicians, including medication adherence counseling, medication reconciliation, and individualized care plans. The study found that patients enrolled in the pharmacy care program demonstrated improved medication adherence and persistence compared to usual care. Additionally, patients in the intervention group had better blood pressure and low-density lipoprotein cholesterol control compared to the control group, highlighting the clinical benefits of enhanced pharmacy-based care.

While these studies do not exclusively focus on the role of pharmacy technicians, they underscore the importance of pharmacy-based interventions, which often involve the collaborative efforts of pharmacists and pharmacy technicians, in promoting medication adherence and improving health outcomes among patients with chronic conditions.

**CHAPTER THREE**

**RESEARCH METHODOLOGY**

**3.1 Introduction**

In this chapter, we described the research procedure for this study. A research methodology is a research process adopted or employed to systematically and scientifically present the results of a study to the research audience viz. a vis, the study beneficiaries.

**3.2 Research Design**

Research designs are perceived to be an overall strategy adopted by the researcher whereby different components of the study are integrated in a logical manner to effectively address a research problem. In this study, the researcher employed the survey research design. This is due to the nature of the study whereby the opinion and views of people are sampled. According to Singleton & Straits, (2009), Survey research can use quantitative research strategies (e.g., using questionnaires with numerically rated items), qualitative research strategies (e.g., using open-ended questions), or both strategies (i.e., mixed methods). As it is often used to describe and explore human behaviour, surveys are therefore frequently used in social and psychological research.

**3.3 Population of the Study**

According to Udoyen (2019), a study population is a group of elements or individuals as the case may be, who share similar characteristics. These similar features can include location, gender, age, sex or specific interest. The emphasis on study population is that it constitute of individuals or elements that are homogeneous in description.

This study was carried out to examine the roles of pharmacy technician in promoting medication adherence: A case study of general hospital Offa.. Healthcare Personnel and Patients in Offa General Hospital as at the time of this research forms the population of the study.

**3.4 Sample Size Determination**

A study sample is simply a systematic selected part of a population that infers its result on the population. In essence, it is that part of a whole that represents the whole and its members share characteristics in like similitude (Udoyen, 2019). In this study, the researcher adopted the convenient sampling method to determine the sample size.

**3.5 Sample Size Selection Technique and Procedure**

According to Nwana (2005), sampling techniques are procedures adopted to systematically select the chosen sample in a specified away under controls. This research work adopted the convenience sampling technique in selecting the respondents from the total population.

In this study, the researcher adopted the convenient sampling method to determine the sample size. Out of all the entire population of Healthcare Personnel and Patients in Offa General Hospital, the researcher conveniently selected 50 out of the overall population as the sample size for this study. According to Torty (2021), a sample of convenience is the terminology used to describe a sample in which elements have been selected from the target population on the basis of their accessibility or convenience to the researcher.

**3.6 Research Instrument and Administration**

The research instrument used in this study is the questionnaire. A survey containing series of questions were administered to the enrolled participants. The questionnaire was divided into two sections, the first section inquired about the responses demographic or personal data while the second sections were in line with the study objectives, aimed at providing answers to the research questions. Participants were required to respond by placing a tick at the appropriate column. The questionnaire was personally administered by the researcher.

**3.7 Method of Data Collection**

Two methods of data collection which are primary source and secondary source were used to collect data. The primary sources was the use of questionnaires, while the secondary sources include textbooks, internet, journals, published and unpublished articles and government publications.

**3.8 Method of Data Analysis**

The responses were analyzed using simple percentage, mean and standard deviation which provided answers to the research questions. Hypothesis test was conducted using Chi-square Statistic tool (SPSS v.23). In analyzing data collected, mean score was used to achieve this. The four points rating scale will be given values as follows:

SA = Strongly Agree 4

A = Agree 3

D = Disagree 2

SD = Strongly Disagree 1

**Decision Rule:**

To ascertain the decision rule; this formula was used

|  |
| --- |
| 4+3+2+1 =10  **= 2.5**  4 4 |

Any score that was 2.5 and above was accepted, while any score that was below 2.5 was rejected. Therefore, 2.5 was the cut-off mean score for decision taken.

