Integration of ClicKMedS (Click Kiosk Medication Support) for Over-the-Counter Medications at Selected Community Pharmacy in the City of Koronadal, South Cotabato

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ABSTRACT

The utilization of ClicKMedS into community pharmacy has significantly streamlined operations and enhanced customer experience. The cornerstone of utilizing ClicKMedS was its intuitive design, providing reliable access, and assessing the feasibility of using a kiosk to deliver over-the- counter medication to customers in a community pharmacy setting. This descriptive study employed quota sampling to select the respondents. To ascertain the study outcome, researchers made a questionnaire to gauge the level of customer satisfaction and evaluated ClicKMedS across four dimensions: convenience, efficiency, accessibility, and operation. Customer satisfaction was measured using a four-point scale, revealing high mean scores: 3.21 (SD=0.53) for convenience, 3.29 (SD=0.55) for efficiency, 3.33 (SD=0.52) for accessibility, and 3.33 (SD=0.54) for operation. These results indicate "very high" satisfaction levels across all categories. These findings highlight the importance of ClickMedS as an intuitive tool for enhancing the customer experience by providing efficient, accessible, and user-friendly service in a community pharmacy setting.

Keywords: Kiosk, Community Pharmacy, Over- the-Counter medications, Customers Satisfaction, Intuitive

INTRODUCTION

Background of the Study

The use of non-prescription medications is growing in popularity globally as a form of self- treatment (Chautrakarn, 2021). Community pharmacies worldwide are expanding their offerings of OTC medications (Seubert, 2019). Despite the healthcare system's focus on providing high-quality service, patient satisfaction with pharmacy service has been found to be significantly lacking (Ayele et.al, 2020).To meet the growing reliance on non- prescription options, inventive solutions are required to make OTC medications accessible (Seubert, 2023). The healthcare landscape is changing due to the digital revolution, affecting various industries, including healthcare (Proença, 2021). Automated kiosks are gaining popularity in healthcare and have the potential to revolutionize access to OTC medication (Maramba, 2022).

According to Ayalew (2017), factors influencing patient satisfaction include pharmacist attitude, medication availability, convenience, pharmacy facilities, and location. Self-service ordering systems afford numerous advantages, notably enabling patrons to tailor their orders conveniently and enhancing cost-effectiveness by reducing expenses, as articulated by Baba et al. (2020).

Furthermore, these systems contribute to diminishing labor costs and wait times, as emphasized by Leung et al. (2021). The utilization of health kiosks have found applications in both public and specialized medical settings globally, serving a pivotal role in the healthcare industry. Notably, the utilization of kiosks into healthcare practices holds the potential to enhance health system indices, particularly in terms of accessibility, as emphasized by Letafat-Nejad in 2020.

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In Nigeria, 95% of community pharmacists viewed pharmaceutical care as a valuable service that could enhance patient health and boost consumer confidence in the pharmacy profession, thereby improving pharmacy practice. By 2019, although 51.2% of Nigerian community pharmacists exhibited positive attitudes toward pharmaceutical care, their actual practice was hindered by a shortage of staff, poor collaboration with other healthcare providers, lack of pharmaceutical care skills, and the time-intensive nature of providing pharmaceutical care. In Pakistan (2017), community pharmacists in Lahore demonstrated poor awareness but held positive attitudes toward extended pharmacy services and pharmaceutical care due to issues like a shortage of manpower and training programs, among other factors. In Malaysia (2021), interactions between community pharmacists and general practitioners were found to be suboptimal, highlighting the need for additional training programs to improve these services (Ababneh et al., 2023).

According to a study by Alssageer (2021), 60% of respondents reported that staff did not provide information on medication storage. Regarding customer skepticism towards community pharmacy services, 55% of respondents felt that these services primarily focus on commercial interests, and 60% believed that business concerns take precedence over patient health. Despite these concerns, 85% of respondents recognized the essential role of community pharmacies as vital healthcare providers. However, only 40% of respondents were satisfied with the availability of pharmaceutical products, and a mere 20% were satisfied with the cost of pharmacy products.

On a national and global scale, the prevalence of self-medication varies globally, ranging from 11.2% to 93.7% (Chautrakran, 2021). Global discussions and initiatives since 2015 emphasize the use of digital technology in healthcare. In the study of Pineles, in May 2018, the World Health Assembly urged the use of digital technology for universal health coverage. The adoption of digital technologies for universal health coverage received endorsement from the World Health Assembly. Healthcare systems are continually evolving, with technology integration being a transformative trend influencing the healthcare landscape (Schwalbe, 2020). Analyzing the local ramifications of implementing ClicKMedS can provide insights into broader healthcare patterns. This research contributes to the global discourse on the role of technology in community healthcare settings (Israel, 2023).

This research aims to assess how well ClicKMedS utilized into selected community pharmacies in the City of Koronadal for Over-the- counter medications. It also seeks to evaluate customer satisfaction with the integration, specifically examining convenience, efficiency, accessibility, and operation. Additionally, it aims to provide insights and recommendations based on the findings to improve the utilization and enhance the experience for both pharmacies and customers. Ultimately, this research contributes valuable information to the understanding of ClicKMedS effectiveness and user satisfaction in the context of over-the-counter medication support in community pharmacies.

REVIEW OF RELATED LITERATURE

This chapter provided a thorough review of the relevant research findings and conducts a comprehensive review of various related literature and studies. This chapter synthesized existing knowledge, theories, current knowledge, and empirical studies relevant to the study's objectives.

Utilization of Health Kiosk

Utilization of health kiosks have become essential in both public spaces and specialized medical environments globally, playing a pivotal role in the healthcare industry. Positioned in various locations, including public areas and specialized health facilities, these touch screen computer-based terminals distinguish themselves from earlier kiosk versions by expanding beyond mere information and consultation services. They now encompass a multifaceted role, incorporating hygienic practices, diagnostics, and occasionally even medical services (Letafat-Nejad, 2020).

This evolution signifies a transformation in the delivery of healthcare services and the distribution of medications, introducing cost- effective, expedited, and convenient approaches that align with the preferences and schedules of clients. The utilization of kiosks into healthcare practices holds the potential to enhance

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health system metrics, particularly in terms of accessibility. This viewpoint is underscored by Letafat-Nejad in 2020, emphasizing the positive impact of kiosks on healthcare accessibility. According to Park, S. (2023), a standalone device placed in a public area is called a kiosk. A kiosk is a tool that uses a touch screen to exchange goods or services or to give people information. It's great availability, Click service, and limited wait times make it quite popular. In the study of Letafat-Nejad, M. (2020), certain services and information are offered via integrated health kiosks in certain nations. Many nations' health systems do not, however, currently formally incorporate it.

