EXPLORATION OF THE ATTITUDE AND BELIEFS OF PHARMACISTS IN THE ADOPTION OF EHEALTH TECHNOLOGY IN COMMUNITY PHARMACY PRACTICE

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CERTIFICATION

This is to certify that Daniel Noghayangbon Eduwuirofo with matriculation number PHA1606767 completed the project research study "Exploration of the attitude and beliefs of pharmacists in the adoption of ehealth technology in community pharmacy practice" as a requirement for the award of the Doctor of Pharmacy (Pharm. D) degree. in the department of clinical pharmacy and pharmacy practice, Faculty of Pharmacy, University of Benin City,

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DEDICATION

This project work is dedicated to God almighty.

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ABSTRACT

Background: Pharmacists play a vital role in medication management, patient counseling, and healthcare coordination and the integration of eHealth technology has the potential to enhance these roles by providing pharmacists with efficient tools for information sharing, communication, and improving patient care.

Aim: The aim of this study is to investigate the attitude and belief of pharmacists towards the adoption of eHealth technology in community pharmacy practice in Benin City.

Methods: Convenience sampling was used to select the pharmacists working at community pharmacies in Benin City. Among which 140 questionnaires were disseminated, 125 were duly completed and served as the dataset for subsequent percentage calculations.

Key findings: The majority of respondents are male, making up 65.6%, The largest age group among the participants is 30-49 years, representing 51.2%, and Superintendent pharmacists are the largest group, making up 61.6%. On how effective is the use of eHealth technology in improving medication management and safety in community pharmacy practice Excellent: 10 (8%), Good: 29 (23.2%), Average: 45 (36%) Poor: 33 (26.4%) Very poor: 8 (6.4%). The Chi-Square tests show a significant relationship between the variables under examination, with p-values of .002 and .001.

Conclusion: The level prevalence of adoption of eHealth technology in community pharmacy practice is low and some factors hinder adoption of eHealth technology in community pharmacy practice, pharmacists have positive opinions and attitudes towards the integration of eHealth technology in community pharmacy practice and there are difficulties and challenges encountered in implementing eHealth technology in community pharmacy practice in Benin City.

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INTRODUCTION

1.1 Background of the study:

In recent years, the adoption of eHealth technology in community pharmacy practice has gained significant attention due to its potential to transform healthcare delivery and improve patient outcomes. Understanding the attitudes and beliefs of pharmacists towards the integration of eHealth technology is crucial for successful implementation and utilization in community pharmacy settings. This study aims to explore the attitude and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice, shedding light on their perspectives, concerns, and perceived benefits. Pharmacists play a vital role in medication management, patient counseling, and healthcare coordination within the community. The integration of eHealth technology, such as electronic health records (EHRs), telehealth platforms, and mobile applications, has the potential to enhance these roles by providing pharmacists with efficient tools for information sharing, communication, and improving patient care. Previous studies have examined the attitude and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice, providing insights into this important area. A study by Elkami et al. (2014)) explored the perceptions and barriers towards the provision of health promotion activities among community pharmacists. This study revealed that pharmacists recognized the potential benefits of eHealth technology in supporting health promotion efforts and improving patient education. Moreover, a systematic review and synthesis of qualitative studies by Machowska et al. (2021) examined pharmacists' attitudes, knowledge, and perceived barriers towards eHealth in community pharmacy practice. The review found that pharmacists generally expressed positive attitudes towards the adoption of eHealth technology, recognizing

its potential to improve patient care and medication management. However, barriers such as the need for adequate training, technical support, and concerns regarding patient privacy and data security were identified. These previous studies provide a foundation for understanding pharmacists' attitudes towards eHealth technology adoption. However, further research is needed to explore the specific beliefs, concerns, and factors influencing the acceptance or resistance towards eHealth technology in community pharmacy practice. By gaining a deeper understanding of these attitudes and beliefs, policymakers, pharmacy organizations, and stakeholders can develop strategies to promote the successful integration and utilization of eHealth technology in community pharmacies, ultimately enhancing patient care and outcomes.

The integration of eHealth technology in community pharmacy practice has the potential to revolutionize healthcare delivery, enhance patient outcomes, and improve the efficiency of pharmacy services. As technology continues to advance, it becomes imperative to understand the attitudes and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice. This study aims to explore these attitudes and beliefs, shedding light on the factors that influence the acceptance or resistance towards eHealth technology in this setting.

Community pharmacies serve as accessible healthcare hubs for individuals seeking medication-related services and advice. With the increasing complexity of healthcare and the need for seamless coordination between healthcare providers, the integration of eHealth technology in community pharmacy practice has gained significance. eHealth technology encompasses electronic systems, such as electronic health records (EHRs), telehealth platforms, and mobile applications, which can streamline communication, facilitate medication management, and enhance patient care. The adoption of eHealth technology in community pharmacy practice offers numerous benefits, including: Improved patient care: eHealth technology enables

pharmacists to access comprehensive patient health records, facilitating accurate medication management, medication counseling, and personalized care. According to a systematic review and synthesis of qualitative studies, pharmacists perceive eHealth technology as a means to improve patient care and enhance medication management. Enhanced medication safety: Through eHealth systems, pharmacists can identify potential drug interactions, allergies, and medication histories, thereby reducing medication errors and adverse drug events. A cluster randomized trial showed that the implementation of an electronic medication reconciliation intervention in community pharmacies led to a significant reduction in adverse drug events (Tamblyn et. Al. (2019). Efficient workflow: eHealth tools streamline administrative tasks, such as prescription processing and record-keeping, allowing pharmacists to allocate more time to patient care activities. Studies have shown that eHealth interventions can improve medication adherence, leading to better health outcomes. Collaboration and continuity of care: eHealth technology facilitates seamless communication and information sharing between pharmacists, physicians, and other healthcare providers, leading to improved coordination and continuity of care.

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1.2 Statement of problem

The research problem of this study is to investigate the attitudes and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice specifically in Benin City, Edo State, Nigeria. The study aims to understand how pharmacists in this specific community perceive and approach the integration of eHealth technology in their daily practice. The research problem encompasses the following key aspects:

Attitudes towards eHealth technology adoption: This study aims to explore the attitudes of pharmacists in Benin City towards the integration of eHealth technology in community pharmacy practice. It seeks to understand whether pharmacists view eHealth technology as beneficial and worthwhile for improving patient care and pharmacy operations in their local context. Beliefs about the benefits and challenges: The research problem also focuses on understanding the beliefs of pharmacists in Benin City regarding the potential benefits and challenges associated with the adoption of eHealth technology. It aims to uncover the perceived advantages of eHealth technology, such as improved medication management, enhanced patient outcomes, and increased efficiency within the specific community setting. Additionally, the study aims to identify the perceived challenges and barriers that pharmacists in this community may anticipate in adopting eHealth technology.

Factors influencing adoption decisions: The research problem explores the various factors that influence the acceptance or resistance towards eHealth technology adoption among pharmacists in Benin City. It aims to investigate factors such as technological proficiency, training and support availability, perceived usefulness, perceived ease of use, organizational readiness, and specific regulatory considerations.

Perceptions of impact on patient care and outcomes: This study seeks to examine how pharmacists in Benin City perceive the impact of eHealth technology on patient care and outcomes. It aims to understand whether pharmacists believe that eHealth technology can improve medication adherence, facilitate patient counseling, enable better monitoring of patient health, and enhance overall healthcare outcomes in their local community.

Strategies for successful adoption: The research problem also includes investigating strategies that can be implemented to promote the successful adoption and utilization of eHealth

technology in community pharmacy practice specifically within Benin City. It aims to identify potential approaches and interventions that can address community-specific barriers, improve acceptance, and facilitate the integration of eHealth technology in this specific setting.

By exploring these aspects of attitudes and beliefs towards eHealth technology adoption in Benin City, Edo State, Nigeria, this study aims to contribute to the understanding of pharmacists' perspectives in this specific context and inform strategies for successful implementation and utilization of eHealth technology in community pharmacy practice within this community.

1.3 Research questions

1: How prevalent is the use of eHealth technology in community pharmacy practice in Benin City, Edo state, Nigeria?

2: What factors contribute to the adoption of eHealth technology in community pharmacy practice?

3: What are the opinions and attitudes of pharmacists towards the integration of eHealth technology in community pharmacy practice, particularly in Benin City, Edo state?

4: What difficulties are encountered in implementing eHealth technology in community pharmacy practice?

5: What advantages can be gained from incorporating eHealth technology in community pharmacy practice?

1.4 Scope of the Study

This study focuses on exploring the attitudes and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice specifically in Benin City, Edo State,

Nigeria. The study aims to gather insights from pharmacists practicing within this specific community to understand their perspectives on integrating eHealth technology into their daily practice.

The study will include pharmacists working in various community pharmacies located within Benin City, Edo State. The participants will be selected through a sampling method, which may include convenience sampling or random sampling, depending on the availability and willingness of pharmacists to participate. By focusing on a specific community, the study aims to provide a detailed understanding of the attitudes and beliefs of pharmacists within that community. The findings will contribute to the existing knowledge about eHealth technology adoption in community pharmacy practice and can inform future research and interventions aimed at promoting the successful integration of eHealth technology in community pharmacy settings in Benin City, Edo State, Nigeria.

1.5 Justification of the study

Understanding pharmacists' attitudes towards integrating eHealth technology into community pharmacy practice in Benin City, Edo State, Nigeria holds significant implications. The study seeks to bridge a knowledge gap by unveiling pharmacists' perspectives on eHealth technology adoption. This insight can foster better patient care by identifying barriers and facilitators, thereby shaping strategies for eHealth technology's effective implementation. Additionally, the study acknowledges the potential for eHealth technology to optimize pharmacy operations, enhance medication management, and bolster efficiency. By delving into pharmacists' attitudes, the study strives to pinpoint influential factors that could drive successful eHealth technology adoption, ultimately leading to more streamlined pharmacy practices in Benin City Community.

Furthermore, the research aims to inform healthcare policies and practices. The study's findings, which highlight pharmacists' perceptions of eHealth technology adoption, can guide policy decisions, resource allocation, and the creation of training programs and support systems. As a contribution to the literature, the study enriches the body of knowledge concerning eHealth technology adoption in Nigerian community pharmacy settings. These insights can provide a foundation for future research endeavors, serving as a valuable reference for the exploration of related themes and the development of evidence-based strategies. Ultimately, the study's expositions stand to empower policymakers, pharmacy managers, and healthcare providers with the awareness necessary to navigate barriers and opportunities, fostering the integration of eHealth technology and elevating patient care outcomes within Benin City, Edo State, Nigeria.

1.6 Literature Review

Over the last few decades, the health sectors in most countries of the world have experienced remarkable changes owing to swift headway in information and communication technology (ICT) (Jang et al., 2016). ICT proliferation is an innovative force and provides the facilities with high-quality healthcare services for patients, security, and deliveries (Blumenthal & Glaser, 2007; Tao et al., 2016). From a healthcare perspective, the provision of services that are sound, cheap, and fast is considered very important. A recent study conducted by Hoque et al. (2017) specified that e-health is a result of ICT and has a major effect on health sector growth in developing countries. The advancement in ICT the dynamic for e-health technology has been initiated and recognized as an essential element in the health sector. The World Health Organization (WHO) has defined e-health as the leveraging of information and communication technology (ICT) to connect providers, patients, and administrations; to educate and inform healthcare professionals,

managers and users; to stimulate innovation in the distribution of care and organisation the health system; and to develop our health care system (Blaya et al., 2010, p. 244). E-health originality has been broadly regarded as an opportunity for marked improvement in the public healthcare sector to soften the plentiful supply and demand of medical treatment in both developed and less-developed nations (Ball & Lillis, 2001; Ludwick & Doucette, 2009). The World Health Observatory, part of the WHO, surveyed 96 countries, and the results emphasized the need for e-health tools, determining that the tools are handy and applicable for more than 70% of non-Organization for Economic Cooperation and Development countries (WHO Global Observatory for eHealth, 2006). In most developed countries, the government has invested and continuously invests resources in health care to develop advanced e-health systems that consider the most effective way of providing high-quality healthcare services to its residents. For example, in Germany, the government has developed e-health cards through the Federal Ministry of Health for local patients covered by insurance. Health cards cover patients' personal information such as insurance details and medical history. Patients will use this "smart card" to gain insurance-covered healthcare services (Mugo & Nzuki, 2014). According to Cline (2012), the United States has invested US$1.2 billion to enable the adoption of electronic health records (EHR) in country hospitals. By using EHR, patient information is gathered electronically. In Canada, the federal government established the Canada Health Info way, which is controlled and entirely financed by the government and managed by the deputy minister of health. The organization's purpose is to encourage the use of EHR and electronic health information (HI) to ensure the exchange of medical records and health knowledge in the federal, district, and regional zones across the country. However, despite the potential of e-health technology services, such as delivery of high-quality health care worldwide, previously published studies have shown that the strategic

advantage of e-health technology is especially relevant to the developing countries, where access to essential social services like high-quality health care is limited by weak government policies, political conflicts, and the dearth of modern technology infrastructure (Omary et al., 2010). A study conducted by Hoque et al. (2017) assessing the effects of ICT tools on healthcare delivery in Bangladesh showed how these tools can lead to improving the quality and efficacy of healthcare services. Governments in various developing nations are more optimistic that e-health systems will bring improvement in the quality of health care, accessibility, and capability (Tierney et al., 2010). E-health technology provides better access to healthcare services for all patients, nurses, doctors, and other medical staff and can improve the quality of health care as well as enhance collaboration (Khalifehsoltani & Gerami, 2010). Patients and physicians are encouraged to use e-health technologies as effective ways to improve quality and mitigate increased healthcare costs. E-health care can improve both the quality of and access to healthcare services while reducing costs even in the event of a shortage of resources (Nessa et al., 2008). In general, doctors are usually more positive about e-health than patients in developed countries (Hoque et al., 2017). Previous research found that patients appeared hesitant to employ modern technologies (Hoque et al., 2017). Based on the aforementioned findings, it can be concluded that most research initiatives concentrate on the behaviors of consumers toward e-health adoption and other provider aspects, such as physicians' and nurses' perspectives. To the best of our knowledge, no studies had been done in Pakistan from the perspectives of patients, although patients play significant roles in the successful adoption of e-health care. Moreover, most of the preceding research was carried out in the context of developed nations. This study therefore attempted to fill the aforementioned gaps by exploring the issues associated with e-health adoption from patients' perspectives in a Pakistani context. Viewing the existing literature,

