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QUALIFICATION WORK

on the topic: «**ASSESSMENT OF THE EFFECTIVENESS OF QUALITY CONTROL MECHANISMS FOR PHARMACEUTICAL SERVICES IN PHARMACIES**»

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АНОТАЦІЯ

У даній роботі здійснено оцінку ефективності механізмів контролю якості фармацевтичних послуг у аптеках. Проаналізовано існуючі методи контролю якості, визначено їх сильні та слабкі сторони, а також розроблено рекомендації щодо вдосконалення системи контролю. Загальний обсяг кваліфікаційної роботи становить 44 сторінки, містить 25 рисунків. Список літератури включає 30 джерел.

Ключові слова: контроль якості, фармацевтичні послуги, аптеки, механізми контролю, ефективність.

ANNOTATION

This work assesses the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies. Existing quality control methods are analyzed, their strengths and weaknesses are identified, and recommendations for improving the control system are developed. The total volume of the qualification work is 44 pages, contains 25 figures. The list of references includes 30 sources.

Keywords: quality control, pharmaceutical services, pharmacies, control mechanisms, effectiveness.

CONTENT

INTRODUCTION

Relevance of the research topic. The pharmaceutical industry plays a vital role in the healthcare sector by ensuring the safe and effective delivery of medications and related services to the public. In this regard, the quality of pharmaceutical services in pharmacies directly impacts the health and well-being of individuals and communities. Given this critical role, maintaining high standards of quality in pharmaceutical services is paramount, which is why the assessment of quality control mechanisms in pharmacies is of significant importance. Quality control mechanisms are designed to ensure that pharmaceutical services, including the dispensing of medications, counseling, patient safety, and regulatory compliance, are performed to the highest standards [3].

The relevance of this research lies in the increasing demand for effective and efficient pharmaceutical services in an era where healthcare systems are evolving rapidly, and patients expect greater accountability and reliability from healthcare providers. As pharmacies are essential points of contact between patients and healthcare providers, their ability to deliver safe and high-quality pharmaceutical services is crucial in safeguarding public health. However, despite the implementation of various quality control systems, challenges persist in ensuring consistent adherence to quality standards across all pharmacies. These challenges range from the lack of standardized protocols to the inadequate training of pharmacy staff and limited technological integration [4].

In many countries, the pharmaceutical industry faces growing pressure to improve service delivery and enhance the quality of care in pharmacies. This is particularly important as pharmacies expand their services, such as offering vaccinations, health screenings, and counseling for chronic diseases, which require even more rigorous control of service quality. With the constant advancement of pharmaceutical technologies and the increasing complexity of pharmaceutical services, it is crucial to continuously assess and adapt the quality control mechanisms in place [2].

Moreover, pharmacies operate in a highly regulated environment, where adherence to standards set by national and international health organizations is essential. For instance, regulatory bodies such as the World Health Organization (WHO), the International Pharmaceutical Federation (FIP), and national health ministry's set guidelines and standards to which pharmacies must adhere. However, while these regulations are in place, their enforcement, adaptation to local conditions, and the effective implementation of these standards in daily pharmacy practices can vary significantly. A study assessing the effectiveness of these quality control mechanisms in pharmacies will shed light on gaps in compliance, challenges in applying regulatory requirements, and areas that need improvement [21].

In addition, technological advancements, such as the use of electronic health records (EHRs), digital prescriptions, and automated dispensing systems, have revolutionized the way pharmaceutical services are delivered. While these technologies present opportunities for improving the efficiency and accuracy of pharmacy services, they also introduce new risks if not properly integrated into quality control systems. The integration of new technologies into pharmacy practice requires continuous evaluation to ensure that these innovations enhance service delivery without compromising safety or quality [11].

The importance of this research is further underscored by the growing recognition of the role of pharmaceutical services in promoting public health. As health systems increasingly emphasize patient-centered care, there is a greater need for pharmacies to play an active role in managing patients' medication therapy, providing advice on lifestyle changes, and promoting the rational use of medicines. These expanded responsibilities necessitate a robust system of quality control to ensure that pharmacies are not only complying with regulatory standards but also meeting the expectations of patients and other healthcare providers [4].

In recent years, there has been an increase in research and development in the field of pharmaceutical services, with a particular focus on quality improvement. However, despite these efforts, there is a noticeable gap in comprehensive studies that assess the actual effectiveness of quality control mechanisms across different

pharmacy settings. This research seeks to fill this gap by providing a detailed evaluation of existing quality control systems, their impact on service delivery, and recommendations for improvement [8].

The findings from this study will have far-reaching implications for pharmacy practice, especially in terms of optimizing the mechanisms for quality control to improve patient outcomes and the efficiency of pharmacy operations. It will provide insights into the current state of quality control in pharmacies and suggest actionable improvements that can be made at both the organizational and regulatory levels. Furthermore, this research will contribute to the body of knowledge in the field of pharmaceutical services and serve as a valuable resource for policymakers, pharmacy managers, and health professionals interested in enhancing the quality of pharmaceutical services [12].

In conclusion, the topic of assessing the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies is highly relevant and timely. Given the growing complexity of pharmacy services, the need for continuous evaluation and enhancement of quality control mechanisms has never been more pressing. This research aims to address this need by providing a comprehensive assessment of current practices, identifying challenges, and offering recommendations to ensure that pharmacies continue to deliver safe, effective, and high-quality services to the public [10].