Utilization of kiosks, according to Baloch, G., and Gzara, F. (2023) Self- serve kiosks have become more and more popular in recent years because of its 24/7 availability and less setup and operation costs than traditional brick-and- mortar enterprises. The limited capacity of pharmacy kiosks to store thousands of prescription drugs that are ordered in various quantities, each with fluctuating and low drug demand, makes inventory planning challenging. The research conducted by Bolton, M. L. (2014), studying cutting-edge approaches to care delivery, such as the use of self-service kiosks to collect and monitor health indicators, is supportive of the effectiveness and inclusivity of healthcare. Self- service kiosks have the potential to achieve this, but in order to meet expectations, fixes like accurate measuring tools need to be developed. There are both short-term and long-term problems with healthcare delivery worldwide. Rethinking healthcare delivery is becoming necessary in many countries as a result of changing demographics, an increase in long-term conditions (LTCs), and shifts in the ratio of caregivers to be cared for. The basis of a recent advancement in healthcare technology is self-service kiosks.

Moreover, according to Abdel-Malek, L. (2019), technology for self-serve pharmacy solutions is developed by MedAvail Technologies Inc., a healthcare technology business. MedCenter is a technology that functions as a pharmacy kiosk and offers pre-packaged prescriptions and over-the- counter medications for simple, dependable access around the clock. MedAvail faces various obstacles with the selection and stocking decisions of pharmaceuticals in the kiosk, limited by kiosk capacity, in order to accomplish its business goals of having the correct medication in the right kiosk at the right quantity.

Customer satisfactions in pharmacy services

Patient or client satisfaction refers to the level of positive emotion felt by individuals after utilizing a service, highlighting the variance between the anticipated service quality and the actual experience from the patients' perspective. This concept has gained prominence within healthcare as a crucial measure of service quality, with pharmaceutical services playing a significant role in reflecting the actual care provided (Ayalew et al., 2017). For organizations, customer satisfaction is widely acknowledged as the primary factor in assessing service quality. The effectiveness of service delivery in pharmaceutical stores heavily relies on customer satisfaction feedback and acceptance (Ruzaihan et al., 2020).

Patient satisfaction, a pivotal component in implementing pharmaceutical care, reflects individuals' contentment with the healthcare they receive from their providers (Alanazi, 2023). Patient or client satisfaction measures the positive emotions experienced following the utilization of a specific service, emphasizing the disparity between expected service quality and the actual experience (Ayalew, 2017). In order to attain customer satisfaction, it is imperative to initially assess the thoughts of clients about service quality, comprehend related attributes or dimensions for measuring service and product quality, and boost quality components that customers find concerning. Improving service quality is the most acceptable strategy for reaching customer satisfaction (Chen, 2019). Widely discussed by researchers and organizations, customer satisfaction is increasingly quantified, positioning it as a fundamental element in healthcare quality. Patient satisfaction has gained recognition as a prominent indicator of healthcare quality, with pharmaceutical services playing a crucial role in reflecting service actuality and impacting adherence to medical attention (Ayalew, 2017).

Recognized as a crucial indicator of healthcare quality internationally, patient satisfaction is an evaluation of significant aspects of the healthcare service experience, encompassing contextual factors, processes, and outcomes (Desta, 2018). Positive service encounters are often shared with approximately nine to ten individuals, emphasizing the ripple effect of patient satisfaction (Abdallah, 2019). Synonymous with positive

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emotions related to a service, patient satisfaction is pivotal in assessing healthcare service quality (Amara, 2023). The detrimental impact of customer dissatisfaction in service-oriented industries surpasses the beneficial effects of satisfaction (Abdallah, 2019). Crucial factors in evaluating healthcare services globally, patient satisfaction serves as an indicator of care efficacy and clinical results, influenced by such as demographics, health condition, and healthcare provider attributes (El- Kholy, 2022).

The expansion of pharmaceutical services worldwide aimed to address direct patient care needs, with enhanced satisfaction correlating with improved treatment outcomes (Ofei-Dodoo, 2019). According to the U.S. National Library of Medicine, patient health behavior and collaboration with healthcare practitioners are influenced by individual satisfaction, underscoring its role in achieving improved healthcare results. Evaluating patient satisfaction is a method for assessing the quality of pharmaceutical services and ensuring they align with public expectations and principles (Amara, 2023). Factors influencing patient satisfaction encompass pharmacist attitude, medication availability, convenience, pharmacy facilities, and location. Prescription fill waiting times consistently negatively impact satisfaction, highlighting the need for focusedsupervision, frequent monitoring, and counseling for improved ratings (Ayalew, 2017).

Role of Technology or Kiosk in Pharmacy Services

Health kiosks, serving as public computers, offer diverse services, including disseminating health information, collecting clinical data, facilitating patient self-check-in, supporting telemonitoring, and enabling teleconsultation. Despite increased internet access and personal smart device usage, recent reports predict a growth in the health kiosk market (Maramba, 2022). Consequently, it is evident that pharmacists in the present day are building and formulating their daily work more effectively and efficiently by utilizing IT systems.

Maramba et al. (2022) have delineated computerized health kiosks as standalone structures housing computer programs aimed at delivering users with either information or services. Joshi et al. (2014) posit that the deployment of computer kiosks in both community and clinical environments could serve as a means to mitigate the digital health information gap. These kiosks, characterized as standalone units housing computer programs, offer users access to information and services. Their portability allows for flexibility in relocation as needed. Furthermore, the interactive nature and user-friendly interfaces, typically employing touch screens or keypads, make kiosk-based programs accessible to a wider audience. Consequently, this technology holds the potential to narrow the disparity between individuals with and without access to health information and communication technologies, thereby enhancing overall health outcomes. Based on Schneider (2018) pharmacists' conventional responsibilities revolved around preparing and dispensing medications, restricting their workplace and time to collaborate with other healthcare professionals for enhancing medication safety and efficacy. However, advancements in technology have expanded their role, leading hospital pharmacists to engage more in medication therapy management activities outside the pharmacy, as opposed to traditional dispensing duties.

The technological system is easy to use, allows for the management of more work in less time, and has a low degree of mistake and complexity in the working process. Additionally, it is believed that the IT needs for emerging operational methods are crucial to the pharmaceutical industry, since production and research and development rely heavily on technology-based systems (Shaikh, 2019). A joint Commission launched in October 2019 by The Lancet and the Financial Times focused on digital health, artificial intelligence, and universal health coverage, reflecting the ongoing global push toward digital health utilizationn (Schwalbe, 2020). On a local level, self-service technologies (SSTs) empower customers by allowing active participation in shaping their service experiences, extending beyond mere technological interaction to encompass product delivery and service assistance (Seo, 2020). Exploring the impact of factors like usefulness, alignment with the service process, and facilitating conditions on SST use, a recent study draws from the perspectives of the Technology Acceptance Model (TAM) and customer value. This research, situated in the local context, introduces the concept of perceived enjoyment as a significant moderator, emphasizing its crucial role in shaping individuals' intentions to adopt technology, a theme echoed in prior studies (Chautrakarn, 2021). On an international scale, the World Health Organization (WHO) actively advocates for the widespread utilization of breakthroughs in digital health technologies (DHTs) to enhance healthcare services globally (Israel, 2023).