recent years witnessed a series of theoretical models (such as IDF, TAM, TRA, and TPB, spelled out below) used by researchers to investigate consumers' acceptance of the technology. Among them, many scholars used the unified theory of acceptance and usage of technology (UTAUT) to examine user behavioral intention (BI) and the actual use of technology (Ali et al., 2016; Khan, Yu, et al., 2018). UTAUT is considered a unique tool among researchers and is regarded as a distinctive research model because it provides a clear link between the construct and customer-driven BI. This model specifically focuses on the factors that determine users' BI from the perspective of patients. Given the broad position of the UTAUT model, we selected it for empirical research along with task technology fit (TTF), privacy, trust, and personal innovativeness (PI) in information technology (PIIT). A study conducted in Africa looked at the adoption of e-health technology, using UTAUT as a base model, and concluded that UTAUT is the best technique for determining users' intentions in less developed countries, an additional reason for choosing it for the current study (Ami-Narh & Williams, 2012). In addition, the model incorporated education, age, gender, and experience as control variables to understand clearly the effect of selected variables on target variables (Liu et al., 2016). Recognizing the gap in the literature acknowledged by Ahlan and Ahmad (2014), this article adds to the literature of e-health, based on less-developed countries, where the adoption of technology is under consideration. Also, it was found that the Pakistan health sector uses e-health technology to improve essential services and services in real time (Naseem et al., 2014). E-health is a fairly recent term that was rarely used before 1999 and now seems to be used to define not only internet medicine but virtually anything related to computers and medicine (Eysenbach & Jadad, 2001). Possibly, the word was used by industry managers and marketers, not academics. They developed and used this term in line with other "electronic" terms such as e-commerce,

electronic enterprise, electronic solutions, and so on in an effort to communicate promises, values, and illusion to the healthcare sector and realize new possibilities the internet might hold for the healthcare sector (Eysenbach & Jadad, 2001). Hage et al. (2013) say e-health refers to any interactive communication and information technology aimed at enhancing community quality of life and/or individual health outcomes. It is also a way to provide medical procedures or studies in distant places. E-health is an emerging field at the intersection of medical information, public health, and industry and applies to HI services provided or developed over the internet and other related technologies. In a broader sense, this concept is not just about technological advancement but also about state of mind, attitude, and dedication to networked global thinking, enhancing health care at local, national, and global levels through ICT. Khan, Yu, et al. (2018) conducted a study titled "Assessing the Physicians' Acceptance of E-Prescribing in a Developing Country: An Extension of the UTAUT Model with Moderating Effect of Perceived Organizational Support" and discovered that the adoption of e-prescribing by physicians could increase efficiency, improve time management, and increase production. Qureshi et al. (2014) conducted a study as "An Investigation into the Adoption and Use of Issues of E-health in Public Sector Hospitals of Developing Countries." This systematic review aimed to summarize the existing literature, identifying challenges and opportunities that promote the implementation of e-health technology in public health hospitals. The study findings illustrated the various facets of e-health systems in terms of their implementation and use in developing countries. Naseem et al. (2014) conducted a study on Pakistan's healthcare sector outlined in the article "E-health: Effect on Health System Efficiency of Pakistan." The study established that electronic health technology can play an important role in managing many infectious diseases through effective monitoring. The implementation of e-health would contribute to greater productivity and increased access for

the general public health system and the eradication of diseases in Pakistan. The main aim of the research was to find out how and why physicians decide to use the e-health application in an outpatient setting. Bhutto et al. (2010) concluded that health informatics could help healthcare facilities improve the delivery of health care in Pakistan. There is a shortage of studies in underdeveloped countries that highlight e-health in a comprehensive way. Because of the lack of robust theoretical bases around e-health technology in developing Asian countries, our present study employs an established UTAUT method, which has not been used much in e-health, as a lens through which an emerging field can be properly investigated. Developing countries provide a unique context when it comes to technology adoption because of issues, such as digital division and cultural beliefs, which are much less noticeable in developed countries. Very few studies have examined e-health technology adoption in developing economies, which makes it a significant area of study for researchers. Therefore, the objective of the present study is to investigate the acceptability of UTAUT in influencing the intention of patients in developing countries to use and accept e-health technology

1.6.1 Overview of eHealth Technology in Community Pharmacy

eHealth technology has emerged as a transformative force within the landscape of community pharmacy, revolutionizing the way pharmacists deliver patient care and manage pharmacy operations. This dynamic and evolving field encompasses a wide range of digital tools, software applications, and electronic systems designed to enhance the practice of pharmacy, improve patient outcomes, and streamline daily workflows. At its core, eHealth technology empowers community pharmacists to transition from traditional, paper-based processes to efficient, data-driven, and patient-centric approaches. One of the foundational pillars of eHealth technology in community pharmacy is the adoption of electronic health records (EHRs) and electronic

prescribing (e-prescribing) systems. These digital platforms facilitate the seamless exchange of patient health information (PHI) among healthcare providers, ensuring accurate and secure transmission of prescription orders and patient medication histories (American Pharmacists Association, 2018). E-prescribing, in particular, has revolutionized the prescription fulfillment process, minimizing errors related to illegible handwriting and promoting medication safety by providing real-time access to drug interactions, allergies, and formulary information (Schindel et al., 2011).

Furthermore, eHealth technology empowers community pharmacists to assume more prominent roles in patient care. Medication therapy management (MTM) platforms, integrated into EHRs, enable pharmacists to engage in comprehensive medication reviews, medication reconciliation, and therapeutic interventions, thus contributing to the optimization of medication regimens and improved patient adherence (American Pharmacists Association, 2013). These systems not only foster better communication with patients but also enable pharmacists to collaborate more effectively with other healthcare providers in care coordination efforts, ultimately leading to enhanced patient outcomes (Hepler & Strand, 1990). Patient engagement and adherence represent critical dimensions of community pharmacy practice that have been significantly impacted by eHealth technology. Mobile health (mHealth) applications, medication synchronization programs, and automated medication reminders empower patients to take a more active role in managing their health and adhering to prescribed medications. These patient-facing tools offer a user-friendly interface, facilitate prescription refills, and provide educational resources, all of which contribute to improved medication adherence and overall health management.

In addition to patient care, eHealth technology plays a pivotal role in optimizing pharmacy operations. Pharmacy management systems encompass various functionalities, including inventory management, billing, and claims processing, all of which are streamlined and automated through digital platforms. These systems not only reduce administrative burdens but also enhance the financial viability of community pharmacies, allowing pharmacists to allocate more time and resources to clinical services (Hassell et al., 2006). Furthermore, data analytics tools embedded in eHealth systems enable pharmacists to make informed decisions about inventory levels, pricing strategies, and service offerings, thereby improving business sustainability.

Nonetheless, the adoption and integration of eHealth technology in community pharmacy practice have not been without challenges. Concerns related to data security, patient privacy, interoperability of systems, and initial implementation costs necessitate thoughtful planning and strategic investments. Moreover, pharmacists must navigate the evolving regulatory landscape to ensure compliance with healthcare laws and standards, particularly those governing the confidentiality and protection of PHI. eHealth technology has ushered in a new era of innovation and transformation in community pharmacy practice. From electronic health records and e-prescribing systems to medication therapy management and patient engagement applications, these digital tools empower community pharmacists to deliver more effective and patient-centered care, optimize pharmacy operations, and foster better health outcomes. While challenges and considerations persist, the potential for eHealth technology to revolutionize and elevate community pharmacy practice remains substantial, offering pharmacists the opportunity to play an even more pivotal role in healthcare delivery.

1.6.2 Attitudes Towards eHealth Technology Adoption

Attitudes towards the adoption of eHealth technology in healthcare are complex and multifaceted, influenced by a variety of factors that span individual, organizational, and contextual dimensions. Healthcare professionals, including physicians, nurses, and pharmacists, play a pivotal role in the successful implementation of eHealth systems, and their attitudes significantly impact the adoption process. Numerous studies have highlighted a range of attitudes that healthcare providers towards eHealth adoption. One of the primary factors influencing attitudes is perceived usefulness. When healthcare professionals perceive eHealth technology as beneficial to their clinical practice, such as improving patient care, enhancing efficiency, or streamlining administrative tasks, they are more likely to exhibit positive attitudes towards adoption (Holden & Karsh, 2010; Davis, 1989). Perceived ease of use is another critical factor; healthcare providers are more inclined to adopt eHealth systems when they find them easy to learn and use. If the technology aligns with their existing workflows and minimizes disruptions, it can contribute to positive attitudes.

However, concerns related to the perceived complexity of eHealth systems or the effort required for their integration can lead to negative attitudes. Resistance to change is a common barrier, as healthcare professionals may be comfortable with traditional paper-based methods or may fear technology-induced errors (Holden & Karsh, 2010). Lack of familiarity and computer literacy can exacerbate these concerns. Additionally, the influence of organizational factors cannot be underestimated. Support from healthcare leadership and peers can significantly impact attitudes towards eHealth adoption. When leaders champion eHealth initiatives, provide resources, and promote a culture of innovation, healthcare professionals are more likely to embrace the technology (Raza et al., 2017). Conversely, inadequate leadership support, lack of training, and

insufficient technical assistance can contribute to negative attitudes. The context within which healthcare professionals practice also plays a crucial role. For example, clinicians working in resource-constrained settings may have different attitudes towards eHealth adoption compared to those in well-resourced environments (Kruse et al., 2017). Perceptions of the technology's compatibility with existing infrastructure and the perceived benefits for underserved populations can influence attitudes. Concerns about patient data security and privacy are paramount. Healthcare providers are understandably cautious about the confidentiality and integrity of patient information (Adler-Milstein et al., 2017). Effective communication of robust data security measures can alleviate these concerns and foster positive attitudes. Patient engagement is another dimension that impacts healthcare professionals' attitudes towards eHealth adoption. When eHealth tools are seen as enhancing patient-provider communication, promoting patient empowerment, and improving health outcomes, providers are more likely to embrace them.

1.6.3 Perceptions of eHealth Technology in Community Pharmacy

Perceptions of eHealth technology in community pharmacy practice are multifaceted and can significantly influence its adoption and utilization. Community pharmacists, as crucial healthcare providers in the community, have varying attitudes and perspectives regarding eHealth technology, which encompass a spectrum of positive, negative, and ambivalent sentiments. On the positive side, many community pharmacists perceive eHealth technology as a valuable tool for enhancing the quality of patient care and improving overall pharmacy practice. They acknowledge that eHealth systems, such as electronic health records (EHRs) and e-prescribing, can streamline prescription processes, reduce medication errors, and facilitate more effective communication with other healthcare providers, thus leading to better patient outcomes (Schindel

et al., 2011; Chisholm-Burns et al., 2010). Moreover, eHealth technology is often seen as a means to improve medication adherence through medication synchronization programs and automated medication reminders, ultimately promoting better health management among patients. Efficiency gains are also a driving factor in positive perceptions. Community pharmacists recognize that eHealth systems can automate various administrative tasks, such as inventory management, billing, and insurance claims processing, allowing them to dedicate more time to clinical services and patient counseling (Hepler & Strand, 1990). Additionally, eHealth technology offers opportunities for pharmacists to engage in collaborative care models, including medication therapy management (MTM) and chronic care management, where they can actively contribute to disease management and medication optimization (Smith et al., 2019).

Conversely, there are notable challenges and concerns that shape negative perceptions of eHealth technology among community pharmacists. One prominent issue is the perceived disruption to workflow. Implementing new eHealth systems often requires adjustments to daily routines and additional training, leading to initial inefficiencies and potential resistance to change (Hassell et al., 2006). Moreover, some pharmacists express concerns about the financial burden associated with acquiring and maintaining eHealth infrastructure, especially for smaller, independent pharmacies with limited resources. Data security and privacy concerns also play a significant role in shaping negative perceptions. Pharmacists, like all healthcare providers, must adhere to strict regulations to safeguard patient health information (PHI). The perceived risk of data breaches or unauthorized access to PHI can lead to skepticism about the safety of eHealth systems. Furthermore, concerns related to system reliability, including potential downtime or technical glitches, can create doubts about the dependability of eHealth technology for critical pharmacy operations (Dong et al., 2018). Interestingly, some community pharmacists exhibit

ambivalent perceptions, recognizing both the advantages and disadvantages of eHealth technology. They acknowledge the potential benefits of improved patient care, streamlined processes, and enhanced communication while remaining cautious about the associated challenges. This ambivalence often reflects the delicate balance pharmacists must strike between adopting innovation to remain competitive and ensuring that patient care remains at the forefront of their practice (Hassell et al., 2006).

1.6.4 Challenges and Barriers of eHealth Technology Adoption

One of the foremost challenges is the significant financial burden associated with the acquisition and implementation of eHealth solutions. The initial capital required for infrastructure development, software acquisition, and staff training can be exorbitant, especially for resource-constrained healthcare organizations and underserved regions (Moghaddasi et al., 2018). Consequently, the cost of adoption becomes a critical factor influencing the pace and extent of eHealth technology implementation. Data security and privacy concerns loom large as critical barriers to eHealth adoption. The digitization of patient health records, electronic transmission of sensitive medical information, and the storage of PHI in electronic health records (EHRs) make healthcare organizations susceptible to cyberattacks and data breaches (Bates et al., 2014). Maintaining robust cybersecurity measures, safeguarding against unauthorized access, and adhering to stringent data protection regulations (such as HIPAA in the United States) are paramount. These security considerations not only require significant financial investments but also demand continuous vigilance and expertise in the face of evolving cybersecurity threats (Garde et al., 2017). Resistance to change within healthcare cultures and among healthcare professionals presents a substantial hurdle. The introduction of eHealth technology disrupts

established workflows, challenges traditional roles, and necessitates shifts in clinical practices (Holden et al., 2018). Healthcare providers and staff may encounter resistance due to concerns about the perceived complexity of new systems, the fear of reduced job satisfaction, or a lack of confidence in their ability to adapt to technological advancements. Overcoming this resistance necessitates comprehensive change management strategies, robust training programs, and clear communication channels to ensure that healthcare professionals are not only proficient in using eHealth tools but also embrace them as valuable assets. Regulatory complexities and varying legal frameworks present significant challenges for eHealth adoption. Different countries and regions have distinct regulations governing the use, storage, and sharing of electronic health information (El-Masri & Tarhini, 2017). Navigating this complex regulatory landscape while ensuring compliance with privacy laws and healthcare standards requires substantial effort and legal expertise. The absence of a unified regulatory framework across borders further complicates the global exchange of health data and hinders cross-border eHealth collaborations. Digital literacy and healthcare disparities introduce additional barriers, particularly for vulnerable populations and underserved communities. The effective utilization of eHealth technologies assumes a level of digital literacy and access to technology infrastructure that is not universally available (Griebel et al., 2018). Socioeconomic disparities, educational inequalities, and limited access to the internet and digital devices can exacerbate healthcare disparities and result in unequal access to the benefits of eHealth solutions.