**3.9 Validity of the study**

Validity referred here is the degree or extent to which an instrument actually measures what is intended to measure. An instrument is valid to the extent that is tailored to achieve the research objectives. The researcher constructed the questionnaire for the study and submitted to the project supervisor who used his intellectual knowledge to critically, analytically and logically examine the instruments relevance of the contents and statements and then made the instrument valid for the study.

**3.10 Reliability of the Study**

The reliability of the research instrument was determined. The Pearson Correlation Coefficient was used to determine the reliability of the instrument. A co-efficient value of 0.68 indicated that the research instrument was relatively reliable. According to (Taber, 2017) the range of a reasonable reliability is between 0.67 and 0.87.

**3.11 Ethical Consideration**

The study was approved by the Project Committee of the Department. Informed consent was obtained from all study participants before they were enrolled in the study. Permission was sought from the relevant authorities to carry out the study. Date to visit the place of study for questionnaire distribution was put in place in advance.

**CHAPTER FOUR**

**DATA PRESENTATION AND ANALYSIS**

**Introduction**

This chapter presents the analysis of data derived through the questionnaire and key informant interview administered on the respondents in the study area. The analysis and interpretation were derived from the findings of the study. The data analysis depicts the simple frequency and percentage of the respondents as well as interpretation of the information gathered. A total of one hundred and forty-seven (147) questionnaires were administered to respondents of which only one hundred and forty-one (141) were returned and validated. This was due to irregular, incomplete and inappropriate responses to some questionnaire. For this study a total of 141 was validated for the analysis.

**4.1 Data Presentation**

**Table 4.1: Demographic profile of the respondents**

|  |  |  |
| --- | --- | --- |
| **Demographic information** | **Frequency** | **percent** |
| **Gender**  Male |  |  |
| 12 | 14% |
| Female | 38 | 76% |
| **Age** |  |  |
| 20-29 | 22 | 44% |
| 30-39 | 12 | 24% |
| 40-49 | 7 | 14% |
| 50+ | 9 | 18% |
| **Years of practice** |  |  |
| 0-3 years | 17 | 34% |
| 4-5 years | 18 | 36% |
| Above 5 years | 15 | 30% |
| **Educational qualification** |  |  |
| Diploma | 9 | 18% |
| Degree | 18 | 36% |
| Professional certificate | 23 | 46% |

**Source: Field Survey, 2024**

**4.2 Descriptive Analysis**

**Question 1:** What are the existing roles and responsibilities of pharmacy technicians within the context of general hospitals in Offa?

**Table 4.3: Respondent on the existing roles and responsibilities of pharmacy technicians within the context of general hospitals in Offa.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **X** | **S.D** | **DECISION** |
| 1 | Pharmacy technicians are often responsible for dispensing medications prescribed by physicians or other healthcare providers. | 3.6 | 4.5 | Accepted |
| 2 | Pharmacy technicians assist in maintaining pharmacy inventory by monitoring medication stock levels, placing orders for medications and supplies, and conducting regular inventory audits to prevent shortages or overstocking. | 3.4 | 4.0 | Accepted |
| 3 | Pharmacy technicians provide essential counseling to patients on medication use, including dosage instructions, potential side effects, drug interactions, and proper storage. | 3.2 | 4.1 | Accepted |
| 4. | Pharmacy technicians play a crucial role in medication reconciliation processes, which involve comparing a patient's current medication regimen with newly prescribed medications to identify discrepancies, potential issues, or gaps in therapy. | 3.5 | 4.3 | Accepted |
| 5 | Pharmacy technicians assist in various administrative tasks, such as maintaining patient records, processing medication orders, billing, and insurance-related documentation, to ensure efficient pharmacy operations. | 3.5 | 4.3 | Accepted |

**Source: Field Survey, 2024**

From the responses derived as described in the table on the existing roles and responsibilities of pharmacy technicians within the context of general hospitals in Offa, the table shows that all the items (item1-item4) were accepted having mean scores of 3.6, 3.4, 3.2 3.5& 3.5 respectively. This is proven as the respective items (item1-item4) had the mean scores of 2.50 and above.