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Artificial intelligence, barcode medicine identification, the Internet, electronic medical records, mobile technology, telecare technology, electronic prescription, electronic discharge systems, and so on are examples of new technologies that can help pharmacists and clinicians in the following ways: they can facilitate the storage of patient records and planned procedures; they can expedite the implementation of electronic statutes of limitations; they can mechanize the handling and treatment of pharmaceuticals along the value chain; and they can provide tools to monitor the value and safety of pharmaceuticals currently in use (Shaikh, 2019).

Over-the-counter medication

Over-the-counter (OTC) drugs or products are those that people can purchase without a prescription from a medical practitioner. These medications, which are typically sold at pharmacies, drugstores, or retail establishments, are made to be self-administered by people for minor illnesses or health problems without a prescription from a physician (Chautrakarn et.al, 2021) In the article by Clark D. Kebodeaux (2018), over-the-counter (OTC) drugs are essential for patients to be autonomous in managing their own health care. Often, these nonprescription choices are unknown to health care practitioners, so they are frequently left out of patients' medical records. over-the-counter (OTC) medicine refers to pharmaceuticals that pharmacists are permitted by law to sell without a prescription.

Over-the-counter (OTC) medicine use has been continuously increasing over the past few years. This development can be attributed to a number of factors, including raising patient awareness, accessibility, and affordability. For mild ailments including a cough, cold, allergies, discomfort, fever, acidity, diarrhea, and skin disorders, patients frequently turn to pharmacists rather than doctors. In most nations, buying certain medications over-the-counter is permitted.

According to E. Lehnbom (2023). Easily accessible drugs known as over- the-counter (OTC) treatments enable patients to cure common illnesses without a prescription and without having to pay for a visit to the doctor. Since many over-the-counter medications are sold in pharmacies, technicians and pharmacists have the chance to advise customers on how to safely choose and utilize these drugs. Community pharmacies are therefore the best location for over-the-counter pharmaceutical safety programs. According to Mourya, A. (2019). The prevalence of over-the-counter (OTC) medications is sharply rising daily. Medications that are sold to patients without a prescription from a medical professional are known as over-the-counter medications. A regulatory body chooses over-the- counter (OTC) medications in many nations to make sure they are safe and effective when used without a prescription.

According to the research of Marathe, P. A. (2020) In the majority of countries, buying certain medications over-the-counter is permitted. “Over- the- Counter (OTC) Medicines” refers to pharmaceuticals that pharmacists are permitted by law to sell without a prescription.

Over-the-Counter (OTC) Medicine use has been continuously increasing over the past few years. This development can be attributed to a number of factors, including patient awareness raising, accessibility, and affordability. Medications that are available without a prescription are referred to as over-the- counter (OTC) or nonprescription medications. OTC medications provide more affordable access to therapy for common ailments that are self-limiting or trivial for the general public. Pharmacists can serve as a vital interface by guiding patients with their professional knowledge to guarantee the best possible usage of over-the-counter drugs. OTC medications can be problematic, though, therefore safety, abuse, and patient education must all be taken into account. It is imperative that OTC medications be regulated strictly in terms of their classification, distribution, and sale. According to research conducted by the team of Antonino, K (2022) Over the year, there has been a gap in consumer knowledge about over-the-counter medications and self- medication, which has led to overuse and abuse of these medications. Seubert, L. (2019) reports that the expanding global trend is the provision of over-the-counter (OTC) drugs by community pharmacies. Self-care and self- medication are common ways that people choose to take care of minor health conditions because they are practical, economical, and time-saving.

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Theoretical Framework

Three main hypotheses were used by researchers to create a solid foundation. Initially, the Technology Acceptance Model (TAM), which was first presented by Fred Davis, people prefer computer systems that are practical and simple to use (Thompson, 2019). TAM envisions the voluntary and individual adoption of a range of communication and information technologies (Rauniar, 2014). This study uses it to learn more about how people use and accept the ClicKMedS kiosk. This concept emphasizes how simple to use and beneficial the kiosk is for users. It clarifies whether users are likely to return to the kiosk. As it provides insight into how users respond to the new technology in the pharmacy context, this is relevant to the study.

Second, we utilized Everett Rogers' Innovation Diffusion Theory (IDT) IDT explained how new ideas spread throughout a community by categorizing people into groups such as early adopters or those who accept innovations later (Halton, 2023). It is also used to determine how new technology spreads and gains public acceptance. It assesses how well the kiosk meets their everyday needs and how easy or challenging it is to use. This aids in the study since it demonstrates how quickly and effectively the community pharmacy kiosk may be accepted by the public.

The third theory which was utilized is the Theory of Planned Behavior (TPB), which was introduced by Icek Ajzen. TPB suggested that attitude towards behavior, subjective norms, and perceived behavioral control all influence behavioral intention (Asare, 2015). Applying TPB involves examining customers' attitudes towards using the Click Kiosk Medication Support system, considering the influence of their friends or family, and evaluating their perceived control over this decision. This approach helps understand individuals' willingness to use ClicKMedS for Over-the-Counter medications and pinpoint potential areas for enhancing its utilization into community pharmacies

Conceptual Framework

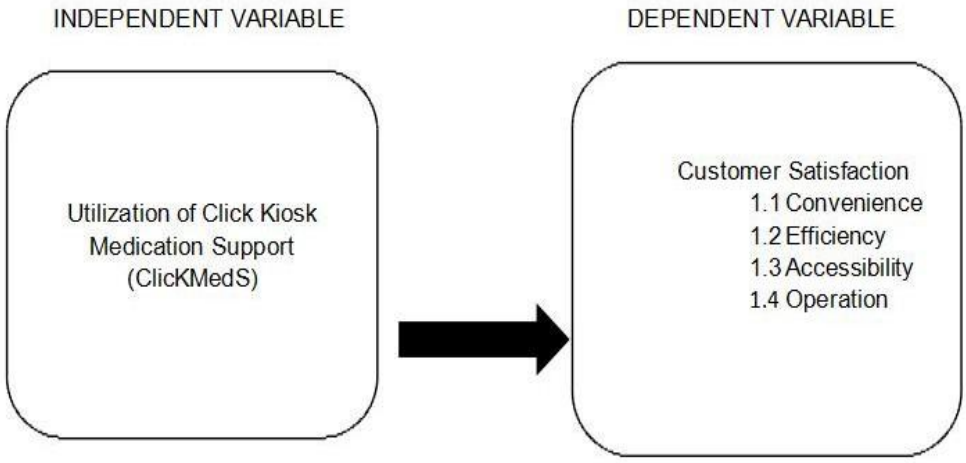

Figure 1. Conceptual Framework

MATERIALS AND METHOD

Research Design

The primary objective of this study was to assess the feasibility of implementing a kiosk, specifically the ClicKMedS system, within a pharmacy setting. The research aimed to evaluate customer satisfaction across various aspects such as convenience, efficiency, accessibility, and overall operational efficacy. To achieve this, the study employed a quantitative method using a descriptive research design.