1.6.5 Benefits and Advantages of eHealth Technology

The integration of eHealth technology into healthcare ecosystems heralds a plethora of benefits and advantages that have the potential to revolutionize the delivery of care, enhance patient outcomes, and optimize healthcare operations. One of the most salient advantages is improved

patient care and safety. eHealth technologies, such as electronic health records (EHRs) and computerized physician order entry (CPOE) systems, enable healthcare providers to access comprehensive patient information instantaneously, resulting in more informed clinical decisions. This access to real-time patient data reduces the likelihood of medication errors, adverse drug events, and diagnostic inaccuracies, thus enhancing overall patient safety (Bates et al., 2013).

Moreover, eHealth technology facilitates enhanced care coordination and continuity. The interoperability of EHRs and health information exchange (HIE) platforms enables seamless communication and data sharing among various healthcare providers involved in a patient's care continuum. This leads to improved coordination of services, reduced duplicative tests and procedures, and a more holistic approach to patient management, particularly crucial for those with complex medical conditions (U.S. Department of Health and Human Services, 2021).

Efficiency and workflow optimization are fundamental advantages of eHealth technology. Automation of administrative tasks, appointment scheduling, and billing processes streamlines healthcare operations, reducing administrative burdens and freeing up valuable time for healthcare professionals to focus on patient care (Hsiao et al., 2011). Telehealth and telemedicine solutions further contribute to efficiency by facilitating remote consultations and monitoring, reducing travel time and costs for both patients and providers. eHealth technologies are pivotal in empowering patients and fostering patient engagement. Access to personal health records and online patient portals enables individuals to actively participate in their healthcare management. Patients can view their medical records, access educational resources, schedule appointments, and communicate with healthcare providers securely through digital platforms (Gibson et al., 2017). This increased engagement leads to better health literacy, adherence to treatment plans, and a stronger partnership between patients and healthcare teams. Data-driven insights and

analytics represent another profound advantage of eHealth technology. The vast amount of data generated by EHRs, wearables, and remote monitoring devices can be harnessed for clinical decision support, predictive analytics, and population health management (Agaku et al., 2014). By analyzing this data, healthcare organizations can identify trends, predict disease outbreaks, and tailor interventions to improve public health. Furthermore, eHealth technology transcends geographical boundaries, improving access to care, especially in underserved and remote areas (Scott et al., 2018). Telemedicine and mobile health (mHealth) applications enable consultations with specialists located in distant regions, reducing healthcare disparities and enhancing healthcare access. In terms of cost-effectiveness and resource optimization, eHealth technologies offer substantial benefits. Electronic records reduce the need for paper-based documentation, storage, and associated administrative costs. Telehealth services can lead to cost savings by reducing hospital readmissions and emergency room visits (Nesbitt et al., 2010). Furthermore, eHealth technologies support proactive and preventive care, potentially reducing the economic burden associated with treating advanced or unmanaged chronic conditions. Last but not least, eHealth technology facilitates research and innovation in healthcare. The wealth of data available through EHRs and health information exchanges fuels medical research, enabling the development of evidence-based practices and the discovery of new treatments (Friedman et al., 2010). Innovations such as telehealth robots, wearable devices, and remote monitoring applications continue to expand the horizons of healthcare delivery.

1.6.6 Strategies for Addressing Barriers to Adoption of eHealth Technology

User Training and Education: One of the most critical strategies is to invest in comprehensive training and education programs for healthcare professionals, including physicians, nurses, and pharmacists, who will be using eHealth systems (Gagnon et al., 2016). Proper training ensures

that users are proficient in using the technology, which can reduce frustration and resistance to adoption. Additionally, continuous education programs help healthcare providers stay updated with evolving eHealth tools and best practices.

User-Centered Design: Incorporating user-centered design principles in the development of eHealth technology can significantly improve user acceptance (Holden & Karsh, 2010). Engaging end-users in the design process and considering their feedback helps create systems that align with their workflow, needs, and preferences. User-friendly interfaces and intuitive functionalities can reduce the learning curve and resistance to technology adoption.

Interoperability Standards: To address the challenge of interoperability, healthcare organizations and technology vendors should adhere to standardized data exchange protocols and health information exchange frameworks (Blumenthal & Tavenner, 2010). Ensuring that different eHealth systems can seamlessly communicate and share data is essential for coordinated patient care. Embracing interoperability standards reduces the barriers associated with data silos and promotes the adoption of integrated eHealth solutions.

Data Security and Privacy Measures: Implementing robust data security and privacy measures is paramount to address concerns related to the confidentiality of patient information (Adler-Milstein et al., 2017). Utilizing encryption, access controls, and audit trails can safeguard patient data. Compliance with regulations such as the Health Insurance Portability and Accountability Act (HIPAA) in the United States is essential. Effective communication of these security measures can enhance user trust and acceptance.

Financial Incentives and Support: Governments and healthcare organizations can provide financial incentives to encourage eHealth adoption among healthcare providers (Buntin et al., 2011). This can include reimbursement programs, grants, or subsidies to offset implementation

costs. Financial support helps organizations overcome budgetary constraints and motivates them to invest in eHealth technology.

Change Management and Leadership: Effective change management strategies and strong leadership are pivotal in navigating the organizational shifts associated with eHealth adoption (Raza et al., 2017). Engaging key stakeholders, setting clear goals, and creating a culture of innovation and adaptability can facilitate smoother transitions. Leaders who champion eHealth initiatives can inspire buy-in and commitment from staff.

Performance Evaluation and Feedback: Regularly assessing the impact of eHealth technology on healthcare outcomes and soliciting feedback from users is essential (Dugdale et al., 2010). Performance evaluations help identify areas for improvement and demonstrate the value of eHealth systems. Incorporating user feedback into system enhancements reinforces a user-centric approach.

Addressing Resistance to Change: Recognizing that resistance to change is common, healthcare organizations should proactively address this barrier (Holden & Karsh, 2010). Engaging in open communication, providing a platform for staff to voice concerns, and involving them in decision-making processes can mitigate resistance. Transparency about the benefits of eHealth adoption can help change perceptions.

Scalability and Flexibility: Healthcare organizations should consider the scalability and flexibility of eHealth solutions to accommodate future growth and evolving healthcare needs (Hersh et al., 2013). Scalable systems can adapt to changing patient volumes and requirements, ensuring long-term relevance and sustainability.

Patient Engagement: Involving patients in their healthcare journey through eHealth technologies can enhance adoption (Kruse et al., 2015). Educating patients about the benefits of these tools,

encouraging their active participation, and addressing their concerns about data security and privacy can promote patient acceptance.

1.6.7 Factors contribute to the adoption of eHealth technology in community pharmacy

The adoption of eHealth technology in community pharmacy practice is influenced by a multitude of factors that collectively shape the integration of these digital tools into the daily operations of pharmacies. These factors encompass both external and internal elements and play a pivotal role in facilitating the successful adoption of eHealth technology.

Regulatory Mandates and Incentives: External factors such as regulatory mandates and incentives have a significant impact on the adoption of eHealth technology in community pharmacies. Government policies and regulations, such as the Meaningful Use program in the United States (Blumenthal & Tavenner, 2010), can drive the adoption of electronic health records (EHRs) and e-prescribing systems by offering financial incentives to healthcare providers who demonstrate meaningful use of these technologies. Compliance with such mandates becomes a compelling factor for community pharmacies to incorporate eHealth solutions into their practice to ensure eligibility for incentives and avoid penalties.

Technological Advancements: The continuous evolution of technology, including advancements in software and hardware, creates an environment conducive to the adoption of eHealth technology. As eHealth solutions become more sophisticated, user-friendly, and cost-effective, community pharmacies are more inclined to invest in these technologies to improve their operations and enhance patient care (Wang, 2016). The availability of innovative tools that streamline medication management, patient engagement, and telehealth services can be a driving force in their adoption.

Improved Patient Care and Safety: The central mission of community pharmacies is to provide quality patient care and ensure medication safety. eHealth technologies offer tools that align with this mission by enhancing medication management, reducing medication errors, and promoting adherence to treatment plans (Abramson, Starfield, & Reeves, 2002). Pharmacists can use EHRs and clinical decision support systems to access comprehensive patient records, identify potential drug interactions, and deliver personalized medication counseling. The potential to improve patient outcomes and safety serves as a strong motivator for adopting eHealth technology.

Patient Demand and Engagement: Patients' increasing demand for digital healthcare services and their growing comfort with technology-driven solutions influence community pharmacies' decision to adopt eHealth technology (Nouri et al., 2020). Patients now expect the convenience of services such as online prescription refills, telepharmacy consultations, and mobile health applications. To remain competitive and meet these expectations, community pharmacies adopt eHealth tools that enable them to engage with patients through digital channels, enhancing patient satisfaction and loyalty.

Interprofessional Collaboration: Collaborative healthcare models that emphasize interprofessional communication and coordination have gained prominence. eHealth technology facilitates seamless communication and data sharing among healthcare providers, including pharmacists, physicians, and nurses. Community pharmacies increasingly adopt eHealth solutions to integrate into these collaborative care models (Johnson et al., 2011). Enhanced communication among healthcare teams supports better patient care and encourages the adoption of eHealth technology.

Data-Driven Decision Making: The ability to collect, analyze, and leverage data is crucial for informed decision-making in pharmacy practice. eHealth technologies offer robust data analytics

capabilities that empower community pharmacies to monitor and evaluate patient outcomes, medication adherence, and operational performance (Liu et al., 2021). Pharmacists can use data-driven insights to optimize their services and tailor interventions, making eHealth adoption a strategic choice.

Competitive Advantage: In an increasingly competitive healthcare landscape, community pharmacies seek ways to differentiate themselves and offer unique value to patients. Adopting eHealth technology not only enhances efficiency and patient care but also provides a competitive advantage (Huang & Hu, 2016). Pharmacies that embrace digital solutions can stand out in the market and attract tech-savvy patients.

1.7 Objectives of the study

1.7.1 General objective

The objective of this study is to investigate the attitude and belief of pharmacists towards the adoption of eHealth technology in community pharmacy practice in Benin City, Edo state, Nigeria.

1.7.2 The specific objectives of the study are;

1: To determine the prevalence and current level of adoption of eHealth technology in community pharmacy practice in Benin City, Edo state.

2: To identify the factors that contribute to the adoption of eHealth technology in community pharmacy practice, including technological, organizational, and regulatory factors.

3: To explore the opinions and attitudes of pharmacists towards the integration of eHealth technology in community pharmacy practice in Benin City.

4: To identify the difficulties and challenges encountered in implementing eHealth technology in community pharmacy practice, including technical, financial, and operational barriers.

5: To assess the potential advantages and benefits of incorporating eHealth technology in community pharmacy practice, focusing on improved medication management, patient care, communication, and outcomes.

CHAPTER TWO

2.0 METHODS

2.1 STUDY DESIGN: This study employed a cross-sectional research design to explore the attitudes and beliefs of pharmacists concerning the adoption of eHealth technology in community pharmacy practice. This design facilitated the collection of valuable information about the prevalence, factors, opinions, difficulties, and potential benefits related to eHealth technology adoption among pharmacists.

2.2 STUDY AREA: The study area for this research is Benin City, located in Edo State, Nigeria. Benin City was selected as the primary study area due to its representation of a diverse and active community pharmacy practice. It serves as an ideal location for conducting this investigation into the attitudes and beliefs of pharmacists regarding the adoption of eHealth technology in community pharmacy practice.

2.3 STUDY POPULATION: The study population for this research consisted of pharmacists practicing in Benin City, Edo State, Nigeria. Pharmacists engaged in various aspects of community pharmacy practice, including dispensing medications, counseling patients, and managing pharmaceutical services, were considered eligible participants for the study. The choice of Benin City as the study location was based on its significance as one of the major urban centers in Edo State, with a notable concentration of community pharmacies.

2.4 SAMPLE SIZE: The sample size for this research comprised 125 pharmacists practicing in Benin City, Edo State, Nigeria. The selection of this sample size aimed to provide a sufficiently representative group of pharmacists to achieve the study's objectives effectively. Benin City was chosen as the study area due to its status as a major urban center in Edo State, housing a significant number of community pharmacies. The sample size was determined based on

practical considerations, including the feasibility of data collection within the research timeframe and available resources. While a larger sample size might have been desirable, the choice of 125 participants was deemed sufficient to obtain meaningful insights into the attitudes and beliefs of pharmacists regarding the adoption of eHealth technology in community pharmacy practice.

2.5 INCLUSION CRITERIA:

- Pharmacists currently working at community pharmacies in Benin City.
- Pharmacists who had been practicing for a minimum period of six months.
- Pharmacists who were willing to participate in the study.

2.6 EXCLUSION CRITERIA:

- Pharmacists who did not meet the inclusion criteria.
- Pharmacists who were not available or unable to provide informed consent.

2.7 RESEARCH INSTRUMENT: The research instrument was a hard copy questionnaire designed to assess the attitudes and beliefs of pharmacists towards the adoption of eHealth technology in community pharmacy practice. The questionnaire included questions related to the pharmacist's current use of technology, perceptions of eHealth technology, barriers and facilitators to adoption, and potential benefits and challenges associated with implementing eHealth technology in community pharmacy settings.