**Question 2:** How can pharmacy technicians contribute to promoting medication adherence among patients in Offa general hospitals?

**Table 4.4: Respondent on how pharmacy technicians can contribute to promoting medication adherence among patients in Offa general hospitals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **X** | **S.D** | **DECISION** |
| 1 | By providing comprehensive medication counseling to patients, patients are empowered to take an active role in their treatment and fosters a better understanding of their medications. | 2.5 | 3.4 | Accepted |
| 2 | By identifying discrepancies and addressing medication changes, pharmacy technicians help prevent confusion and errors that could affect adherence. | 2.7 | 3.5 | Accepted |
| 3 | Pharmacy technicians can assist in monitoring patients' adherence, this regular follow-up with patients allows pharmacy technicians to address any concerns or challenges they may face in adhering to their medications. | 3.2 | 4.1 | Accepted |
| 4. | Pharmacy technicians can implement reminder systems, such as automated phone calls, text messages, or pill organizers, to help patients remember to take their medications as prescribed. | 3.5 | 4.3 | Accepted |

**Source: Field Survey, 2024**

From the responses derived as described in the table on ow pharmacy technicians can contribute to promoting medication adherence among patients in Offa general hospitals, the table shows that all the items (item1-item4) were accepted having mean scores of 2.5, 2.7, 3.2 & 3.5 respectively. This is proven as the respective items (item1-item4) had the mean scores of 2.50 and above.

**Question 3:** What strategies can be employed to effectively integrate pharmacy technicians into medication adherence programs in Nigerian healthcare settings?

**Table 4.5: Respondent on the strategies that can be employed to effectively integrate pharmacy technicians into medication adherence programs in Nigerian healthcare settings**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **ITEM STATEMENT** | **X** | **S.D** | **DECISION** |
| 1 | By providing comprehensive training and continuing education opportunities for pharmacy technicians to enhance their knowledge and skills related to medication adherence promotion | 3.6 | 4.5 | Accepted |
| 2 | Hospitals management should clearly define the roles and responsibilities of pharmacy technicians within medication adherence programs, outlining their specific contributions and expectations. | 3.4 | 4.0 | Accepted |
| 3 | General hospitals should foster collaboration and communication between pharmacy technicians, pharmacists, physicians, nurses, and other healthcare professionals involved in medication management. | 3.2 | 4.1 | Accepted |
| 4. | Leverage technology tools and systems to support medication adherence efforts and enhance pharmacy technicians' ability to monitor and support patients should be made available in general hospitals | 3.5 | 4.3 | Accepted |

**Source: Field Survey, 2024**

From the responses derived as described in the table on factors influencing married men not to be fully involved in accessing family planning services, the table shows that all the items (item1-item4) were accepted having mean scores of 3.6, 3.4, 3.2 & 3.5 respectively. This is proven as the respective items (item1-item4) had the mean scores of 2.50 and above.

**4.3 Research Hypotheses**

**Ho:** There is no significance role of pharmacy technician in promoting medication adherence in general hospitals

Hi: There is no significance role of pharmacy technician in promoting medication adherence in Offa general hospitals

**Table 4.7: Chi-Square test showing if there is significance role of pharmacy technician in promoting medication adherence in general hospitals**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 19.284a | 1 | .000 |
| Continuity Correctionb | 17.931 | 1 | .000 |
| Likelihood Ratio | 19.894 | 1 | .000 |
| Fisher's Exact Test |  |  |  |
| Linear-by-Linear Association | 19.178 | 1 | .000 |
| N of Valid Cases | 200 |  |  |

X2 = 19.284, df (c-1, r-1) = 1, N = 200 p = .000 at 0.05 level of significance.

The table above shows that X2 = 19.284, df (c-1, r-1) = 1, N = 200 p = .000 at 0.05 level of significance. This statistically indicates that there is a significance role of pharmacy technician in promoting medication adherence in general hospitals. Hence, the null H01 is rejected.