This research utilized a quantitative descriptive design to investigate customer satisfaction with the ClicKMedS system. A descriptive design using quantitative methods allows for the systematic collection of measurable data to describe the characteristics, behaviors, or attitudes of a specific population. This approach

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was ideal for gathering detailed information about the current state of customer satisfaction with the kiosk system without manipulating variables o2r6establishing cause- and-effect relationships.

By employing a descriptive study design, the research aimed to comprehensively address the identified problems. Specifically, the study investigated the simplicity and effectiveness of ClicKMedS from the customer's perspective, as well as its impact on the productivity and workload of pharmacy employees. This enabled a deeper understanding of the landscape surrounding the implementation of ClicKMedS in pharmacies, which can inform future research or interventions.

Research Locale

The study was conducted at the premises of a Community Pharmacy at Brgy Zone VI, City of Koronadal, in the Province of South Cotabato, Philippines. The said location was easily accessible because it is located near government offices, schools, a residential area, and near a temporary supermarket. The specific local strategic placement within the community provided a unique setting to explore the effects of implementing self- service kiosks on customer interactions and overall community engagement. The community pharmacy operated from 8:00 AM until 9:00 PM every Monday until Sunday.

Participants

The respondents of the study were 80 customers from the selected community pharmacy who were willing to participate. According to the pharmacist of the selected community pharmacy, the pharmacy experienced daily foot traffic ranging from a minimum of 50 customers to a maximum of 70 customers. Within this range, an average of 20 to 35 customers were observed purchasing Over-the- counter (OTC) medications. Jamil (2020) suggested that a sample size of 80 respondents may be sufficient to measure customer satisfaction in studies related to customer acceptance toward self-service technology. This data underscored the significance of OTC medication sales within the pharmacy's overall customer engagement metrics, providing valuable insights for research and business analysis.

Sampling Techniques

The study employed quota sampling to choose the participants. Like stratified sampling, quota sampling divides the target population into subgroups based on relevant characteristics and then enrolls subjects until every group has filled its quota (Thompson, 2020). This method guarantees a representative cross-section of respondents that resembles the demographic breakdown of the target population, thus enhancing external validity of results. External validity is about how much one can infer from what they have observed in a particular research project to other groups in general.

Research Instrument

To collect the necessary data, the researchers used self-made survey forms focused on evaluating the customer satisfaction towards its use. These survey forms underwent validation by experts to ensure their reliability and effectiveness.

The research instrument employed was a structured Likert scale questionnaire designed to elicit responses from respondents.

The questionnaire measure customer satisfaction in using ClicKMedS integration based on convenience, efficiency, accessibility, and operation. The participants rated customer satisfaction levels in relation to the sub-parts using Likert scales with the response options of four where means Satisfied to a Great Extent, three for Satisfied to a High Extent, two for Satisfied to a Little Extent, and one for Satisfied to a Least Extent.

Furthermore, the research consultants reviewed and validated the survey questionnaires to ensure the accuracy of the questions and to address any potential errors. Additionally, the questionnaire underwent a reliability test.

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This ensures that the questions consistently produce similar results, minimizing measurement error and enhancing the trustworthiness of the collected data. This rigorous approach contributed to the reliability and trustworthiness of the data obtained

Data Gathering Procedure

For the step-by-step process of data collection, the researchers followed the following procedures:

Step 1: The researchers sought approval from the school to conduct the study as well as from the community drug store.

Step 2: The researchers employed Click Kiosk Medication Support (ClicKMedS) in the chosen community pharmacy, and the participants answered the survey form after using the Click Kiosk Medication Support (ClicKMedS). The study was conducted over the course of two weeks to one month, allowing for comprehensive research and analysis within this timeframe.

Step 3: After answering the questions, the questionnaires were collected and the data was tallied for interpretation. The researchers asked a statistician to help in determining the appropriate statistical tools to be used in interpreting the data.

Statistical Treatment

The data collected from this survey underwent a descriptive statistical analysis to summarize and characterize the key features of the responses. For each survey item, the mean was calculated to determine the average score, providing a central tendency of what the typical participant indicated. Additionally, the standard deviation was computed to assess the variability of the responses around the mean. This measure revealed how spread out the data points are, indicating if the participants generally agreed or disagreed with a particular statement, or if the responses were widely scattered. By employing these descriptive statistics, the current study aims to present a clear picture of the overall trends and variations within the survey data, laying the groundwork for further analysis.

RESULTS AND DISCUSSION

This chapter presented in detail the overall data of the study aimed to evaluate the Integration of ClicKMedS (Click Kiosk Medication Support) for Over-the-Counter Medications at Selected Community Pharmacy in the City of Koronadal, South Cotabato. Descriptive and inferential statistics were utilized to assess and answer the problem stipulated in the study

Table 1 Mean Level of Customer Satisfaction in the Integration of Clickmeds

Table 1.a. Customer Satisfaction toward Convenience

Items	**Mean**	**SD**	**Interpretation (Convenience)**
1. ClicKMeds utilization as a buying tools has made the purchase process more convenient.	3.34	0.71	Very high
2. ClicKMeds is easy to use to find the medication needed.	3.40	0.63	Very high
3. It takes less time to use the ClickMeds than to purchaseover-the-counter medicines.	3.00	0.73	Very high
4. The ClicKMedS will be used again to buy medicine in the future.	3.24	0.70	Very high
5. ClicKMedS meets the Expectations regarding the convenience of accessing over-the-counter medications.	3.11	0.73	Very high
6. The ease of getting over-the -counter drugs have improved using ClicKMedS.	3.11	0.80	Very high
7. The positioning of ClicKMedS emphasizes convenience regarding customer foot traffic and accessibility.	3.26	0.72	Very high
8. ClicKMedS greatly simplifies the process for customers to easily locate specific over-the- counter medications.	3.10	0.74	Very high

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9. ClicKMedS assists customers by enabling them to compare prices and features of various over-the- counter medications. high	3.31	0.79	Very
10. Customers can confidently use ClicKMedS without requiring assistance from a pharmacist.	3.23	0.69	Very high
Overall Mean	**3.21**	**0.53**	**Very high**

Results in Table 1 revealed that Convenience is a critical factor in customer satisfaction, as it measured how easily customers can access and utilize ClicKMedS. The overall mean score for this category is 3.21, with a standard deviation of 0.53, indicating a "very high" level of satisfaction. This suggests that customers generally find the system convenient to use, which contributes to a positive pharmacy experience. According to Seo's study in 2020, the introduction of new technology innovation often enhances convenience and offers numerous advantages compared to current services.