2.8 VALIDITY OF THE INSTRUMENT: The research instrument underwent content validity assessment by the researcher's supervisor and two lecturers from the Department of Clinical and Pharmacy Practice, University of Benin, Benin-City. Their feedback and suggestions were incorporated to ensure the instrument's relevance, comprehensibility, and ability to accurately capture the desired information.

2.9 SAMPLING TECHNIQUE: Convenience sampling was used to select participants. Pharmacists working at community pharmacies in Benin City were selected to participate based on their availability and willingness to take part.

2.10 DATA COLLECTION: The process of gathering data involved the distribution of physical questionnaires to pharmacists participating in the study at their respective community pharmacies. Adequate time was allocated for the completion of the questionnaires, and any queries or requests for additional information were promptly addressed by the research team. Among the 140 questionnaires disseminated, 125 were duly completed and returned, serving as the dataset for subsequent percentage calculations. These questionnaires were personally administered by the researcher, with respondents actively encouraged to provide candid and impartial responses.

2.11 DATA ANALYSIS: The collected data was analyzed using SPSS version 24, a statistical software package. Descriptive statistics were used to summarize the attitudes and beliefs of pharmacists towards the adoption of eHealth technology.

2.12 ETHICAL CONSIDERATION: The study adhered to ethical guidelines and obtained approval from the relevant ethics committee. Informed consent was obtained from all participating pharmacists, ensuring confidentiality, privacy, and the right to withdraw from the study at any time without penalty. The data were anonymized and stored securely to maintain participant confidentiality.

CHAPTER THREE

3.0 RESULTS

Summary Statistics							
		Gender	Age	Marital status	Level of Practice	Years of Practice	Area of Practice
N	Valid	125	125	125	125	125	125
	Missing	0	0	0	0	0	0

3.1 Frequency table for Socio-demographics

Variables		Frequency	Percentage
Gender	Male	82	65.6
	Female	43	34.4
Age	18-29yrs	61	48.8
	30-49yrs	64	51.2
Marital status	Single	89	71.2
	Married	36	28.8
Level of practice	Intern pharmacist	13	10.4
	Superintendent pharmacist	77	61.6
	Locum pharmacist	26	20.8
	Pharmacy manager	9	7.2
Years of practice	Less than 1 year	27	21.6
	1-3yrs	53	42.4
	4-10yrs	41	32.8
	11yrs and above	4	3.2
Area of practice	Community	122	97.6
	Hospital	2	1.6
	Industry	1	0.8

Table 3.2: The prevalence of eHealth technology in community pharmacy practice in Benin City

S/N	**Prevalence of eHealth technology**	**Excellent**	**Good**	**Average**	**Poor**	**Very poor**	**Weighted mean**
1	To what extent do you believe eHealth technology is integrated into daily operations	1 (0.8)	23(18.4)	49(39.2)	37(29.6)	15(12)	2.664
2	How well are is eHealth technology utilized to enhance patient care	1(0.8)	23(18.4)	61(48.8)	27(21.6)	13(10.4)	2.776
3	How effective is the use of eHealth technology in improving medication management and safety	10(8)	29(23.2)	45(36)	33(26.4)	8(6.4)	3
4	Overall, how satisfied are you with the level of eHealth technology adoption and utilization in practice	1(0.8)	28(22.4)	44(35.2)	28(22.4)	24(19.2)	2.634

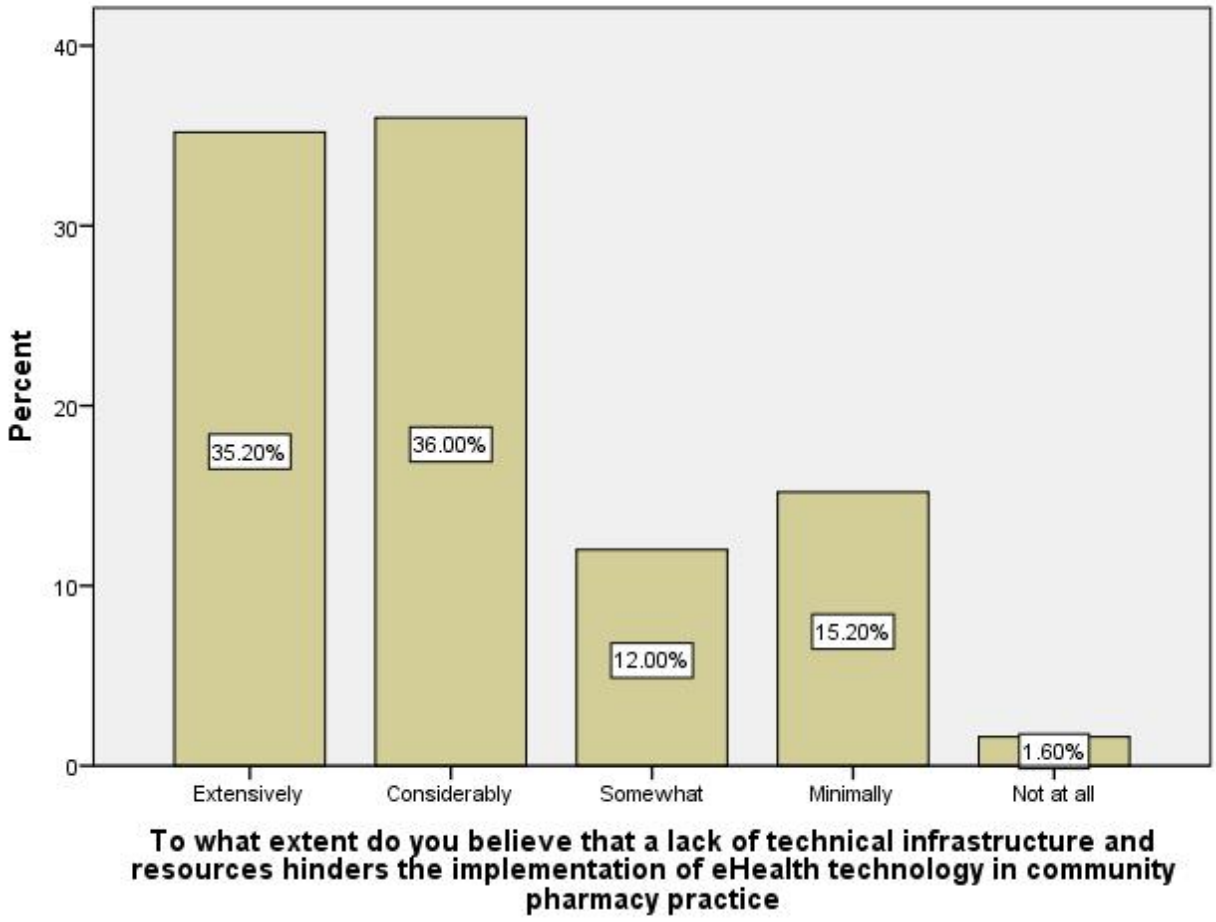
Table 3.3: The factors that contribute to the adoption of eHealth technology in community pharmacy practice

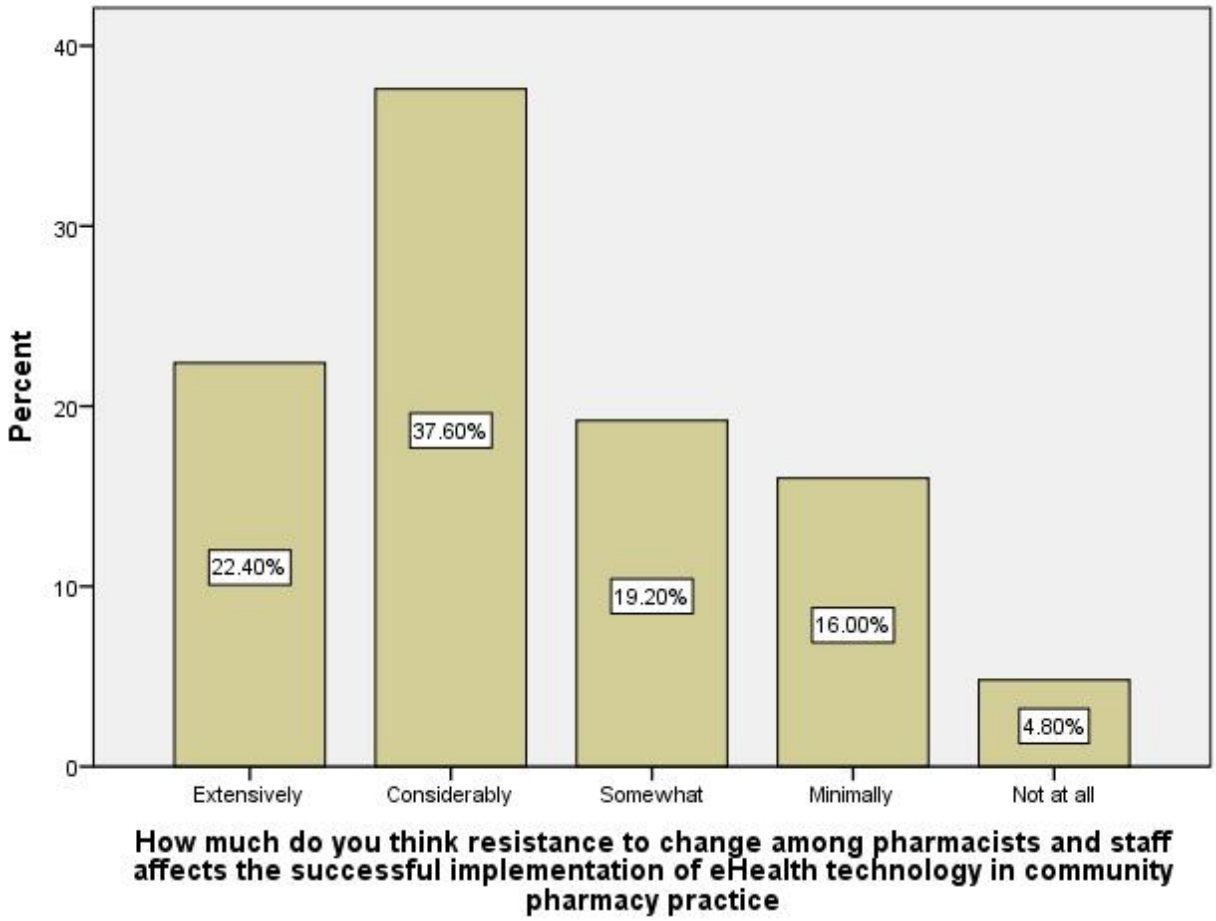
S/N	Factors that contribute to the adoption of eHealth technology	Very significant	Significant	Moderately	Minimally	Very minimally	Weighted mean
1.	To improved patient care and outcomes	24(19.2)	40(32)	35(28)	22(17.6)	4(3.2)	3.464
2.	For enhancement of medication management and safety	25(20)	46(36.8)	28(22.4)	21(16.8)	5(4)	3.52
3.	In your opinion, to what extent do cost savings and efficiency gains	31(24.8)	39(31.2)	31(24.8)	19(15.2)	5(4)	3.576
4.	Regulatory requirements and government initiatives	14(11.2)	35(28)	31(24.8)	31(24.8)	14(11.2)	3.032
5.	The availability and accessibility of technological infrastructure and resources	40(32)	42(33.6)	16(12.8)	16(12.8)	11(8.8)	3.672

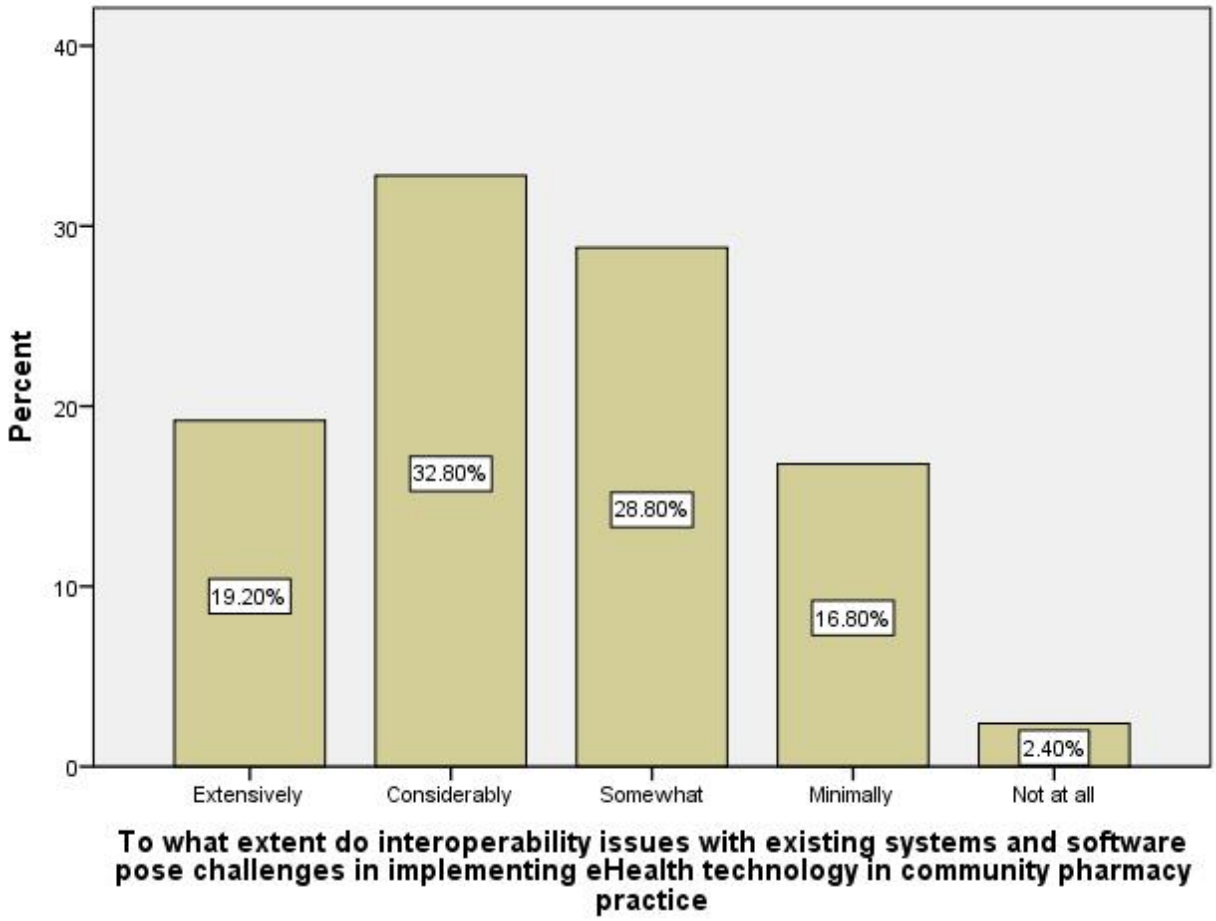
Table 3.4: opinions and attitudes of pharmacists towards the integration of eHealth technology in community pharmacy practice