The purpose of the qualification work is assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies.

To achieve the goal of the qualification work, it is necessary to solve the following **tasks**:

▪ to reveal the role and impact of quality control mechanisms in pharmacies;

▪ to describe the regulatory frameworks and standards for pharmaceutical services quality;

▪ to assess of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies;

■ to study challenges and inefficiencies in current quality control practices;

■ to identify integration of new technologies and digital solutions for quality control in pharmacies;

■ to explore the development practices for implementing quality control improvements in pharmacy services.

The object of the study is the quality control mechanisms for pharmaceutical services in pharmacies.

The subject of the study is the assessment of the effectiveness of these quality control mechanisms in ensuring the provision of safe and efficient pharmaceutical services.

Research **methods** were used: literature review, document analysis, case study analysis, surveys and questionnaires, interviews, benchmarking, statistical analysis, SWOT analysis, action research, focus groups.

Practical significance of the obtained results. The practical significance of the obtained results lies in their potential to enhance the quality of pharmaceutical services through improved quality control mechanisms in pharmacies. By assessing the effectiveness of existing quality control systems, this research offers valuable insights that can directly contribute to better management practices, increased service efficiency, and improved patient outcomes.

Approbation of research results and publication. Qualification work is approved on XXXI International Scientifical and Practical Conference of Young Scientists and Students" Topical issues of new medicines development ". Abstracts of the reports have been published: Abdelati Rouane, Bondarieva I. V. Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies. Topical issues of new medicines development : матеріали XXXI International Scientifical and Practical Conference of Young Scientists and Students (23-25 April 2025, Kharkiv). – Kharkiv: NUPh, 2025. –P. 414.

Structure and scope of the qualification work. The qualification work includes an introduction, a literature review, an experimental section, summarized

conclusions, a list of references, and appendices. The total length of the work is 44 pages, featuring 25 figures. A total of 30 sources of literature were utilized and analyzed during the research.

CHAPTER I
THEORETICAL BASIS OF QUALITY CONTROL IN
PHARMACEUTICAL SERVICES

1.1. The role and impact of quality control mechanisms in pharmacies

Quality control mechanisms in pharmacies play a fundamental role in ensuring the safety, efficacy, and reliability of pharmaceutical products and services. These mechanisms encompass a wide range of regulatory standards, procedural checks, and monitoring systems that collectively work to uphold the highest standards of pharmaceutical care. The implementation of quality control measures in pharmacies is critical to protecting public health, reducing medication errors, and maintaining consumer trust in the healthcare system. This work explores the various aspects of quality control mechanisms in pharmacies, their significance, and the impact they have on the overall efficiency of pharmaceutical services [5].

Quality control mechanisms in pharmacies are primarily governed by regulatory agencies such as the Food and Drug Administration (FDA), the European Medicines Agency (EMA), and national health authorities. These regulatory bodies establish guidelines that dictate how pharmacies must operate to ensure compliance with Good Pharmaceutical Practice (GPP) standards. Compliance with these regulations involves adherence to stringent protocols in drug storage, dispensing, and documentation. Pharmacies must also ensure that their staff members are well-trained in handling medications and providing accurate information to patients [20].

One of the key aspects of regulatory compliance is adherence to Good Manufacturing Practices (GMP) and Good Distribution Practices (GDP). These practices ensure that pharmaceuticals are produced and distributed under controlled conditions, minimizing the risk of contamination, adulteration, or counterfeit medications entering the supply chain. Regular inspections and audits by regulatory bodies help identify potential issues, ensuring that pharmacies maintain the required standards at all times [5].

Quality control mechanisms in pharmacies significantly contribute to

medication safety and the prevention of errors. Medication errors can have serious consequences, including adverse drug reactions, treatment failures, and patient harm. To mitigate such risks, pharmacies implement standardized protocols such as double-checking prescriptions, using barcode scanning technology, and employing electronic health records (EHRs) to track patient medication histories [4].

Pharmacists play a crucial role in reviewing prescriptions for potential drug interactions, incorrect dosages, and patient allergies. Advanced quality control systems integrate artificial intelligence (AI) and machine learning algorithms to detect anomalies in prescriptions and flag potential risks before dispensing medications. Moreover, patient counseling is an essential component of quality control, as pharmacists educate patients on proper medication use, possible side effects, and adherence to prescribed therapies [12].