The overall mean score of 3.21 demonstrates that customers find ClicKMedS convenient, aligning with studies showing that consumers increasingly choose online channels for their convenience and time-saving capabilities (Singh et al., 2017). This high level of satisfaction indicates that ClicKMedS offers customers a seamless and accessible way to manage their over-the-counter medication needs.

This mean score, positioned within a likely high-performance scale, underscores the importance of convenience in user satisfaction. A standard deviation of 0.53 indicates a relatively low variance in responses, suggesting that most users find the convenience aspect of ClicKMedS consistently high. This consistency is essential for establishing a dependable user experience, further supporting the system's role in enhancing pharmacy services.

Further research could explore how ClicKMedS's convenience can improve drug adherence and general healthcare access. Additionally, studies have emphasized pricing transparency and self-service choices as major factors influencing online healthcare satisfaction, aligning with the capacity to independently shop and compare prices and features (McCue et al., 2019). This highlights that convenience is a key strength of ClicKMedS and suggests areas for future enhancement.

Table 1b. Customer Satisfaction towards Efficiency

Items	**Mean**	**SD**	**Interpretation (Efficiency)**
1. The ClicKMedS is a user- friendly technology.	3.55	0.59	Very high
2. The medication information displayed on the kiosk screen is sufficient and easy to understand	3.51	0.66	Very high
3. The ClicKMedS is a time-saving alternative for routine and non-urgent medication purchases.	3.16	0.81	Very high
4. Content with swift access to information regarding over-the- counter medications through ClicKMedS.	3.29	0.80	Very high
5. ClicKMedS assists in guiding users to select the most appropriate over-the-counter medication based on their needs.	3.29	0.68	Very high
6. ClicKMedS to be a time-saving tool for obtaining information on OTC medications.	3.11	0.80	Very high
7. The integration of ClicKMedS enables users to more quickly and efficiently acquire over-the-counter pharmaceuticals.	3.03	0.75	Very high
8. ClicKMedS offers features such as dosage guidance and medication instructions to enhance the efficiency of medication usage.	3.34	0.73	Very high
9. The availability of information and details about OTC drugs on Click Kiosk Medication Support expedites decision -making during purchases.	3.26	0.74	Very high
10. In general, utilizing Click Kiosk Medication Support substantially enhances the efficiency of purchasing over-the- counter drugs compared to traditional methods.	3.38	0.68	Very high
Overall Mean	**3.29**	**0.55**	**Very high**

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Table 1b, in terms of *efficiency in customer satisfaction, shown that* the overall mean score serves as a framework for discussing how ClicKMedS improves efficiency and customer satisfaction in acquiring over-the-counter medications. In this area, it is **3.29**, with a standard deviation of **0.55**, indicating a "very high" level of satisfaction with system efficiency. This means that customers find the system to be immediate and responsive, allowing them to execute pharmacy- related operations with minimal delay. The high mean scores across these efficiency items suggested that ClicKMedS effectively enhances efficiency in purchasing OTC medications in pharmacies.

These findings resonated with existing literature, highlighting the results that support previous studies' findings (Yadav & Desai, 2018) that technology can improve healthcare procedures. Users of ClicKMedS expressed great pleasure with the platform's easy-to-use interface and clear medication information. The time efficiency consumers perceive for quicker purchases and quicker information retrieval is probably influenced by these design factors. Furthermore, functionalities such as purchase decision help and dosage guidance showed that ClicKMedS encourages responsible and effective pharmaceutical usage.

The high average efficiency score across the board highlights the support that users have for this technology. Subsequent studies may examine ways in which ClicKMedS can enhance pharmaceutical processes and possibly lower medical expenses (Chang et al., 2015).

Another study by Baba et al. (2020) and Leung et al. (2021) found that self-service technologies have considerable benefits in terms of lowering labor costs, which improves service delivery efficiency. These efficiencies help to increase client satisfaction by providing more rapid, and autonomous service options. The incorporation of these technologies into pharmacy environments is consistent with the larger trend of improving customer experiences through new, user-centered solutions.

This suggested that the integration of ClicKMedS' efficiency results in high customer satisfaction. The system's user-friendly design, outstanding information delivery, and medicine selection recommendations all contribute to a positive and efficient client experience. The use of ClicKMedS in pharmacy settings has a significant positive impact on customer satisfaction and efficiency.

Table 1c. Customer Satisfaction towards Accessibility

Items	**Mean**	**SD**	**Interpretation (Accessibility)**
1. It is easy to use the ClicKMedS.	3.39	0.67	Very high
2. The ClicKMedS interface intuitive and easy to navigate, even for users with limited technology experience.	3.31	0.72	Very high
3. The directions provided by ClicKMedS are relatively easy and understandable.	3.45	0.59	Very high
4. Easily review your selected items on the ClicKMedS screen before finalizing your over-the-counter medication purchase.	3.46	0.64	Very high
5. ClickMedS lives up to your expectations when it comes to making over-the-counter medications accessibility.	3.18	0.78	Very high
6. The height and screen angle of ClicKMedS are designed to ensure comfortable usage.	3.29	0.75	Very high
7. The search function within ClicKMedS helpful in locating specific over-the-counter medications.	3.14	0.81	Very high
8. The ClicKMedS provide helpful information about symptoms, instructions, and prices.	3.38	0.66	Very high
9. ClicKMedS is conveniently located and easily accessible within the pharmacy.	3.31	0.74	Very high
10. Overall accessibility to over-the-counter medications was improved by ClicKMedS.	3.39	0.70	Very high
Overall Mean	**3.33**	**0.52**	**Very high**

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Table *1c represented the accessibility of customer satisfaction.* The overall mean score for accessibility is **3.33**, with a standard deviation of **0.52**, suggesting a "high" level of satisfaction. This indicates consistently high ratings across various aspects of accessibility for ClicKMedS, reinforcing its effectiveness in providing accessible over-the- counter (OTC) medications in pharmacies. Reflecting strong agreement among users regarding the kiosk's usability and helpful features, this indicated that users find the system accessible and easy to operate, which is essential for a pleasant customer experience. The individual scores in this category range from 3.14 to 3.46, showing that users are generally satisfied with the system's accessibility. This accessibility is likely to improve customer involvement and satisfaction. The statistics indicate that ClickMedS strengthens accessibility and usability in pharmacy environments, particularly for over-the-counter drugs. Users find it facile to use, intuitive, and useful in improving overall accessibility.

According to the study by Peterson et al. (2017), an intuitive interface is beneficial for users of varying technological proficiency. This finding aligns with Choi and Park (2020), who emphasized that user-friendly interfaces in self-service technologies enhance accessibility and user satisfaction. It was also supported by the study of Smith et al. (2023), which highlights that user- friendly interfaces in healthcare kiosks significantly increase user satisfaction and engagement. Similarly, ensuring that kiosks are accessible to users of different technological skills is critical for increased adoption and satisfaction. This is consistent with the findings of Shaikh (2019), who stated that systems should be easy to use and require minimal technological knowledge to ensure high user satisfaction.