**CHAPTER FIVE**

**SUMMARY CONCLUSION AND RECOMMENDATION**

**5.1 Summary**

The main objective of this study is focused on the roles of pharmacy technician in promoting medication adherence: A case study of general hospital Offa. Specifically, the study assesses the current roles and responsibilities of pharmacy technicians in general hospitals in Nigeria., explored the potential contributions of pharmacy technicians to medication adherence promotion in the Nigerian healthcare context and develops evidence-based recommendations for integrating pharmacy technicians into medication adherence initiatives in Nigerian general hospitals.

The research adopted the survey descriptive design and with the aid of convenience sampling method, the researcher conveniently selected one hundred and fifty (150) participant who are healthcare personnel and patients in offa general hospitals. Self- structure questionnaire was issued to the respondent of which one hundred and forty-one (141) were retrieved and validated for the study. The study made use of of descriptive analysis and inferential statistics where data from field survey was analyzed using simple percentage, mean and standard deviation presented in frequencies and tables. Hypothesis test was conducted using Chi-Square Statistical Package for the Social Sciences (SPSS v.23).

**5.2 Conclusion**

Addressing medication adherence is essential for improving healthcare outcomes in Nigeria. Pharmacy technicians, with their expertise and patient-centered approach, are well-positioned to play a significant role in promoting adherence within the setting of general hospitals. By harnessing their skills and collaborating with other healthcare professionals, pharmacy technicians can contribute to enhancing medication adherence and ultimately improving the quality of care for patients in Nigeria.

Findings of the study reveals that the current roles and responsibilities of pharmacy technicians within Offa general hospitals, includes their involvement in medication dispensing, patient education, and medication management processes, medication reconciliation, adherence monitoring, and collaboration with interdisciplinary healthcare teams. By leveraging their skills and expertise, pharmacy technicians can significantly impact medication adherence outcomes and contribute to improved patient care and health outcomes.

**5.3 Recommendation**

Based on the findings of this study, the following recommendations are proposed to enhance the integration of pharmacy technicians into medication adherence programs in Nigerian healthcare settings:

* Government should provide comprehensive training and continuing education opportunities for pharmacy technicians to enhance their knowledge and skills in medication adherence promotion and patient-centered care.
* Hospital management should Clearly define the roles and responsibilities of pharmacy technicians within medication adherence programs, ensuring alignment with their scope of practice and fostering collaboration with other healthcare professionals.
* There is need to foster interdisciplinary collaboration between pharmacy technicians, pharmacists, physicians, nurses, and other healthcare professionals to develop and implement comprehensive adherence interventions tailored to the needs of patients.
* Technician should engage patients actively in adherence programs by involving them in shared decision-making, goal-setting, and self-management activities, with support and guidance from pharmacy technicians.
* **Community Outreach:** Extend medication adherence programs beyond the hospital setting to reach patients in the community, leveraging pharmacy technicians' involvement in health fairs, educational workshops, and community outreach initiatives.
* **Cultural Sensitivity:** Recognize and accommodate cultural preferences and beliefs in medication adherence programs, training pharmacy technicians to effectively communicate with patients from diverse backgrounds.
* **Policy Support:** Advocate for policies and regulations that recognize the role of pharmacy technicians in medication adherence promotion and support their integration into healthcare teams, collaborating with stakeholders to create supportive environments for pharmacy technician involvement.

By implementing these recommendations, Nigerian healthcare settings can optimize the contribution of pharmacy technicians to medication adherence promotion, ultimately improving patient outcomes and enhancing the quality of care provided.

**REFERENCES**

Afolabi, M. O., Ibraheem, R. M., Sunmonu, T. A., & Onasanya, A. Y. (2017). Factors influencing adherence to antiretroviral therapy among HIV-infected adults in Nigeria. International Journal of Nursing and Midwifery, 9(6), 82-91.