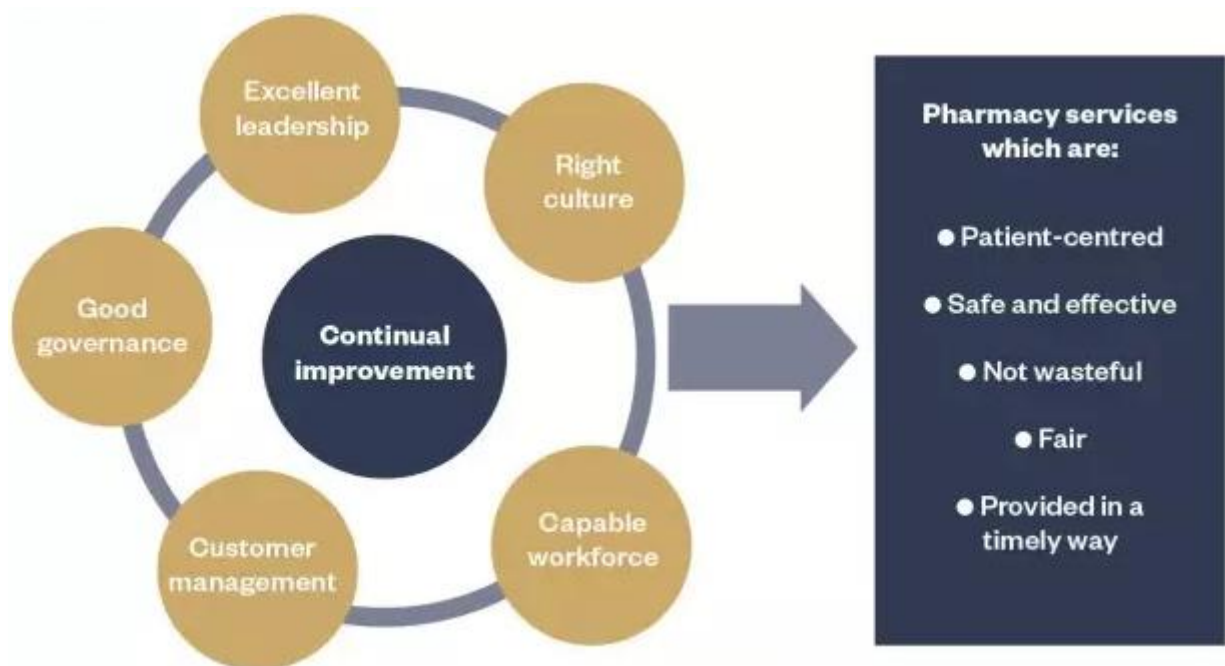Fig. 1.1. presents the quality system in pharmacy.

Fig. 1.1. The quality system in pharmacy

Another critical aspect of quality control mechanism in pharmacies is ensuring the integrity of pharmaceutical products. The supply chain plays a vital role in maintaining drug quality, from manufacturing to the point of dispensing. Pharmacies must implement strict inventory management systems to prevent expired or

substandard medications from reaching consumers. This includes monitoring temperature-sensitive drugs, maintaining proper storage conditions, and verifying the authenticity of received shipments [13].

Technological advancements, such as radio-frequency identification (RFID) and blockchain-based tracking systems, have revolutionized supply chain management in pharmacies. These innovations enable real-time monitoring of drug shipments, ensuring that medications are stored and transported under optimal conditions. Counterfeit drugs pose a significant threat to public health, and quality control mechanisms help detect and eliminate fraudulent products from the market [28].

The classification of quality management is presented on Fig.1.2.
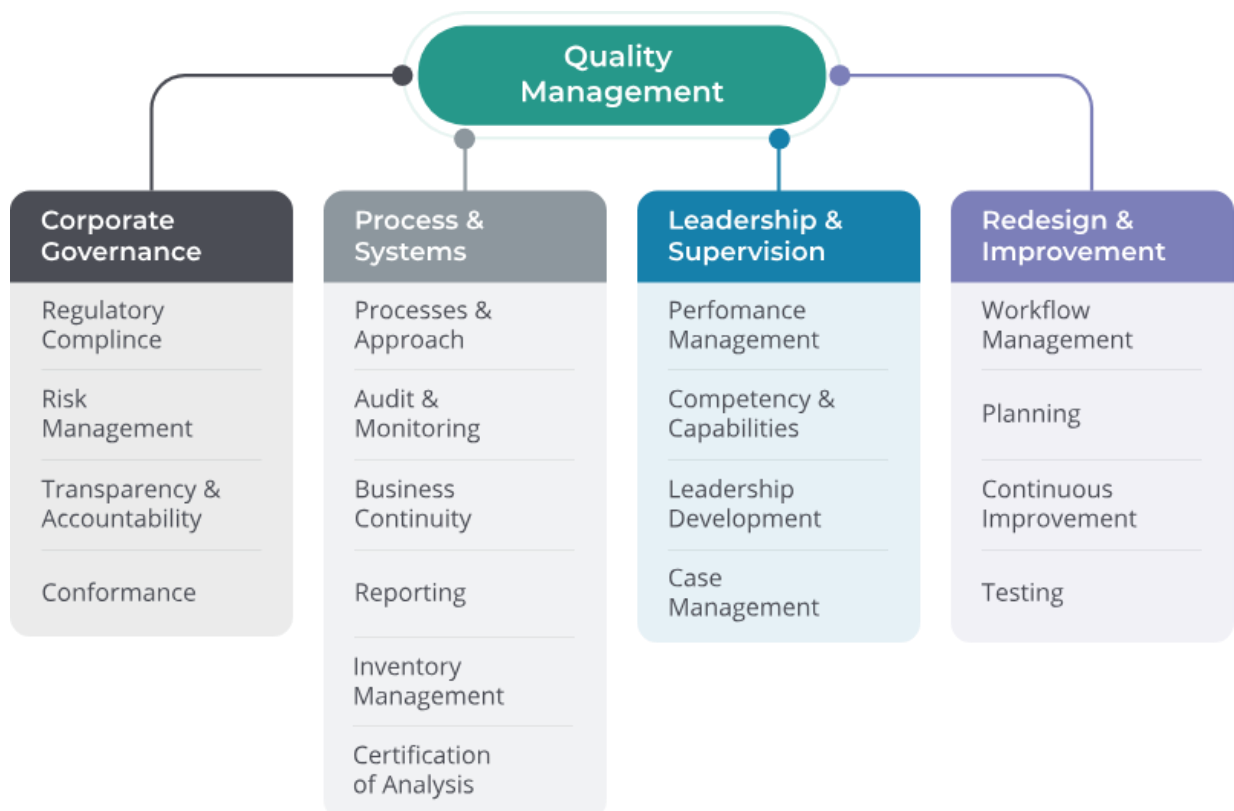