Overall, users have noted that ClicKMedS is physically accessible; it is conveniently located within the pharmacy and has a comfortable screen design. It suggests that placing self-service kiosks in visible and accessible locations within the pharmacy enhances convenience and satisfaction among users. And highlight that clear information presentation enhances user confidence and satisfaction in using self-service kiosks for medication purchases.

Table 1d. Customer Satisfaction towards Operation

Items	**Mean**	**SD**	**Interpretation (Operation)**
1. In using the ClicKMedS the Screen is responsive and easy to touch.	3.49	0.64	Very high
2. No technical difficulties encountered while using the kiosk.	3.25	0.75	Very high
3. Medications are easily filtered by various criteria like price, brand, or generic availability	3.40	0.70	Very high
4. ClicKMedS is clear and easy to understand the information provided about the product.	3.36	0.72	Very high
5. ClicKMedS meets customer expectations throughout the operational process.	3.15	0.75	Very high
6. Customers could cancel or modify their order before purchasing with ClicKMedS.	3.35	0.80	Very high
7. ClicKMedS effectively handles situations where the chosen OTC medication is out of stock.	3.16	0.77	Very high
8. ClicKMedS provides satisfaction through the accessibility of its features.	3.26	0.69	Very high
9. ClicKMedS during the medication selection process gives clarity of instructions.	3.35	0.76	Very high
10. ClicKMedS significantly enhance operational experience.	3.48	0.64	Very high
Overall Mean	**3.33**	**0.54**	**Very high**

The overall mean score of the operation category is 3.33, with a standard deviation of 0.54, indicating a "very high" level of satisfaction. This suggested that customers find the system reliable and effective in supporting their pharmacy needs.

The high overall mean score of 3.33 reflected that ClicKMedS performs well in terms of operational reliability and customer confidence, which is critical for its integration into community pharmacies. This finding aligned

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with studies showing that clear information and user-friendly interfaces are essential for successful technology adoption (Ammenwerth et al., 2019).

A mean score of 3.33, on a likely scale where higher numbers indicate better performance, underscores the system's capability in delivering consistent and satisfactory operational performance. The relatively low standard deviation of 0.54 further suggests a small variance in user satisfaction, indicating that most users consistently rate the operational aspects of ClicKMedS highly. This consistency is important because it implies that the system is reliable and performs well under various conditions and user interactions.

The positive perception of ClicKMedS aligned with existing literature on technology adoption in healthcare. Studies, such as those by Ammenwerth et al. (2019), emphasize the importance of clear information and user-friendly interfaces in facilitating the adoption and effective use of new technologies. ClicKMedS's high satisfaction scores suggest that it excels in these areas, providing an interface and information flow that users find intuitive and reliable.

Further research could explore how ClicKMedS can be utilized with pharmacy inventory management systems to enhance operational effectiveness and mitigate out-of-stock conditions (Yang et al., 2020). By ensuring that inventory levels are accurately tracked and managed, pharmacies could further improve their service quality and operational efficiency.

SUMMARY OF FINDINGS

This study investigated the Integration of ClicKMeS (Click Kiosk Medication Support) for over-the-counter medications within a sample of community pharmacies in Koronadal City. The research examined the level of customer satisfaction based on four key criteria: convenience, efficiency, accessibility, and operational ease. A researcher- designed questionnaire was employed to gather data from participants after their interaction with ClicKMeS. A defined set of inclusion and exclusion criteria guided the selection of respondents.

After analyzing the data, the researcher found out the following:

The findings revealed high levels of customer satisfaction across all measured categories. Customers rated ClicKMedS as very convenient and efficient, with a mean score of 3.21 and 3.29 respectively. This suggests that the kiosk system is easy to use and allows for quick completion of pharmacy-related tasks. In terms of accessibility, the mean score was 3.33, indicating that customers find the system easy to operate and navigate, regardless of their technological proficiency. Finally, customer satisfaction with the overall operation of ClicKMedS was also very high, with a mean score of 3.33. This highlights the system's reliability and effectiveness in supporting customer needs within the pharmacy environment.

The high customer satisfaction scores aligned with existing research on the benefits of user- friendly technology in healthcare settings. Studies emphasize the importance of clear information and intuitive interfaces for successful technology adoption. ClicKMedS appears to excel in these areas, providing an interface and information flow that users find easy to understand and trust. This user- centered design contributes to a positive and efficient custocmer experience when interacting with the kiosk system for over-the-counter medication needs.

CONCLUSIONS

Chapter 4 has presented a detailed analysis of the data collected regarding the Utilization of ClicKMedS (Click Kiosk Medication Support) into community pharmacies in Koronadal City. The study aimed to evaluate the impact of ClicKMedS on customer satisfaction, focusing on four key criteria: convenience, efficiency, accessibility, and operational ease.

The results demonstrate that ClicKMedS has been successfully utilized into the pharmacies, achieving high marks across all evaluated criteria. Specifically, customers found ClicKMedS to significantly enhance the convenience of purchasing over-the-counter medications. This indicated that the system met customer

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expectations for ease of use and quick access to medications. The system's efficiency was also rated highly. Customers appreciated the promptness and responsiveness of ClicKMedS, which facilitated a more efficient transaction process in the pharmacies. ClicKMedS was found to be highly accessible. The system's user-friendly interface and easy navigation were highlighted as key factors contributing to its positive reception among users. Additionally, the operational aspect of ClicKMedS reflected customers' confidence in the system's reliability and the support it provides to pharmacy operations.

The findings from Chapter 4 indicate that ClicKMedS effectively met the needs of both pharmacy staff and customers. The high levels of satisfaction and performance across all criteria suggested that ClicKMedS is a valuable addition to community pharmacies, improving operational efficiency and customer experience. These results support the broader adoption of ClicKMedS in similar settings to further enhance pharmacy services and customer satisfaction.