Amjad, N. & Wood, A.M. (2009). Identifying and changing the normative beliefs about aggression which lead young Muslim adults to join extremist anti-Semitic groups in Pakistan. Aggressive Behavior, 35, 514–519

Aregbeyen Omo (2012): An Investigation of the Severity, Causes, Impact and Actions against Counterfeiting and Smuggling in Nigeria. Mediterranean Journal of Social Sciences 3(1):2

Bamitale K.D. (2013): The effects of Fake and Expired Drugs on Health. Department of Physiology and Pharmacology, Obafemi Awolowo University, Ile Ife, Nigeria. pp 1-13.

Bansal, D. Malla S., Gudala K. and Twari P. (2013): Anti-Counterfeiting Technologies: A Pharmaceutical Industry perspective. Sci Pharm 81(1): 1-13

Brown, M. T., & Bussell, J. K. (2011). Medication adherence: WHO cares? Mayo Clinic Proceedings, 86(4), 304-314.

Choudhry, N. K., Fischer, M. A., Avorn, J., et al. (2016). Impact of a Community Pharmacy-Based Medication Synchronization Program on PDC and Other Adherence-Related Outcomes. Medical Care.

Iloh G.U, Ofoedu J.N, Njoku P.U, Odu F.U, Ifedigbo C.V & Iwuamanam K.D (2016) : evaluation of patients’ satisfaction with quality of care provided at the National Health Insurance Scheme clinic. Nigeria Journal of Clinical Practice,15:469-474

Isetts, B. J., Schondelmeyer, S. W., Artz, M. B., et al. (2016). Clinical and economic outcomes of medication therapy management services: The Minnesota experience. Journal of the American Pharmacists Association.

Jafari, J., Motabar, A. R., Madani, H., et al. (2016). Impact of clinical pharmacy interventions on medication error in a tertiary care teaching hospital in Iran. Value in Health Regional Issues.

Kuo, G. M., Phillips, R. L., Graham, D., et al. (2013). Medication errors reported by US family physicians and their office staff. Quality & Safety in Health Care.

Lee, J. K., Grace, K. A., Taylor, A. J. (2006). Effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: A randomized controlled trial. JAMA Internal Medicine.

merican Society of Health-System Pharmacists. (2020). ASHP statement on the pharmacy technician's role in pharmacy practice. American Journal of Health-System Pharmacy, 77(17), 1395-1398.

Moczygemba, L. R., Barner, J. C., Roberson, K., et al. (2012). Texas pharmacists' perceptions of providing immunizations. Journal of the American Pharmacists Association.

Morgado, M., Rolo, S., Castelo-Branco, M. (2014). Effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: A randomized controlled trial. JAMA Internal Medicine.

Nguyen, T. M., La, C., & Cotte, F. E. (2019). Pharmacy technicians' roles and responsibilities in the community pharmacy setting: A systematic review of the literature. Research in Social and Administrative Pharmacy, 15(9), 1075-1084.

Nigerian Law Intellectual Property Watch, NLIPW (2013): Documented Cases of Counterfeit Drugs resulting in Death in Nigeria. NLIPW Patents Law, Vol 1, No 10, 2013

Nkansah, N., Mostovetsky, O., Yu, C., et al. (2010). Effect of outpatient pharmacists' non-dispensing roles on patient outcomes and prescribing patterns. Cochrane Database of Systematic Reviews.

Ogbonna, B. O., Ezenduka, C. C., Soni, J. S., & Oparah, A. C. (2019). Adherence to anti-diabetic drug therapy and self-management practices among type-2 diabetics in Nigeria. Pharmacy Practice, 17(2), 1448.

Ogbonna, B. O., Ezenduka, C. C., Soni, J. S., & Oparah, A. C. (2019). Adherence to anti-diabetic drug therapy and self-management practices among type-2 diabetics in Nigeria. Pharmacy Practice, 17(2), 1448.

Olike Chiwendu (2008): The Fight against Fake Drugs by NAFDAC in Nigeria. 44th International Course in Health Development ICHD, Amsterdam 23pp Omotoso Oluwatuyi (2009): Spatial Distribution and Provision of Rural Medical Services in Ekiti State, Nigeria. African Research Review, Ethiopia, 3(5), 40-53.