Fig. 1.2. The classification of quality management

Effective quality control mechanisms in pharmacies directly influence patient satisfaction and public trust in the healthcare system. Patients rely on pharmacies

not only for medications but also for professional guidance on health-related issues. When pharmacies adhere to stringent quality control measures, patients feel confident in the safety and efficacy of their prescribed treatments [8].

Customer feedback systems, complaint resolution processes, and quality assurance audits contribute to continuous improvement in pharmaceutical services. Pharmacies that prioritize quality control often implement patient-centered initiatives, such as medication therapy management programs, to enhance treatment outcomes. These programs involve personalized medication reviews, adherence counseling, and chronic disease management support [20].

Despite the numerous benefits of quality control mechanisms, pharmacies face several challenges in maintaining compliance and efficiency [12]. One of the primary challenges is the increasing complexity of pharmaceutical regulations, which requires continuous staff training and adaptation to new guidelines. Additionally, small and independent pharmacies may struggle with the financial burden of implementing advanced quality control technologies [13].

The future of quality control in pharmacies lies in the integration of digital health solutions and automation. Artificial intelligence-driven decision support systems, robotic dispensing units, and real-time analytics can streamline pharmacy operations and enhance accuracy in medication dispensing. Furthermore, the adoption of telepharmacy services can extend the reach of quality pharmaceutical care to remote and underserved areas, ensuring equitable access to safe medications [7].

So, quality control mechanisms in pharmacies are essential for safeguarding public health, ensuring medication safety, and maintaining trust in the pharmaceutical industry. Regulatory compliance, medication error prevention, product integrity, and patient-centered care are key components of an effective quality control framework. While challenges exist, advancements in technology and automation hold great promise for enhancing the efficiency and reliability of pharmaceutical services. As pharmacies continue to evolve, a strong commitment to quality control will remain paramount in delivering optimal patient care and

improving health outcomes [29].

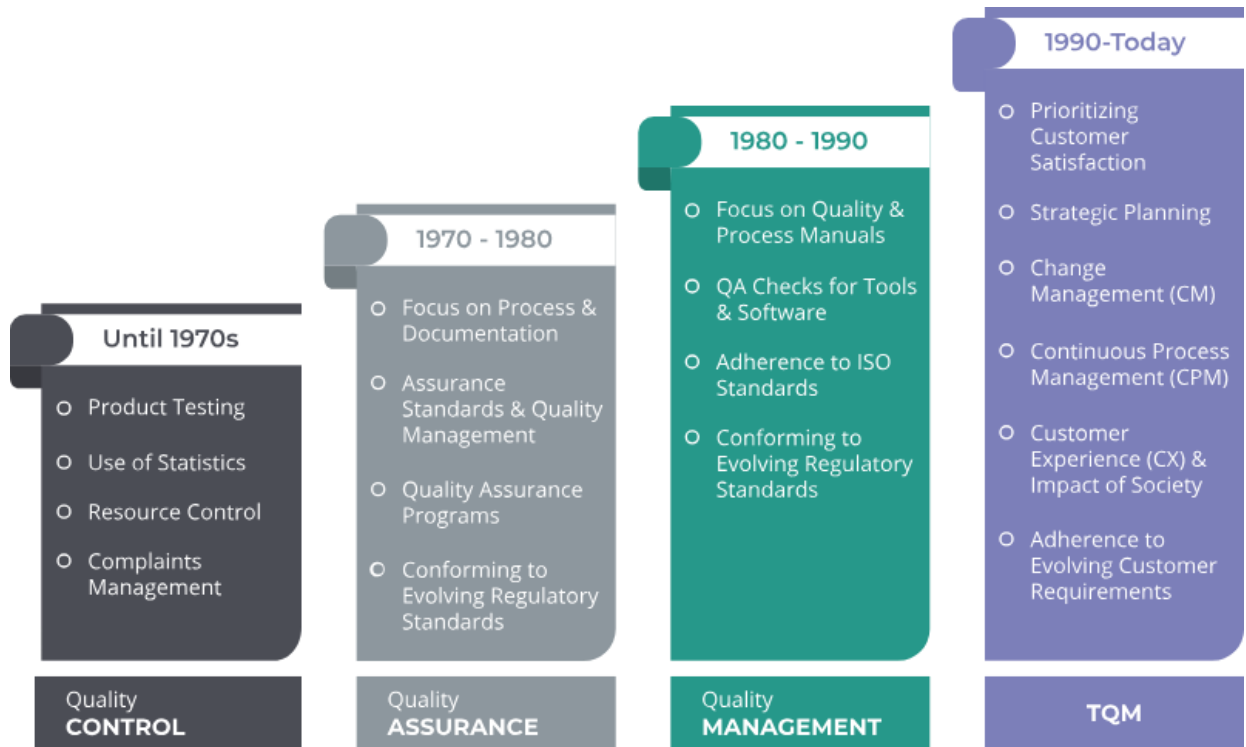Fig. 1.3. presents the evolution of quality management [19].