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REFERENCES

1. Tam, M. l., Yan, S., Fornell, C. R. (2013, August 7). Fitting facilities to self- service technology usage: Evidence from kiosks in Taiwan Airport. Journal of Air Transport Management https://www.sciencedirect.com/science/article /abs/pii/S09696997130008
2. Abdallah, A.B. and Alkhaldi, R.Z. (2019, February 24) Lean management in health care: a review of reviews of socio-technical components foreffective impact https://www. researchgate. net/ publication/349144946 Lean management inhealthcare a_review_of_reviews_of_sociot echnical_components_for_effective_impact
3. Alanazi, A. S., Shah, S., Abbas, G., Hussain, M., Saleem, A.,Khurram, H., Chand, U. R., Mallhi, T. H., Khan, Y. H., Ilyas, K., Tariq, S., Jamil, A., Alzarea, A. I., & Alzarea, S. I. (2023, January 5). Assessing Patient Satisfaction with Community Pharmacy Services: A Large Regional Study at Punjab, Pakistan.Patient preference and adherence, 17, 13–22. https://doi.org/10.2147/PPA.S389053
4. Alturki M, Khan TM (2012, September 21) A study investigating the level of satisfaction with the health services provided by the Pharmacist at ENT hospital, Eastern Region Alahsah, Kingdomof Saudi

Arabia https://pubmed.ncbi.nlm.nih.gov/23960841/
5. Amara, N., Naser, A. and Taybeh, E. (2023, March) Patient satisfaction with pharmaceutical services in Jordan: A cross-sectional study, View of patient satisfaction with pharmaceutical services in Jordan https://jjournals.ju.edu.jo/index.php/jjps/articl e/view
6. Ammenwerth, V., Guerlain, S., & Heinemann, F. (2019). User-centered design for self-service kiosks: A systematic review of the literature from 2008 to 2017. International Journal of Human-Computer Studies,127,130-146. [https://www.elsevier.es/en-revista-journal- innovation-knowledge-376-articulo-innovative-framework-for-self- servicekiosksS2444569X19300393]
7. Antonino K., Arena R., Baroña G., Cura C., David T., Dela Cruz A., De Vera R., Llanes C., Lu J.., & Tan A., (2022). Impact of direct-to- consumer pharmaceutical advertisement on thebuying behavior of over-the-counter drugs in Cabanatuan City, Nueva Ecija. GSC Biological and Pharmaceutical Sciences. https://www.gsconlinepress.com/jou rnals/gscbps/content/impact-direct-consumer- pharmaceutical-advertisement-buying- behavior-over-counter-drugs
8. Ayalew, M. B., Taye, K., Asfaw, D., Lemma, B., Dadi, F., Solomon, H., Tazeze, H., & Tsega, B. (2017). Patients'/Clients' Expectation Toward and Satisfaction from Pharmacy Services. Journal of research in pharmacy practice,6(1),21–26. https://doi.org/10.4103/2279-042X.200995
9. Chautrakarn, S., Khumros, W., Phutrakool, P. (2021, August 11) Selfmedicationwith over-the- counter medicines among the working agepopulation in metropolitan areas of Thailand https://www.frontiersin.org/articles
10. Choi and Park (2020) (PDF) user friendly and user satisfaction model aligned withFin Tech. https://www.researchgate.net/publication/348118586 User Friendly and User Satisfaction Model_Aligned_With_FinTech
11. Dehghan A., Bahman Z., Amir A., (2012, August 2). An Investigation on the Relationship between Service Quality and Customer Satisfaction: In the Case of CCG CO. Journal of Business Research. 5.10.5539/ibrv5n1p3 https://www.researchgate.net/publication/255 755707
12. Desta, H., Berhe, T. and Hintsa, S. (2018, July 11) Assessment of patients' satisfaction and associated factors among outpatients received mental health services at public hospitals of Mekelle Town, northern Ethiopia https://ijmhs.biomedcentral.com/articles/10.1 186/s13033-018-0217
13. Ayele, Y., Hawulte, B., Feto, T., Basker, G. V., & Bacha, Y. D. (2020). Assessment of patient satisfaction with pharmacy service and associated factors in public hospitals, Eastern Ethiopia. SAGE Open Medicine, 8, 205031212092265.https://doi.org/10.1177/2050312120922659
14. Boulton, M., Brewster, S., & Walker, G. (2015). Usability testing of a self-service information kiosk for older adults. Interacting withComputers, 27(2), 182193.https://www.researchgate.net/publication/351656283_Enhancing_the_Usbility_of_ Selfservice_Kiosks_for_Older_Adults_Effects_of_Using_Privacy_Partitions_and_Chairs
15. Chang, A., Zheng, B., Zhou, C., & Xu, J. (2015). The potential impact of e- healthon healthcare spending in the United States: An economic evaluation. HealthEconomics,24(11)14221440.https://onlinelibrary.wiley.com/doi/abs/101002/hec.329 2
16. El-Kholy A., Abdelaal K., Alqhtani H., Abdel- Wahab L., Abdel-Latif M. (2022) Publics' Perceptions of Community Pharmacists and Satisfaction with Pharmacy Services in Al- Madinah City,Saudi Arabia https://pubmed.ncbi.nlm.nih.gov/35334609/
17. Global Policy and International Public Affairs (2015, July)ThevalueofOTCmedicines https://cdn.pfizer.com/pfizercom/health/VO M_OTC.pdf Halton, C. (2023, June 16). Diffusion of Innovations Theory: Definition andExamples https://www.investopedia. com/ terms/d/diffusi on-of-innovations-theory.
18. Hamidi, F., Mokhtar, S., & Zaidi, S. Z. (2018). A framework for developing-user-centered self- service kiosks. International Journal of Human Computer Interaction, 34(12), 11301142.IsraelJ.B.D.N,Hebatullah M.A, Lenny T.V, Edson Z.M, Miriane L.Z, Lasse
19. Joshi, A., & Trout, K. (2014). The role of health information kiosks in diverse settings: a systematic review. Health Information and Libraries Journal, 31(4), 254–273. https://doi.org/10.1111/hir.12081
20. Kaur, P., Arora, S., & Malhotra, S. (2019). User- centered design in healthcare: A systematic review. International Journal of Healthcare Management, 13(2), 112-120.
21. Kim, J.Y., Kim, S.H., & Jeong, Y.S. (2018). Usability evaluation of a medication dispensing kiosk using the concept of user experience. International journal of industrial ergonomics, 66, 272- 282.