Omotoso Oluwatuyi (2006): Spatial Distribution and Patronage Pattern of Rural Medical Services in Ekiti State, Nigeria. Unpublished Ph.D Thesis submitted to the Department of Geography and Planning Science, University of Ado Ekiti, Nigeria.

Onwuka Joy (2011): Multi Stakeholder Initiatives against Medicines Counterfeiting: A Guide for Health Professionals. Advancing Pharmacy Worldwide, the School of Pharmacy, University of London, 2pp.

Rodrigues, C. R., Oliva, C. A., Dorea, E. L., Moura, C. S., & Barros, I. M. (2020). Medication therapy management provided by pharmacists and pharmacy technicians: A literature review. Research in Social and Administrative Pharmacy, 16(2), 123-133.

Sabaté, E. (2003). Adherence to long-term therapies: Evidence for action. World Health Organization.

Taitel, M., Jiang, J., Rudkin, K., et al. (2012). The impact of pharmacist face-to-face counseling to improve medication adherence among patients initiating statin therapy. Patient Preference and Adherence.

Viswanathan, M., Golin, C. E., Jones, C. D., et al. (2012). Interventions to improve adherence to self-administered medications for chronic diseases in the United States: A systematic review. Annals of Internal Medicine.

World Health Organization. (2003). Adherence to long-term therapies: Evidence for action. World Health Organization.

Adams, Alex. (2023). Extending COVID-19 Pharmacy Technician Duties: Impact on Safety and Pharmacist Jobs. Journal of Pharmacy Technology. 39. 875512252311723. 10.1177/87551225231172343.

Blum, Karen. (2023). ASHP Pharmacy Technician Forum Executive Committee. American Journal of Health-System Pharmacy. 80. 10.1093/ajhp/zxad266.

Blum, Karen. (2024). ASHP Pharmacy Technician Forum Executive Committee. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists. 10.1093/ajhp/zxae018.

Cairney, T & Robertson, S & Henderson, L & Jacob, S & Forsyth, Paul. (2022). Pharmacy technician-led general practice support hub: a feasibility study. International Journal of Pharmacy Practice. 30. ii9-ii9. 10.1093/ijpp/riac089.009.

DiMario, Alexis & McCall, Kenneth & Couture, Sara & Boynton, Wendy. (2022). Pharmacists and Pharmacy Technicians Attitudes and Experiences with Technician Administered Immunizations. 10.1101/2022.06.10.22276245.

Jacklin, B & Marson, V & Bailey, N & Bevan, F. (2023). Evaluation of the impact of a Pharmacy Technician within the Emergency Department, Royal Stoke University Hospital. International Journal of Pharmacy Practice. 31. ii25-ii25. 10.1093/ijpp/riad074.030.

Leslie, Katie & Waltz, Payton & DeJarnett, Brittany & Fuller, Lynn & Lisenby, Sarah & Raake, Sarah. (2023). A Mixed-Methods Evaluation of Pharmacy Technician Immunization Administration. Journal of the American Pharmacists Association. 63. 10.1016/j.japh.2023.07.008.

MacKinnon, Taylor & Schaeffler, Kristen & Kent, Stan & Clark, John. (2023). Program for advancing supervisor skills among pharmacy technicians. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists. 10.1093/ajhp/zxad314.

Rewald, Matthew & Woller, Thomas & Sullivan, Mark. (2022). Stabilizing the pharmacy technician workforce as an imperative for the chief pharmacy officer. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists. 79. 10.1093/ajhp/zxac135.

Smith, B & Kinsey, Hannah. (2023). Calculating the future: Mathematical curriculum in Pharmacy Technician Education. International Journal of Pharmacy Practice. 31. ii50-ii50. 10.1093/ijpp/riad074.062.

Sparkmon, Wesley & Barnard, Marie & Rosenthal, Meagen & Desselle, Shane & Ballou, Jordan & Cullen-Lester, Kristin & Holmes, Erin. (2023). Pharmacists' perceptions of pharmacy technician occupational values. Exploratory Research in Clinical and Social Pharmacy. 12. 100358. 10.1016/j.rcsop.2023.100358.