Fig. 1.3. The evolution of quality management [19].

1.2. Regulatory frameworks and standards for pharmaceutical services quality

Ensuring the quality of pharmaceutical services is paramount to safeguarding public health and promoting patient safety. To achieve this, a complex network of regulatory frameworks and standards exists at national and international levels. These frameworks provide a structured approach to regulating pharmaceutical activities, ensuring that medicines are safe, effective, and of high quality. Key regulatory bodies and frameworks that shape the quality of pharmaceutical services globally include the World Health Organization (WHO), which sets international standards and guidelines for pharmaceutical regulation, promoting the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH), which aims to harmonize technical requirements for pharmaceutical product registration, ensuring that safe, effective, and high-quality medicines are developed and registered efficiently; and National Regulatory

Authorities, which oversee pharmaceutical activities within their own countries [16].

Key standards and guidelines widely adopted to ensure the quality of pharmaceutical services include Good Manufacturing Practices (GMP), which provide a framework for ensuring the quality of manufacturing processes and facilities; Good Clinical Practices (GCP), which ensure the ethical and scientific quality of clinical trials; Good Distribution Practices (GDP), which cover the distribution of medicinal products, ensuring that they are stored, transported, and handled in a way that maintains their quality and integrity; Pharmacovigilance systems, which monitor the safety of medicines after they have been marketed; and Quality Management Systems (QMS), such as ISO 9001, which provide a framework for managing and improving quality across all aspects of pharmaceutical operations [5].

Fig. 1.4. presents the drug regulatory affairs.

Fig. 1.4. Drug regulatory affairs

It is essential to focus specifically on the quality of pharmaceutical services provided in various settings, such as community pharmacies, hospital pharmacies, and others pharmacies. These services include accurate and timely dispensing of

medications, providing patients with clear and concise information about their medications, comprehensive medication reviews and consultations to optimize medication therapy, administering vaccines, and providing health screenings. To ensure the quality of these services, key aspects to consider include personnel qualifications, appropriate premises and equipment, standard operating procedures (SOPs), patient counseling, medication safety, and continuous quality improvement [22].

Despite significant progress in regulating and standardizing pharmaceutical services, challenges remain, including globalization, technological advancements, and increasing patient expectations. To address these challenges, future directions include strengthening international collaboration and harmonization of regulatory frameworks, developing flexible and adaptive regulatory approaches, promoting patient-centric care, and enhancing the use of data and analytics to monitor and improve the quality of pharmaceutical services. Regulatory frameworks and standards play a vital role in ensuring the quality of pharmaceutical services, safeguarding public health, and promoting patient safety. By continuously adapting and improving these frameworks, we can ensure that patients receive safe, effective, and high-quality pharmaceutical care. The pharmaceutical industry, regulatory authorities, healthcare professionals, and patients must work together to uphold the highest standards of quality in pharmaceutical services, contributing to better health outcomes for all [1].

Conclusions to chapter I

1.   The role and impact of quality control mechanisms in pharmacies are characterized.

2.   Regulatory frameworks and standards for pharmaceutical services quality are revealed.

CHAPTER II

ANALYSIS OF EXISTING QUALITY CONTROL MECHANISMS IN PHARMACIES

2.1. Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies

For assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies a survey of 46 pharmacists was conducted (Appendix A). During the work, information about pharmacists' familiarity with the internal quality standards for pharmaceutical services in force in their pharmacy. It was found that 82% of the surveyed respondents were completely familiar, 15% partially familiar, and 3% unfamiliar (Fig. 2.1).
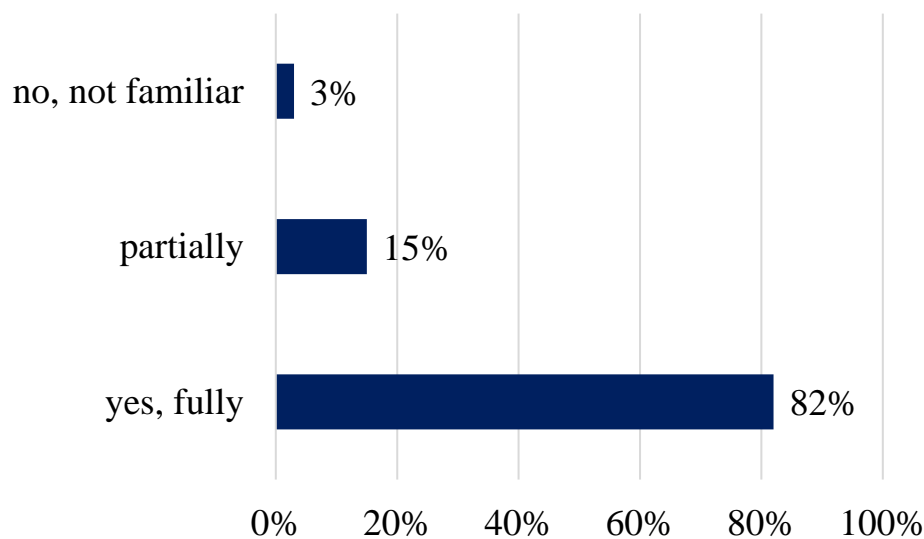

Fig. 2.1. Analysis of pharmacist familiarity with internal quality standards

The respondents were asked to assess how well they believe quality control mechanisms are implemented in their pharmacies (Fig. 2.2). The results showed that 71% of participants rated the quality control process as very effective, 13% as effective, 9% as satisfactory, and 7% as ineffective. These findings indicate that the majority of pharmacists perceive the current quality control measures as highly

effective, though there remains a small percentage of professionals who find them only satisfactory or ineffective.