22. Letafat-Nejad, M., Ebrahimi, P.,Maleki, M.,&Aryankhesal, A. (2020). Utilization of Integrated Health Kiosks: A systematic review. Medical journal Of The Islamic RepublicofIran. https://www.ncbi.nlm.nih.gov/pmc/articles/P MC7722958/
23. Lesselroth B, Adams S; Felder R; Dorr DA; Cauthers P; Church V., (2009). Using consumer-based kiosk technology to improve and standardize medication reconciliation in a specialty care setting. Joint Commission journal on quality and patient safety. https://pubmed.ncbi.nlm.nih.gov/19480380/
24. Li, D., Sun, Y., & Liu, Y. (2016). Usability evaluation of a self-service kiosk for scenic spot ticketing. Applied Mechanics and Materials, 884-885, 130-134.
25. Liu, Y., Li, H., & Sun, Y. (2014). The impact of emotional design on user trust in self-service kiosks. International Journal of Human- Computer Interaction, 30(10), 743-754.
26. Maramba, I. D., Jones, R., Austin, D., Edwards, K., Meinert, E., Chatterjee, A. (2022, March 29). The Role of Health Kiosks: Scoping Review https://pubmed.ncbi.nlm.nih.gov/35348457/
27. Marinakou,E.,Giousmpasoglou,C.(2023) Customer intention to reuse self-ordering kiosks in fast food https://www.researchgate.net/publication/374 065935_Customer_intention_to_reuse_selfordering_kiosks_in_fastfood_restaurant_the_ca se_of_Bangkok_Thailand
28. McCue, J. F., Rao, S. R., & Asch, S. M. (2019). Transparency in healthcare pricing: A review of the evidence. Milbank Quarterly, 97(2), 321-370. https://www.ncbi.nlm.nih.gov/pmc/articles/P MC10357344/
29. Molugulu N, Nee NS, Matanjun D, Urban J, Balana R (2012, June 20). Patient satisfaction on general, intervention and cognitive services amongretailpharmaciesinKota Kinabalu,Malaysia. https://www.irjponline.com/admin/php/uploa ds/1301_pdf
30. Naik, C.N., Gantasala, S.P. and Prabhakar, G.V. (2010, January), "Service quality (servqual) and itseffect on customer satisfaction inretailinghttps://www.researchgate.net/publi cation/292272878_Service_quality_servqual_ and_its_effect_on_customer_satisfaction_in_ retailing
31. Nascimento, I. J. B. D., Abdulazeem, H. M., Vasanthan, L. T., Martinez, E. Z., Zucoloto, M. L., Østengaard, L., Azzopardi-Muscat, N., Zapata, T., & Novillo-Ortiz, D. (2023). The global effect of digital health technologies on health workers' competencies and health workplace: an umbrella review of systematic reviews and lexical-based and sentence-based meta-analysis˜the œLancet. https://doi.org/10.1016/s2589- 7500(23)00092-4
32. Ofei-Dodoo S. (2019, March 26). Patient satisfaction and treatment outcomes of primary care practiceinGhana.Ghanamedical journal,53(1), 6370. https://www. researchgate. net/ publicatio n
33. Peterson, C. A., Chase, H. N., & Banerjee, S. (2017). Health literacy and medication adherence: A systematicreview.JournalofGeneral InternalMedicine,32(8),0021010.[https://ww w.ncbi. nlm.nih.gov/pmc/articles/PMC553170 0/]
34. Patterson, J., Brooks, C., & James, J. (2017). The impact of self-service kiosks on customer satisfaction and pharmacy workflow in community pharmacies: A pilot study. Journal of the American Pharmacists Association, 57(2), 228-234.
35. Pineles L.L, Parente R. (2013). Using the Theory of Planned Behavior to Predict Self- Medication with Over-the-Counter Analgesics https://www.researchgate.net/publication/233 879609
36. Pineles L.L, Parente R., (2012) Theory of planned behavior applied To self-medication with OTC pain Planned-behavior applied-to-self- medication-with-OTC-pain-medicines OTC fig1 233879609
37. Proença, M. H. D. (2021). The application of social media for Marketing Strategies in Pharma Healthcare https://repositorio.iscte-iul.pt/
38. Ruzaihan, M. I. H., Hashim, F., Eni, S., & Zainal, R. (2020, December 1). Service quality level and customer satisfaction of pharmaceutical storesinMuar, Johor.https://penerbit.uthm.edu.my/periodicals/index.php/rmtb/article/view/570
39. Schwalbe N., Wahl B. (2020, May 16) Artificial Intelligence and the future global healthhttps://www.thelancet.com/journals/lan cet/article/PIIS01406736(20)30226-9/fulltext
40. Seo, K. H. (2020, October 22). A study on the application of kiosk service as the workplace flexibility: The Determinants of Expanded Technology Adoption and trust of ClicK Service Restaurantcustomers.MDPI. https://www.mdpi.com/2071- 1050/12/21/8790
41. Seubert, L., Kerry, W., Laetitia, H., Watson, M., Clifford, R. (2019, June 20). A theory-based intervention to enhance information exchange during over- the-counter consultations in community

pharmacy: A feasibility study. Pharmacy,7(2),73. https://doi.org/10.3390/pharmacy702007

42. Shaikh, Z. A., Sathio, A. A., Laghari, A. A., & Hussain, I. (2019). Study of the role of New Technologiesinpharmaceuticalindustry. Research Gate. https://www.researchgate.net/publication/337 331500
43. Smirnova, A., Lombarts, K. M. J. M. H., Arah, O. A., & van der Vleuten, C. P. M. (2017, October). Closing the patient experience chasm: A two- level validation of the Consumer Quality Index Inpatient Hospital Care. Health expectations:an international journal of public participation in health care and health policy. https://www.ncbi.nlm.nih.gov/pmc/articles/P MC5600232/ Smith et al. (2023)(PDF) the implementation of self- ordering kiosks (SOKS): Investigating the challenges in fast food restaurants. (n.d.-b). https://www.researchgate.net/publication/3559 21267 The Implementation of Self Ordering Kiosks SOKs Investigating the Challenges in Fast Food Restaurants
44. Tabone W.F., Azzopardi L.M, Gauci M, Zarb A.M, Serracino I., (2010). A Consumer perception of the community pharmacistand communitypharmacyservicesin Malta.J Pharm. Health https://www.researchgate.net/publication/227 680195
45. Thompson D.A, Yarnold P.R, D R Williams, S L Adams (n.d) Effects of Actual Waiting Time,Perceive Waiting Time, Information Delivery, and Expressive Quality on Patient Satisfaction in the E ency Department https://pubmed.ncbi.nlm.nih.gov
46. Thompson P. (2019, August 15). 10.1 technology acceptance model. Foundations of Educational Technology. https://open.library.okstate.edu U.S. National Library of Medicine. (2022, August 11). Using over-the-counter medicines safely:https://medlineplus.gov/ency/patientin structions
47. Van Osselaer, S. H., & Van den Poel, D. B. (2016). Factors influencing consume adoption of online pharmacies: A review and future research directions. International Journal of Pharmaceutical Research, 7(3), 233-242. https://repositorio- aberto.up.pt/bitstream/10216/139908/2/53338 0.pdf
48. Weller, D. S., Racine, N. E., Giurgiu, L., Keating, A. N., & Boulton, M. (2012). Older adults' perceptions of self-service kiosks: a focus group study. The Gerontologist, 52(2), 220-230.https://academic.oup.com/gerontologist/i ssue/60/Supplement_
49. Yadav, K., & Desai, N. (2018). The impact of disruptive technologies in healthcare. International Journal of ealthcare Management, 12(1),18-23
50. Yen, H. Y., Lin, Y. C., & Lin, Y. F. (2018). A framework for developing self-service kiosks for medication information retrieval in pharmacies. Journal of the American Pharmacists Association, 58(7), 892-901.
51. Yim, S. Y., & Choi, Y. H. (2015). The effects of kiosk design aesthetics on user experience and perceived usefulness. International Journal of Human-Computer Interaction, 31(12), 906-919.
52. Zhou, Z., Li, X., Liu, J., & Li, J. (2020). Usability evaluation of a self-service healthcare kiosk in a hospital. International Journal of Medical Informatics, 142, 104227.