S/N	Attitudes of pharmacists towards eHealth integration	Extremely satisfying	Very satisfying	Moderately satisfying	Slightly satisfying	Not at all satisfying	Weighted mean
1.	In improving patient care and outcomes	24(19.2)	47(37.6)	27(21.6)	16(12.8)	11(8.8)	3.456
2.	The integration of eHealth technology enhances medication management and safety	27(21.6)	64(51.2)	23(18.4)	9(7.2)	2(1.6)	3.84
3.	Suitable for improving workflow efficiency and task management	31(24.8)	58(46.4)	18(14.4)	15(12)	3(2.4)	3.792
4.	It improves better communication and collaboration with other healthcare providers in community pharmacy practice	29(23.2)	58(46.4)	24(19.2)	12(9.6)	2(1.6)	3.8
5.	How satisfying do you find the overall impact of integrating eHealth technology in community pharmacy practice	25(20)	51(40.8)	26(20.8)	17(13.6)	5(4)	3.568

Figure 1-5: Bar chart showing the difficulties and challenges encountered in implementing eHealth technology in community pharmacy practice




Percent
40
30
20
10
0
22.40%
37.60%
19.20%
16.00%
4.80%
Extensively
Considerably
Somewhat
Minimally
Not at all
How much do you think resistance to change among pharmacists and staff affects the successful implementation of eHealth technology in community pharmacy practice


Percent
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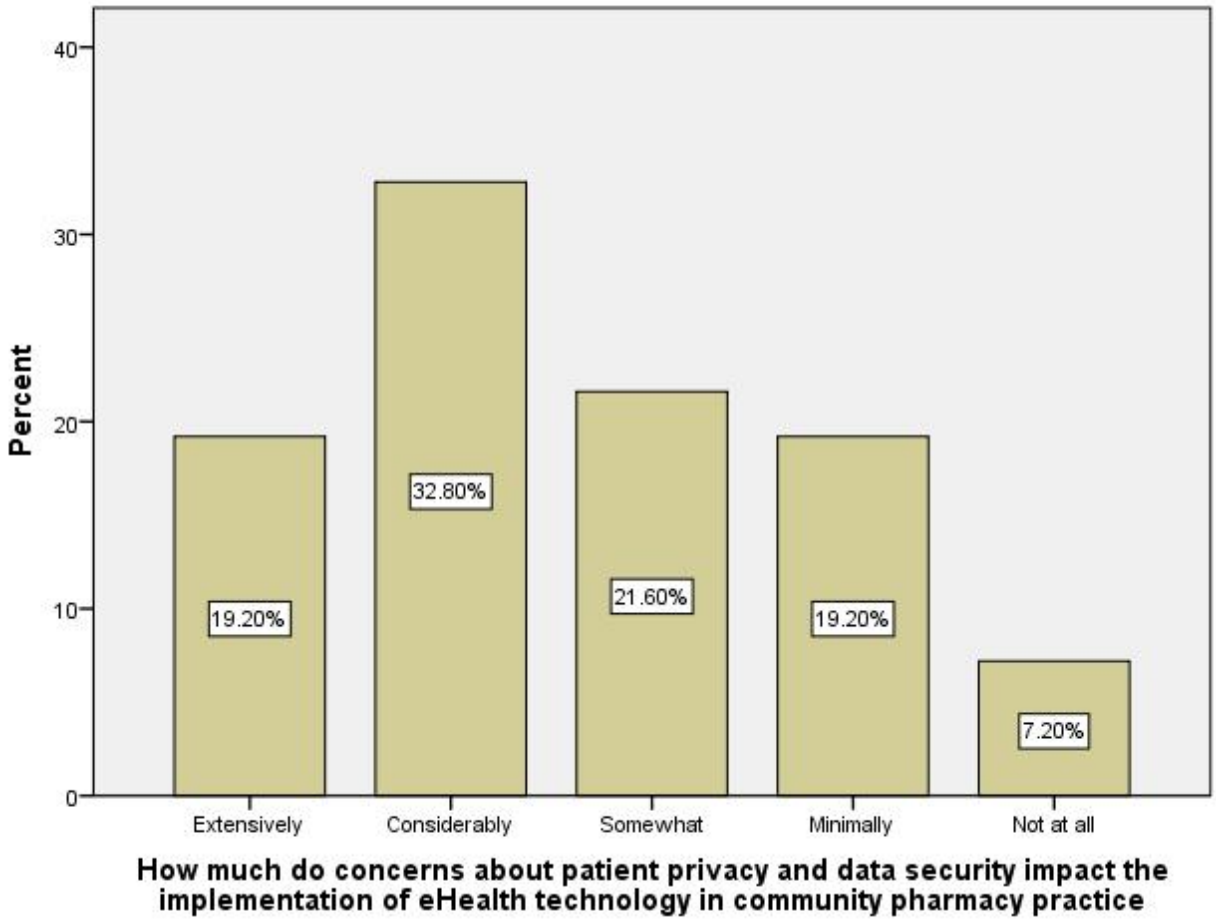
30
20
10
0
19.20%
32.80%
28.80%
16.80%
2.40%
Extensively
Considerably
Somewhat
Minimally
Not at all
To what extent do interoperability issues with existing systems and software pose challenges in implementing eHealth technology in community pharmacy practice


Percent
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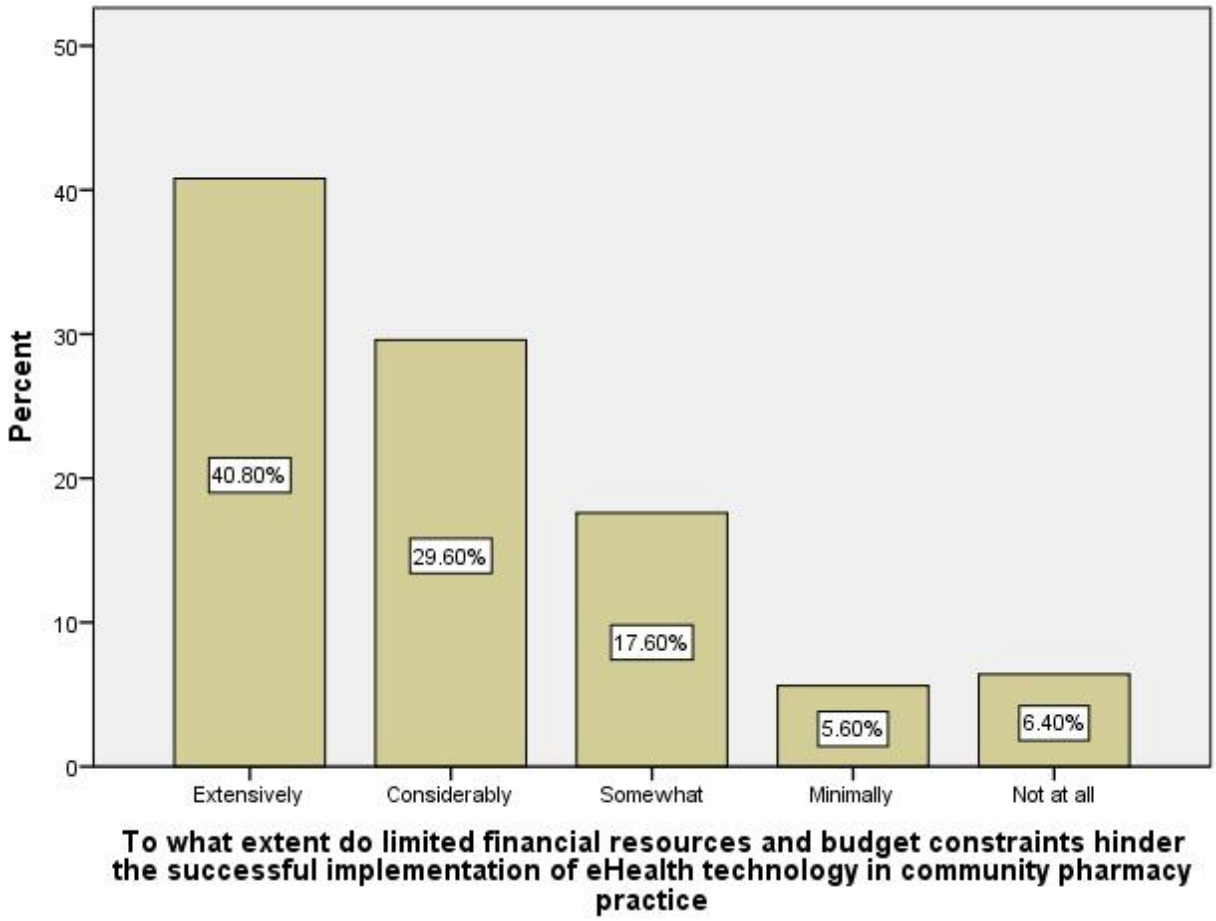
30
20
10
0
19.20%
32.80%
21.60%
19.20%
7.20%
Extensively
Considerably
Somewhat
Minimally
Not at all
How much do concerns about patient privacy and data security impact the implementation of eHealth technology in community pharmacy practice