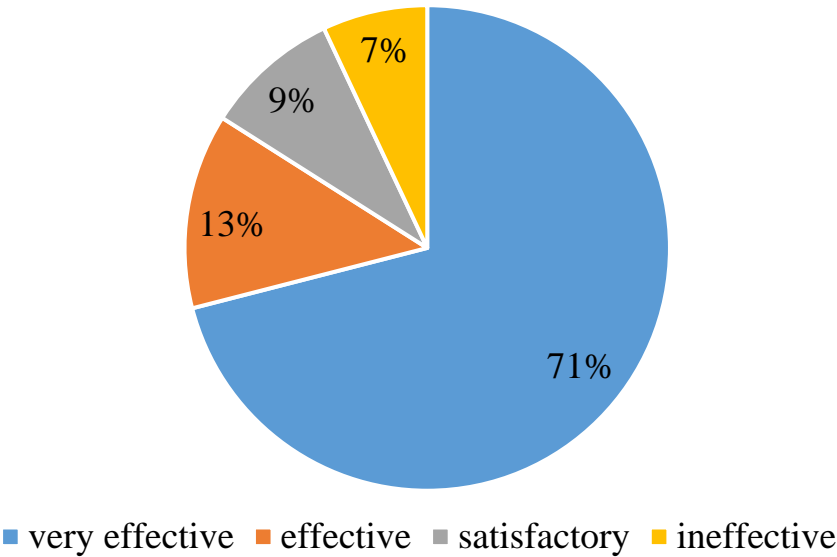■ very effective ■ effective ■ satisfactory ■ ineffective

Fig. 2.2. Evaluation of the effectiveness of quality control in prescription and medicine dispensing

The survey results indicate that respondents confirmed that regular checks of compliance with quality standards for pharmaceutical services are carried out in their pharmacy. Among them, 86% reported that such checks occur regularly on a monthly or quarterly basis, while 10% stated that they take place once a year. However, 4% indicated that these checks are not conducted at all (Fig. 2.3).
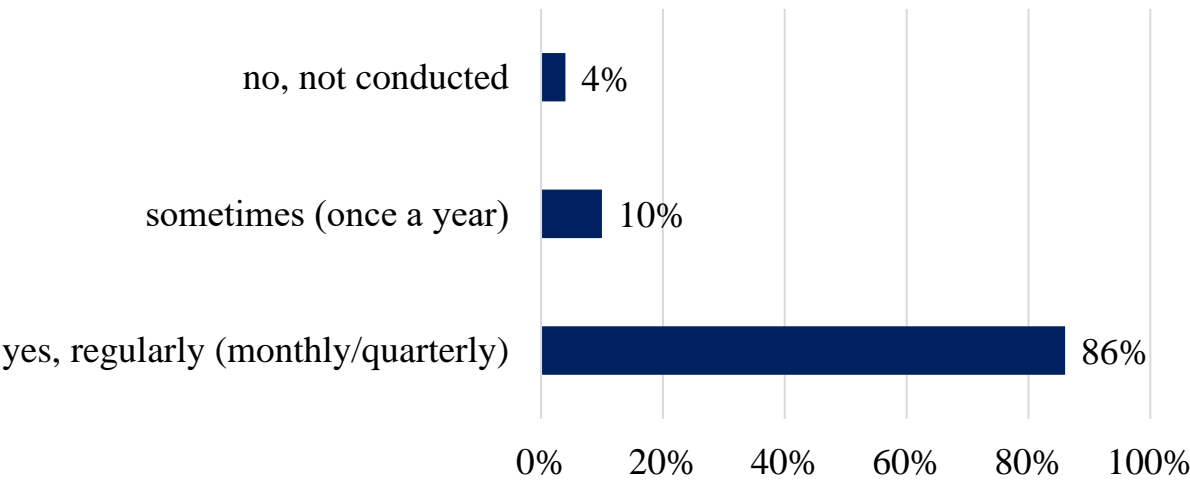

Fig. 2.3. Analysis of regular checks of compliance with quality standards for pharmaceutical services carried out in pharmacy