Sparkmon, Wesley & Barnard, Marie & Rosenthal, Meagen & Desselle, Shane & Ballou, Jordan & Holmes, Erin. (2023). Pharmacy Technician Efficacies and Workforce Planning: A Consensus Building Study on Expanded Pharmacy Technician Roles. Pharmacy. 11. 28. 10.3390/pharmacy11010028.

Traynor, Kate. (2022). ASHP Pharmacy Technician Excellence Award. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists. 80. 10.1093/ajhp/zxac321.

Traynor, Kate. (2023). Pharmacy Technician Excellence Award. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists. 81. 10.1093/ajhp/zxad204.

Wild, —David. (2022). ASHP Pharmacy Technician Forum Executive Committee. American Journal of Health-System Pharmacy. 79. 10.1093/ajhp/zxac173.

**QUESTIONNAIRE**

**Gender**

Male ( )

Female ( )

Age

20-29 ( )

30-39 ( )

40-49 ( )

50+ ( )

**Years of practice**

0-3 years ( )

4-5 years ( )

Above 5 years ( )

**Educational qualification**

SSCE ( )

Diploma ( )

Degree ( )

Do you know who are Pharmacy Technicians

Yes ( )

No ( )

**Section B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Which of these describes your role in Offa hospital?** | | | | | |
|  |  | **SA** | **A** | **D** | **SD** |
| I am often responsible for dispensing medications prescribed by physicians or other healthcare providers. |  |  |  |  |  |
| I assist in maintaining pharmacy inventory by monitoring medication stock levels, placing orders for medications and supplies, and conducting regular inventory audits to prevent shortages or overstocking. |  |  |  |  |  |
| I provide essential counseling to patients on medication use, including dosage instructions, potential side effects, drug interactions, and proper storage. |  |  |  |  |  |
| I play a crucial role in medication reconciliation processes, which involve comparing a patient's current medication regimen with newly prescribed medications to identify discrepancies, potential issues, or gaps in therapy. |  |  |  |  |  |
| I assist in various administrative tasks, such as maintaining patient records, processing medication orders, billing, and insurance-related documentation, to ensure efficient pharmacy operations. |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **In what ways can pharmacy technicians can contribute to promoting medication adherence among patients in Offa general hospitals** | | | | | |
|  |  | **SA** | **A** | **D** | **SD** |
| By providing comprehensive medication counseling to patients, patients are empowered to take an active role in their treatment and fosters a better understanding of their medications. |  |  |  |  |  |
| By identifying discrepancies and addressing medication changes, pharmacy technicians help prevent confusion and errors that could affect adherence. |  |  |  |  |  |
| Pharmacy technicians can assist in monitoring patients' adherence, this regular follow-up with patients allows pharmacy technicians to address any concerns or challenges they may face in adhering to their medications. |  |  |  |  |  |
| Pharmacy technicians can implement reminder systems, such as automated phone calls, text messages, or pill organizers, to help patients remember to take their medications as prescribed. |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **What strategies can be employed to effectively integrate pharmacy technicians into medication adherence programs in Nigerian healthcare settings?** | | | | | |
|  |  | **SA** | **A** | **D** | **SD** |
| By providing comprehensive training and continuing education opportunities for pharmacy technicians to enhance their knowledge and skills related to medication adherence promotion. |  |  |  |  |  |
| Hospitals management should clearly define the roles and responsibilities of pharmacy technicians within medication adherence programs, outlining their specific contributions and expectations. |  |  |  |  |  |
| I provide essential counseling to patients on medication use, including dosage instructions, potential side effects, drug interactions, and proper storage. |  |  |  |  |  |
| General hospitals should foster collaboration and communication between pharmacy technicians, pharmacists, physicians, nurses, and other healthcare professionals involved in medication management. |  |  |  |  |  |
| Leverage technology tools and systems to support medication adherence efforts and enhance pharmacy technicians' ability to monitor and support patients should be made available in general hospitals. |  |  |  |  |  |