Percent
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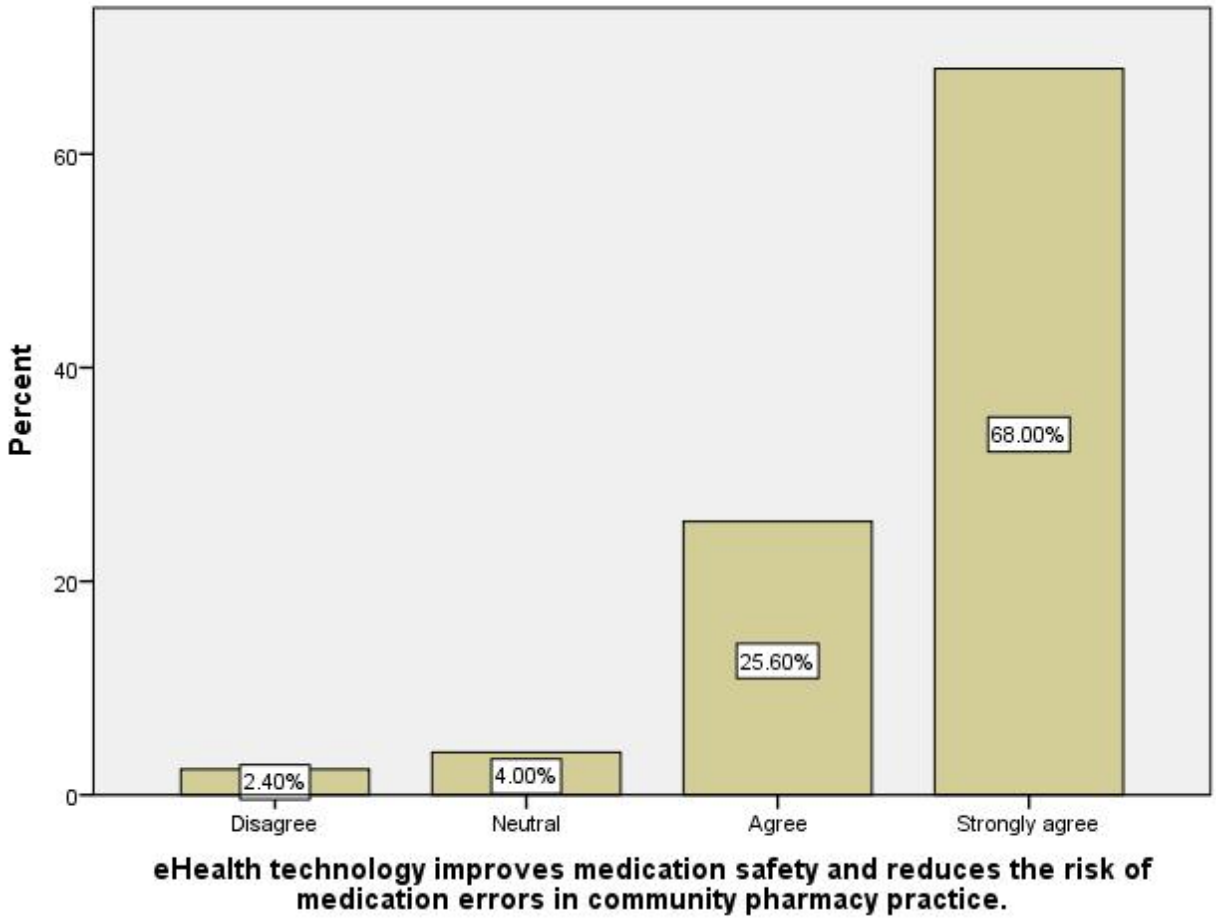
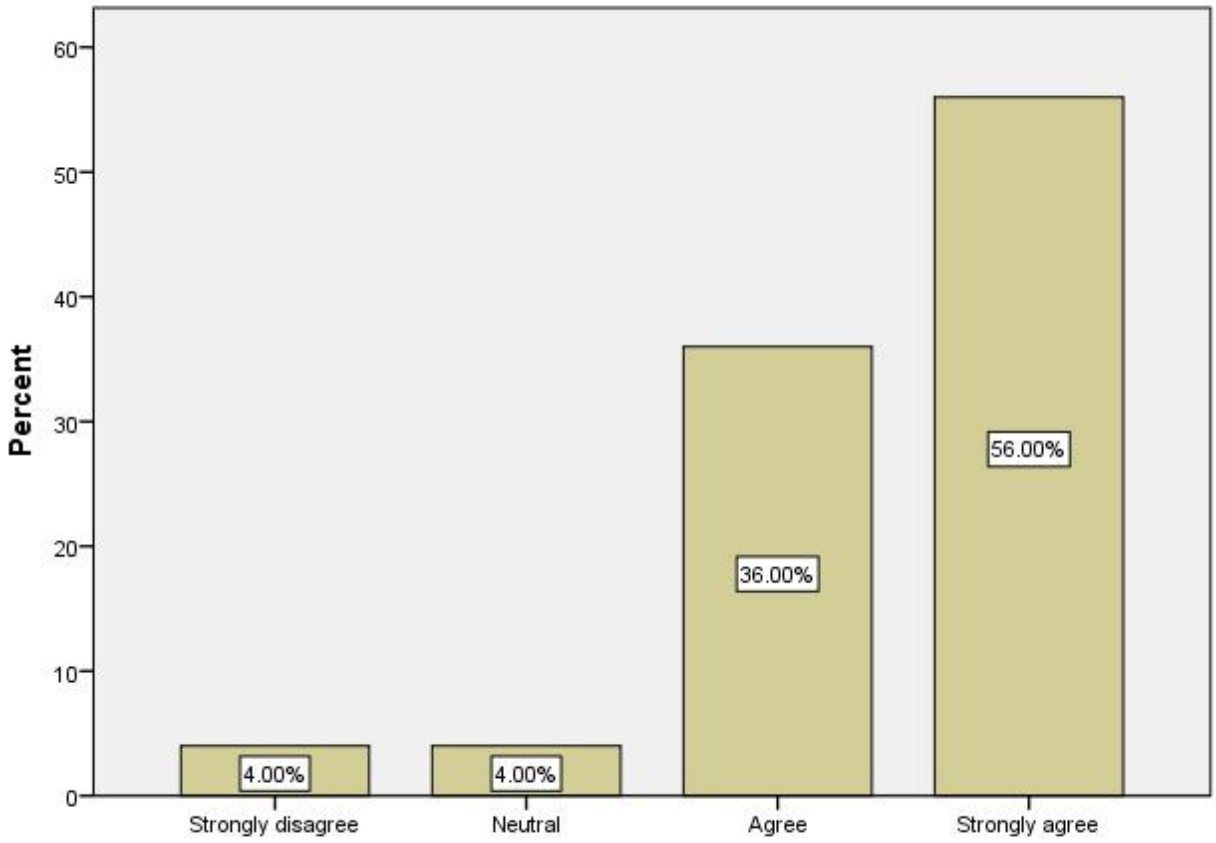
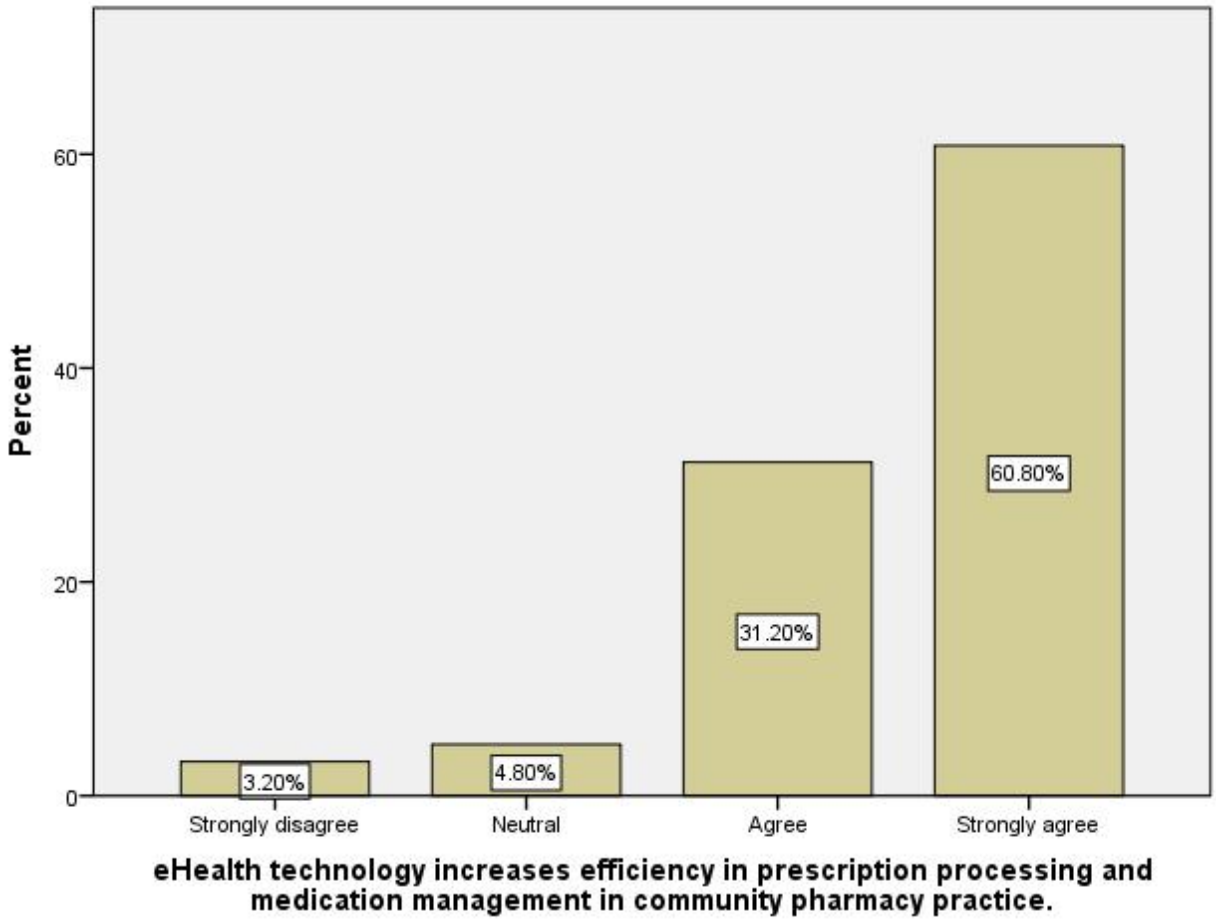
20
10
0
40.80%
29.60%
17.60%
5.60%
6.40%
Extensively
Considerably
Somewhat
Minimally
Not at all
To what extent do limited financial resources and budget constraints hinder the successful implementation of eHealth technology in community pharmacy practice

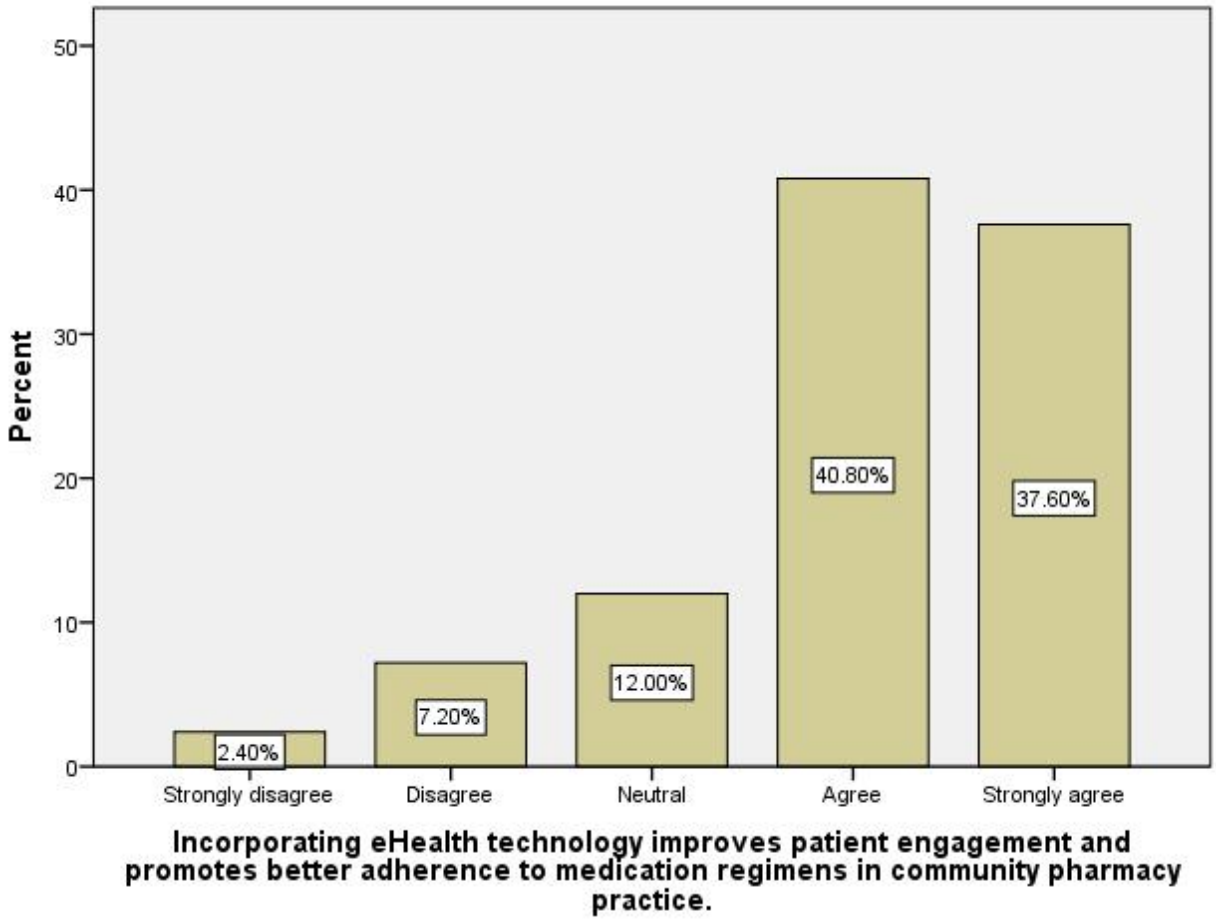
Figure 6-10: Bar chart showing the advantages and benefits of incorporating eHealth technology in community pharmacy practice





Incorporating eHealth technology enhances communication and collaboration among healthcare providers in community pharmacy practice.


Percent
60
40
20
0
3.20%
4.80%
31.20%
60.80%
Strongly disagree
Neutral
Agree
Strongly agree
eHealth technology increases efficiency in prescription processing and medication management in community pharmacy practice.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10
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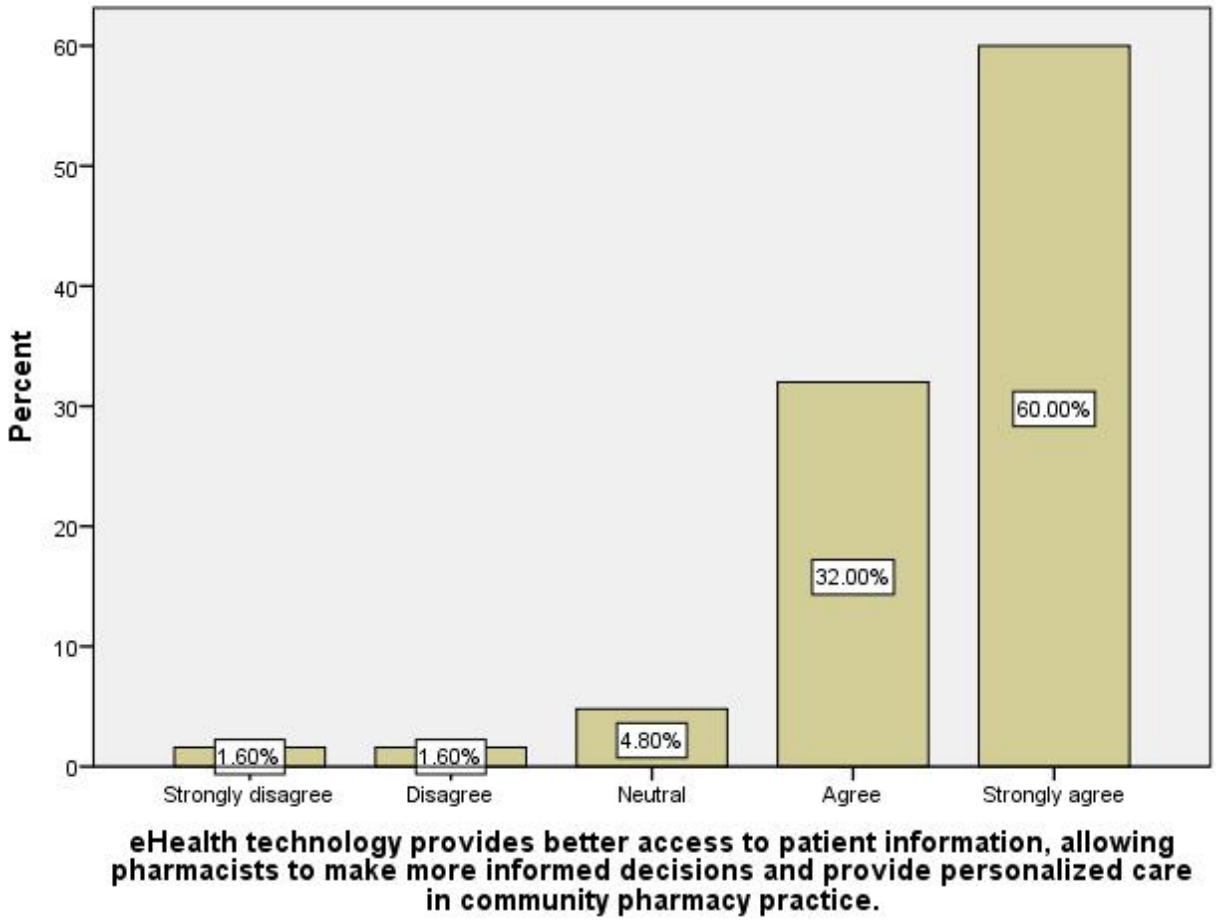
2.40%
7.20%
12.00%
40.80%
37.60%
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Incorporating eHealth technology improves patient engagement and promotes better adherence to medication regimens in community pharmacy practice.



eHealth technology provides better access to patient information, allowing pharmacists to make more informed decisions and provide personalized care in community pharmacy practice.