It was set to determine the level of pharmacist's satisfaction with the quality of internal audits of quality control of pharmaceutical services. The survey revealed that a significant majority, 70%, of respondents were completely satisfied. Additionally, 23% expressed satisfaction, bringing the total percentage of satisfied customers to 93%. A small fraction, 3%, remained neutral, while 4% reported dissatisfaction with the internal audits. This data indicates a high level of confidence in the quality control measures implemented for pharmaceutical services (Fig. 2.4).
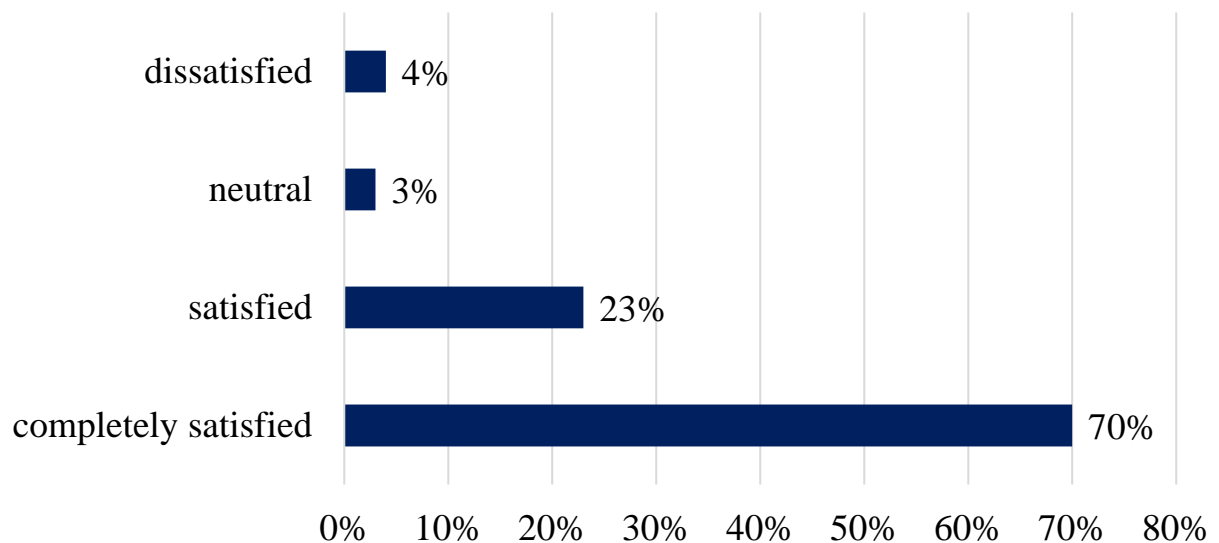

Fig. 2.4. Analysis of level of pharmacist's satisfaction with the quality of internal audits of quality control of pharmaceutical services

The survey question aimed to assess pharmacists' perspectives on whether the quality control system in pharmaceutical services effectively helps prevent errors in dispensing medicines (Fig. 2.5). The results indicate that a majority of respondents (60%) expressed full confidence in the system by selecting "yes, completely." This suggests that they believe the implemented quality control measures are well-structured and efficient in minimizing dispensing mistakes.

Meanwhile, 24% of respondents chose "more likely than not," implying that although they acknowledge the system's effectiveness, they may have encountered occasional issues or areas where improvement is necessary. This group likely sees the quality control system as generally reliable but not entirely foolproof.

On the other hand, 16% of pharmacists responded with "not at all," indicating skepticism or dissatisfaction with the system's ability to prevent dispensing errors. Their concerns may stem from inadequate training, technological limitations, or inconsistencies in quality control procedures.

Overall, the data highlight that while a significant portion of pharmacists trust the quality control system, there remains a notable percentage who perceive gaps in its effectiveness, emphasizing the need for continuous evaluation and potential improvements.
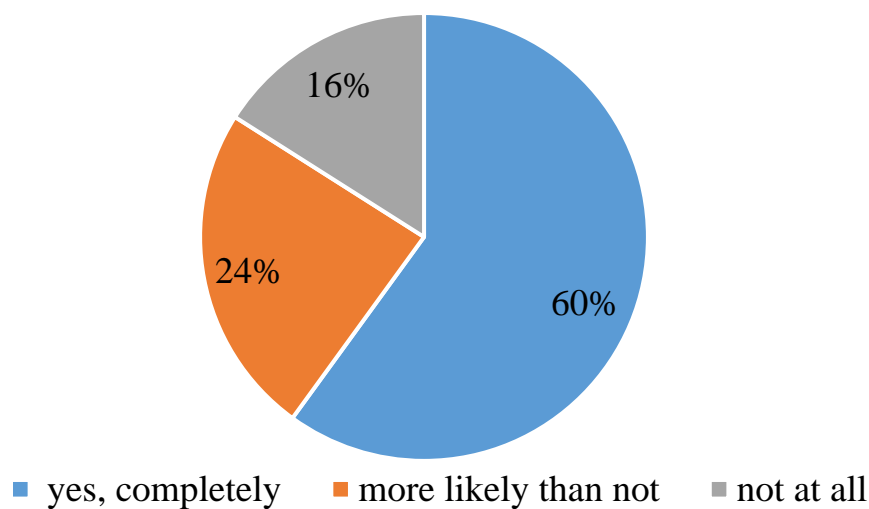
Fig. 2.5. Analysis of the answers of respondents whether they believe that the quality control system in pharmaceutical services helps prevent errors in dispensing medicines

At the next stage of our work, we found that 67% of respondents answered "yes" to the question of whether their pharmacy uses modern information technologies to control the quality of pharmaceutical services, such as electronic prescription accounting and expiration date tracking systems.