Table 3.5: Association between demographics and use of Ehealth technology

DEMOGRAPHICS		USE OF EHEALTH					Total	P-VALUE
	Variables	To what extent do you believe eHealth technology is integrated into daily operations in community pharmacies in Benin City						
		Excellent	Good	Average	Poor	Very poor		
Gender	Male	1	12	34	22	13	82	.182
	Female	0	11	15	15	2	43	.138
		In your opinion, how effective is the use of eHealth technology in improving medication management and safety in community pharmacy practice in Benin City						
		Excellent	Good	Average	Poor	Very poor		
	Male	4	26	29	19	4	82	.016
	Female	6	3	16	14	4	43	.009

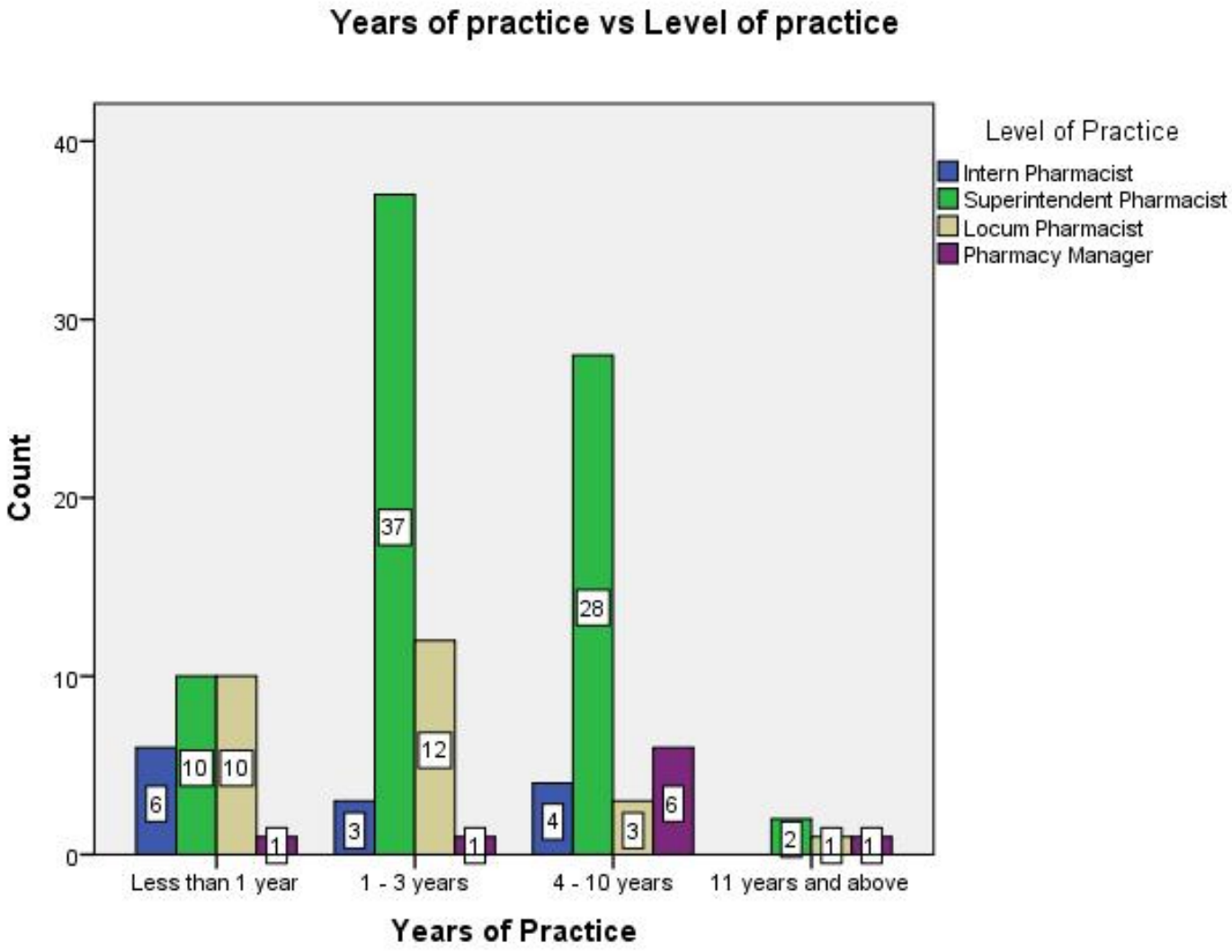
Table 3.6:

DEMOGRAPHICS		USE OF EHEALTH					Total	P-VALUE
	Variables	To what extent do you believe eHealth technology is integrated into daily operations in community pharmacies Benin City						
		Excellent	Good	Average	Poor	Very poor		
Years of practice	Less than 1 year	0	7	13	6	1	27	
	1 - 3 years	1	10	23	15	4	53	
	4 - 10 years	0	6	12	15	8	41	0.207
	11 years and above	0	0	1	1	2	4	0.239
		In your opinion, how effective is the use practice in Benin City of eHealth technology in improving medication management and safety in community pharmacy						
		Excellent	Good	Average	Poor	Very poor		
	Less than 1 year	3	8	7	9	0	27	
	1 - 3 years	5	8	25	15	0	53	
	4 - 10 years	2	12	13	6	8	41	.002
	11 years and above	0	1	0	3	0	4	.001

Table 3.7:

DEMOGRAPHICS	USE OF EHEALTH					Total	P-VALUE
	Variables	To what extent do you believe that the integration of eHealth technology enhances medication management and safety in community pharmacy practice						
		extremely satisfying	very satisfying	moderately satisfying	slightly satisfying	not at all satisfying		
Level of Practice	Less than 1 year	0	6	3	4	0	13	
	1 - 3 years	19	38	15	3	2	77	
	4 - 10 years	6	16	4	0	0	26	.042
	11 years and above	2	4	1	2	0	9	.041
		How satisfying do you find the use of eHealth technology in community pharmacy practice for improving workflow efficiency and task management					Total	
		Extremely satisfying	Very satisfying	Moderately satisfying	Slightly satisfying	Not at all satisfying		
	Less than 1 year	0	5	6	2	0	13	
	1 - 3 years	24	37	7	6	3	77	
	4 - 10 years	6	14	4	2	0	26	.000
	11 years and above	1	2	1	5	0	9	.003
		To what extent do you think that the integration of eHealth technology improves communication and collaboration with other healthcare providers in community pharmacy practice					Total	
		Extremely satisfying	Very satisfying	Moderately satisfying	Slightly satisfying	Not at all satisfying		
	Less than 1 year	0	8	1	4	0	13	
	1 - 3 years	17	40	13	7	0	77	
	4 - 10 years	9	10	7	0	0	26	.042
	11 years and above	3	0	3	1	2	9	.041

Figure 11: Bar chart showing years of practice vs level of practice



CHAPTER FOUR

4.0 DISCUSSION

Table 3.2 presented findings regarding the prevalence of eHealth technology in community pharmacy practice in Benin City. These findings shed light on pharmacists' perceptions of various aspects related to eHealth technology adoption and utilization. The data revealed diverse sentiments among respondents, with weighted means providing an overview of the overall sentiment in each category. Concerning the integration of eHealth technology into daily pharmacy operations, the results indicated that a substantial proportion of pharmacists viewed this integration as either average or poor. This suggested that there was room for improvement in seamlessly incorporating eHealth tools into their routine tasks. The weighted mean associated with this category pointed to a moderate level of integration. In terms of utilizing eHealth technology to enhance patient care, pharmacists' responses again reflected a similar trend. While a significant number of respondents considered it as average or good, there was evident scope for enhancement. The weighted mean indicated a moderate level of utilization. When evaluating the effectiveness of eHealth technology in improving medication management and safety, a noteworthy portion of pharmacists rated it as average or poor. This suggested that pharmacists might not have been entirely convinced of the technology's impact on these critical aspects of pharmacy practice. However, the relatively higher weighted mean compared to other categories implied that while some pharmacists found it highly effective, there was a wide range of opinions on its overall impact. The question about overall satisfaction with the adoption and utilization of eHealth technology revealed mixed sentiments among pharmacists. A significant portion expressed moderate satisfaction or dissatisfaction. This mixed sentiment could be attributed to perceived gaps in integration, utilization, and effectiveness of eHealth technology in

practice. The weighted mean for this category indicated a moderate level of satisfaction, signifying that there was room for enhancing pharmacists' overall experience with eHealth solutions. This table highlighted the need for targeted efforts to improve the integration, utilization, and effectiveness of eHealth technology in community pharmacy practice in Benin City. While some pharmacists held positive views, a substantial portion recognized areas for improvement. Addressing training needs, streamlining technology integration, and demonstrating clear benefits in medication management and safety could contribute to a more favorable perception of eHealth technology among pharmacists in the region.

Table 3.3 presents insightful data regarding the factors contributing to the adoption of eHealth technology in community pharmacy practice in Benin City, with a particular emphasis on the highest figures within each category. In assessing the belief about the contribution of improved patient care and outcomes to eHealth technology adoption, the highest figure is "Significantly," with 40 pharmacists (32.0%) holding this view. This indicates that a substantial portion of respondents recognized the significant impact of enhanced patient care on the adoption of eHealth technology. Furthermore, "Very significantly" contributed significantly, with 24 pharmacists (19.2%) endorsing this perspective. The emphasis on these categories underscores the paramount importance of patient care in driving the adoption of eHealth technology within community pharmacy practice. The majority recognizing its significance suggests a strong alignment between technology adoption and improving patient outcomes. When considering the influence of enhanced medication management and safety on eHealth technology adoption, the highest figure again falls within the "Significantly" category, with 46 pharmacists (36.8%) expressing this view. This signifies that a substantial portion of respondents acknowledged the substantial role of enhanced medication management and safety in driving the adoption of

eHealth technology. Additionally, "Very significantly" also played a substantial role, with 25 pharmacists (20.0%) supporting this perspective. These emphasized categories highlight the critical nature of medication management and safety as driving forces behind eHealth technology adoption in community pharmacy practice. This recognition underscores the pivotal role of technology in ensuring safe and effective medication management.

Turning to the significance of cost savings and efficiency gains, the highest figure again falls within the "Significantly" category, with 39 pharmacists (31.2%) believing in its substantial role. This indicates that a noteworthy portion of respondents perceived cost savings and efficiency gains as significant drivers of eHealth technology adoption. Furthermore, "Very significantly" also made a substantial contribution, with 31 pharmacists (24.8%) endorsing this perspective. These highlighted categories underscore the economic and operational considerations that motivate the adoption of eHealth technology in community pharmacy practice, emphasizing the desire for more efficient and cost-effective processes. Regarding the impact of regulatory requirements and government initiatives, the highest figure is "Moderately," with 31 pharmacists (24.8%) holding this view. This suggests that a considerable portion of respondents believed that regulatory requirements and government initiatives had a moderate influence on eHealth technology adoption. Furthermore, "Significantly" also played a substantial role, with 35 pharmacists (28.0%) endorsing this perspective. These figures emphasize the role of regulatory guidance and governmental policies in shaping the adoption landscape, even if not seen as overwhelmingly significant. It indicates that while regulations and initiatives are not the sole drivers, they do contribute significantly to the adoption process. When considering the influence of the availability and accessibility of technological infrastructure and resources, the highest figure is "Significantly," with 42 pharmacists (33.6%) expressing this view. This underscores

that a substantial portion of respondents recognized the significant role of technological infrastructure and resources in driving eHealth technology adoption. Additionally, "Very significantly" also played a crucial role, with 40 pharmacists (32.0%) endorsing this perspective. These emphasized categories highlight the fundamental importance of having the necessary technological foundation to facilitate the adoption of eHealth solutions within community pharmacy practice. The data from Table 3.3 underscores the multifaceted factors contributing to the adoption of eHealth technology in community pharmacy practice. While several factors are recognized as significant, the highest figures in each category bring particular attention to the pivotal roles of enhanced patient care, medication management and safety, cost savings, regulatory requirements, government initiatives, and the availability of technological infrastructure. These findings illustrate the complex interplay of factors influencing the adoption of eHealth technology, reflecting the dynamic landscape of modern pharmacy practice.

Table 3.4 provided insights into pharmacists' attitudes and opinions regarding the integration of eHealth technology into community pharmacy practice during the study period. In terms of improving patient care and outcomes, a significant proportion of pharmacists expressed satisfaction, with many finding it extremely satisfying or very satisfying. This indicated a positive belief among pharmacists that eHealth technology had the potential to enhance patient care and contribute to better health outcomes. Regarding medication management and safety, pharmacists exhibited even more favorable opinions. The responses showed that a substantial majority of pharmacists were satisfied with the integration of eHealth technology in this context. This underscored the belief that eHealth technology was effective in improving medication management and safety, crucial aspects of pharmacy practice. Concerning its suitability for improving workflow efficiency and task management, pharmacists' responses were generally

positive, although not as overwhelmingly so as in the previous categories. Nevertheless, a significant majority expressed satisfaction, highlighting those pharmacists perceived eHealth technology as a valuable tool for streamlining their daily tasks and workflow. In terms of its impact on communication and collaboration with other healthcare providers, pharmacists displayed a positive sentiment. A considerable percentage found it extremely satisfying or very satisfying, indicating that eHealth technology was seen as a facilitator of effective communication and collaboration in community pharmacy practice. Lastly, when evaluating the overall impact of integrating eHealth technology, the data showed that pharmacists, in general, held positive views. A significant proportion expressed satisfaction, with a substantial percentage finding it extremely satisfying or very satisfying. This suggested that pharmacists believed eHealth technology had a favorable overall impact on their profession. This revealed that pharmacists generally held positive attitudes and opinions toward the integration of eHealth technology into community pharmacy practice during the study period. They perceived eHealth technology as a valuable tool for enhancing patient care, medication management and safety, workflow efficiency, communication, and collaboration with other healthcare providers. These positive attitudes reflected the potential benefits that eHealth technology could bring to the field of pharmacy practice in terms of enhancing patient care, safety, and overall efficiency.

The **table 3.5** illustrated the relationship between gender and pharmacists' perceptions of the integration of eHealth technology into daily operations in community pharmacies in Benin City. The results suggested that there was no statistically significant association between gender and this aspect of eHealth technology adoption, as indicated by a p-value of .182. Both male and female pharmacists generally perceived the integration of eHealth technology as average, with a few considering it good. This finding indicated that gender did not significantly influence how

pharmacists perceived the level of eHealth technology integration in their daily operations. Furthermore, the table examined the relationship between gender and pharmacists' perceptions of the effectiveness of eHealth technology in improving medication management and safety in community pharmacy practice. In this case, the results indicated a statistically significant association between gender and perception, with a p-value of .016. Female pharmacists, on average, had a more positive view of the effectiveness of eHealth technology in medication management and safety compared to male pharmacists. A higher proportion of female pharmacists rated it as excellent or good, while male pharmacists tended to rate it lower. While gender did not appear to influence pharmacists' perceptions of eHealth technology integration into daily operations significantly, it did have a statistically significant impact on their views regarding the effectiveness of eHealth technology in medication management and safety. Female pharmacists tended to have a more positive perception of its effectiveness compared to their male counterparts. These findings suggested that gender-related factors may have played a role in how pharmacists evaluated the impact of eHealth technology on medication management and safety.

The **table 3.6** displayed the association between years of practice among pharmacists and their perceptions regarding the integration of eHealth technology into daily operations in community pharmacies in Benin City. The results indicated no statistically significant association between years of practice and pharmacists' perceptions of eHealth technology integration, as evidenced by a p-value of 0.207. Regardless of their years of experience, pharmacists generally rated the integration of eHealth technology as average, with some considering it good. Additionally, the table explored the relationship between years of practice and pharmacists' opinions on the effectiveness of eHealth technology in improving medication management and safety in community pharmacy practice. The results revealed a statistically significant association between

years of practice and perception, with a p-value of 0.002. Pharmacists with 4 to 10 years of experience and those with 11 years and above had more positive views on the effectiveness of eHealth technology compared to those with less than 1 year or 1 to 3 years of experience. They were more likely to rate it as excellent or good, while those with fewer years of practice tended to rate it lower. These findings suggest that the duration of practice had a significant influence on pharmacists' perceptions of the effectiveness of eHealth technology in medication management and safety. Pharmacists with more extensive experience tended to have a more positive view of eHealth technology's impact, possibly because they had witnessed its benefits over time. On the other hand, those with fewer years of practice may need more exposure and experience to fully appreciate the advantages of eHealth technology in their daily operations. While years of practice did not significantly affect pharmacists' perceptions of eHealth technology integration, it did play a role in their views on its effectiveness. More experienced pharmacists generally held more favorable opinions about the benefits of eHealth technology. This highlights the importance of providing training and support to pharmacists, particularly those with less experience, to ensure that they fully embrace and utilize eHealth technology to enhance medication management and safety in community pharmacy practice.

The results presented in **table 3.7** shed light on the relationship between pharmacists' years of practice and their attitudes towards the integration of eHealth technology in community pharmacy practice. The table examined three crucial aspects: the enhancement of medication management and safety, the improvement of workflow efficiency and task management, and the facilitation of communication and collaboration with other healthcare providers. Regarding medication management and safety, the data revealed a statistically significant association (p-value: 0.042) between the level of practice and pharmacists' perceptions. Pharmacists with 1 to 3

years of experience displayed the highest satisfaction levels, with 57% rating eHealth technology as very satisfying in this aspect. This group was followed by those with 4 to 10 years of experience. In contrast, pharmacists with either less than 1 year or 11 years and above of experience exhibited lower levels of satisfaction, indicating that eHealth technology was perceived as more beneficial for those with moderate experience. Similarly, the results concerning workflow efficiency and task management showed a statistically significant relationship (p-value: 0.000) with the level of practice. Pharmacists with 1 to 3 years of experience expressed the highest satisfaction levels, with 61% considering eHealth technology as very satisfying for this purpose. Those with 4 to 10 years of experience also reported notable satisfaction. Conversely, pharmacists with less than 1 year or 11 years and above of experience were less satisfied, suggesting that eHealth technology was more efficient in improving workflow and task management for those with moderate experience. The data on communication and collaboration with other healthcare providers demonstrated a statistically significant association (p-value: 0.042) with the level of practice. Pharmacists with 1 to 3 years of experience reported the highest satisfaction levels, with 52% considering eHealth technology as very satisfying for enhancing communication and collaboration. Pharmacists with 4 to 10 years of experience also showed significant satisfaction. Conversely, those with less than 1 year or 11 years and above of experience displayed lower satisfaction levels, indicating that eHealth technology was perceived as more effective in facilitating communication and collaboration among pharmacists with moderate experience. These findings highlight the impact of pharmacists' years of practice on their satisfaction with eHealth technology integration in community pharmacy practice. Those with 1 to 3 years of experience consistently demonstrated higher levels of satisfaction across all aspects studied. This suggests that familiarity and

adaptability to new technologies may contribute to their positive attitudes. Consequently, when implementing eHealth solutions in community pharmacy practice, it is crucial to consider pharmacists' experience levels to ensure successful adoption and utilization

Figure 3 addressed the challenges posed by interoperability issues with existing systems and software. The highest figure fell within the "Considerably" category, with 32.8% of respondents identifying this challenge as considerably problematic. Additionally, "Somewhat" also played a significant role, with 28.8% recognizing some level of challenge. These emphasized categories underscored the complexities associated with integrating eHealth technology into existing pharmacy systems and software. Ensuring seamless interoperability remained a critical consideration for successful adoption.

Figure 5 addressed the challenges posed by limited financial resources and budget constraints. The highest figure fell within the "Extensively" category, with 40.8% of respondents indicating that this challenge extensively hindered successful implementation. Furthermore, "Considerably" also played a substantial role, with 29.6% recognizing considerable financial constraints. These emphasized categories underscored the financial hurdles faced by community pharmacies when adopting eHealth technology. Adequate budget allocation and resource allocation were crucial to overcoming this challenge and ensuring successful technology implementation.

Figure 9 addressed the perception that incorporating eHealth technology improved patient engagement and promoted better adherence to medication regimens in community pharmacy practice. The highest figure was "Agree," with 40.8% of respondents agreeing with this statement. Additionally, "Strongly agree" was also notable, with 37.6% expressing strong support for this view. These emphasized categories highlighted the belief among pharmacists that eHealth technology could positively impact patient engagement and adherence to medication

regimens. This recognition underscored the potential for technology to empower patients and enhance their participation in their healthcare.

Figure 10 explored the belief that eHealth technology provided better access to patient information, allowing pharmacists to make more informed decisions and provide personalized care in community pharmacy practice. The highest figure was "Strongly agree," with 60.0% of respondents strongly endorsing this perspective. Additionally, "Agree" was also significant, with 32.0% supporting the idea. These emphasized categories emphasized the widespread consensus among pharmacists regarding the role of eHealth technology in enabling better access to patient information and the delivery of personalized care. This recognition highlighted the potential for technology to empower pharmacists with the information needed to provide tailored healthcare services.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

This study aimed to investigate pharmacists' attitudes and beliefs regarding the adoption of eHealth technology in community pharmacy practice in Benin City, Edo State, Nigeria. The study's specific objectives encompassed determining the prevalence of eHealth technology adoption, identifying contributing factors, exploring pharmacists' opinions, addressing implementation challenges, and assessing potential benefits. By achieving these objectives, the study sheds light on the current landscape of eHealth technology integration in community pharmacy practice, highlighting both opportunities and obstacles, and offering insights to enhance patient care, communication, and overall outcomes.

5.2 RECOMMENDATION

- **Technology Training and Education**: Given the positive correlation between Adoption Factors and eHealth Prevalence, it's recommended that training and educational programs be offered to pharmacists to enhance their technological proficiency. Workshops, seminars, and online courses can equip pharmacists with the necessary skills to confidently adopt and utilize eHealth tools in their practice.
- **Promotion of Positive Attitudes**: Since Pharmacist Attitudes were found to influence eHealth prevalence, strategies to promote positive attitudes towards technology adoption should be implemented. Creating awareness about the benefits of eHealth technology

through awareness campaigns, testimonials from peers, and success stories can foster a favorable mindset among pharmacists.

- **Addressing Implementation Challenges**: As implementation challenges were identified as a factor influencing eHealth Prevalence, stakeholders should work collaboratively to address these barriers. Identifying technical, financial, and operational obstacles and developing tailored solutions can facilitate smoother adoption and integration of eHealth technology.
- **Regulatory and Organizational Support**: Regulatory bodies and organizations should provide clear guidelines and incentives to encourage the adoption of eHealth technology. Establishing supportive policies, standards, and frameworks can create an environment conducive to innovation and technological advancement in community pharmacy practice.
- **Continuous Evaluation and Improvement**: To harness the potential benefits highlighted in the study, regular evaluation and feedback mechanisms should be in place. Continuous monitoring of eHealth technology adoption and its impact on medication management, patient care, and outcomes can guide further improvements and adjustments.
- **Collaborative Platforms**: Collaboration among pharmacists, healthcare professionals, and technology experts can facilitate the sharing of best practices and innovative ideas. Creating platforms for knowledge exchange, networking, and mentorship can accelerate the adoption of eHealth technology and ensure its effective implementation.
- **Tailored Solutions**: Recognizing that different community pharmacy settings might face distinct challenges, the development of tailored solutions for varying contexts is essential.

Solutions that consider the unique needs, resources, and challenges of different pharmacy practices can promote more successful technology adoption.

- **Research and Innovation**: Encouraging and supporting research initiatives focused on eHealth technology integration can contribute to evidence-based practices and the development of locally relevant solutions. Collaborative research efforts can enhance the understanding of how technology can improve patient care and outcomes.

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APPENDIX:

QUESTIONNAIRE

1: Please indicate your gender: (a) Male [ ] (b) Female [ ]

2: Age: (a) 18 - 29 years [ ] (b) 30 - 49 years [ ] (c) 50 - 69 years [ ] (d) 70 years and above [ ]

3: Marital Status: (a) Single [ ] (b) Married [ ] (c) Divorced/Separated [ ]

4: Level of Practice: (a) Intern Pharmacist [ ] (b) Superintendent Pharmacist [ ] (c) Locum Pharmacist [ ] (d) Pharmacy Manager [ ]

5: Years of Practice: (a) Less than 1 year [ ] (b) 1 - 3 years [ ] (c) 4 - 10 years [ ] (d) 11 years and above [ ]

6: Area of Practice: (a) Community [ ] (b) Hospital [ ] (c) Industry [ ]

Section B:

Key: 5 = Very poor, 4= Poor, 3= Average, 2= Good, 1= Excellent

S/N	**The prevalence of eHealth technology in community pharmacy practice in the Benin City.**	**5**	**4**	**3**	**2**	**1**
1	To what extent do you believe eHealth technology is integrated into daily operations in community pharmacies in Benin City					
2	How well are community pharmacists utilizing eHealth technology to enhance patient care in Benin City					
3	In your opinion, how effective is the use of eHealth technology in improving medication management and safety in community pharmacy practice in Benin City					
4	Overall, how satisfied are you with the level of eHealth technology adoption and utilization in community pharmacy practice in Benin City, Benin City					

Section C:

Keys: 5= Very minimally, 4= Minimally, 3= Moderately, 2= Significantly, 1= Very significantly

S/N	**The factors that contribute to the adoption of eHealth technology in community pharmacy practice**	5	4	3	2	1
1	To what extent do you believe that improved patient care and outcomes contribute to the adoption of eHealth technology in community pharmacy practice					
2	How much do you think that the potential for enhanced medication management and safety influences the adoption of eHealth technology in community pharmacy practice					
3	In your opinion, to what extent do cost savings and efficiency gains play a role in driving the adoption of eHealth technology in community pharmacy practice					
4	How significantly do you believe that regulatory requirements and government initiatives contribute to the adoption of eHealth technology in community pharmacy practice					
5	To what extent do you think that the availability and accessibility of technological infrastructure and resources influence the adoption of eHealth technology in community pharmacy practice					

Section D:

Key: 5= Not at all satisfying, 4= Slightly satisfying, 3= Moderately satisfying, 2= Very satisfying, 1= Extremely satisfying

S/N	The opinions and attitudes of pharmacists towards the integration of eHealth technology in community pharmacy practice	5	4	3	2	1
1	How satisfying do you find the integration of eHealth technology in community pharmacy practice for improving patient care and outcomes					
2	To what extent do you believe that the integration of eHealth technology enhances medication management and safety in community pharmacy practice					
3	How satisfying do you find the use of eHealth technology in community pharmacy practice for improving workflow efficiency and task management					
4	To what extent do you think that the integration of eHealth technology improves communication and collaboration with other healthcare providers in community pharmacy practice					
5	How satisfying do you find the overall impact of integrating eHealth technology in community pharmacy practice in Benin City					

Section E:

Key: 5= Not at all, 4= Minimally, 3= Somewhat, 2= Considerably, 1= Extensively

S/N	The difficulties and challenges encountered in implementing eHealth technology in community pharmacy practice	5	4	3	2	1
1	To what extent do you believe that a lack of technical infrastructure and resources hinders the implementation of eHealth technology in community pharmacy practice					
2	How much do you think resistance to change among pharmacists and staff affects the successful implementation of eHealth technology in community pharmacy practice					
3	To what extent do interoperability issues with existing systems and software pose challenges in implementing eHealth technology in community pharmacy practice					
4	How much do concerns about patient privacy and data security impact the implementation of eHealth technology in community pharmacy practice					
5	To what extent do limited financial resources and budget constraints hinder the successful implementation of eHealth technology in community pharmacy practice					

Section F:

Key: Strongly agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly disagree = 1

S/N	The potential advantages and benefits of incorporating eHealth technology in community pharmacy practice	5	4	3	2	1
1	eHealth technology improves medication safety and reduces the risk of medication errors in community pharmacy practice.					
2	Incorporating eHealth technology enhances communication and collaboration among healthcare providers in community pharmacy practice.					
3	eHealth technology increases efficiency in prescription processing and medication management in community pharmacy practice.					
4	Incorporating eHealth technology improves patient engagement and promotes better adherence to medication regimens in community pharmacy practice.					
5	eHealth technology provides better access to patient information, allowing pharmacists to make more informed decisions and provide personalized care in community pharmacy practice.					