Meanwhile, 20% of respondents indicated that their pharmacy partially implements such technologies, while the remaining 13% stated that they do not use them at all (Fig. 2.6).
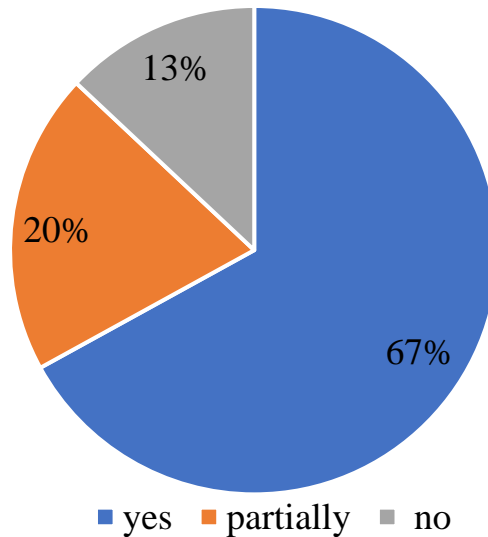
Fig. 2.6. Implementation of modern information technologies in pharmaceutical services

Further of interest was the information regarding the opinions of pharmacists surveyed during the study. It was determined that 51% of respondents considered the quality control of patient counseling on the use of medicines to be very effective (Fig. 2.7).
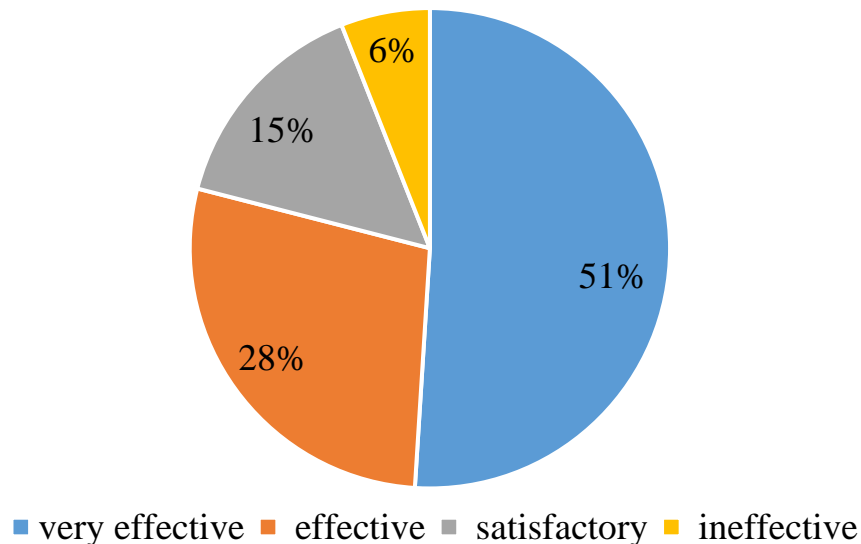
Fig. 2.7. Research on the effectiveness of quality control in patient counseling

Meanwhile, 28% of respondents rated it as effective, indicating that while they recognized the system's reliability, they still saw room for improvement.

Additionally, 15% of pharmacists described the quality control as satisfactory, suggesting that it meets the minimum requirements but could benefit from significant enhancements. Lastly, only 6% of respondents found the system ineffective, which may indicate the presence of systemic issues, insufficient training, or a lack of necessary resources to ensure proper patient counseling (Fig. 2.7).

It was set that the majority of respondents (54%) reported that their pharmacy does not provide any education or training for pharmacists on quality control of pharmaceutical services. This indicates a significant gap in professional development, which may impact the overall effectiveness of pharmaceutical quality assurance (Fig. 2.8).
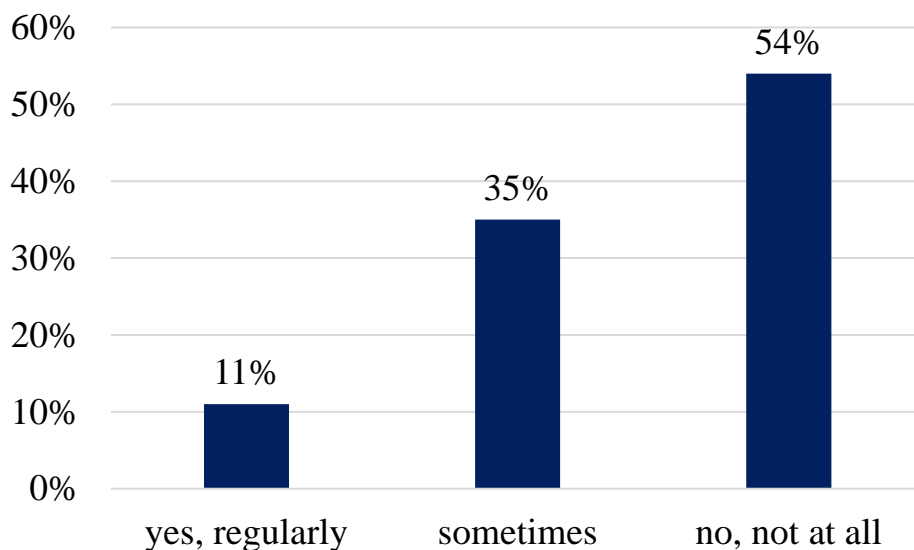
Fig. 2.8. Study of training for pharmacists on quality control of pharmaceutical services

Meanwhile, 35% of respondents stated that their pharmacy offers training only occasionally, suggesting that while some efforts are made, they may not be sufficient or consistent. This group likely experiences intermittent training sessions that might not be adequate for keeping pharmacists up to date with the latest quality control standards and best practices.

Only 11% of respondents confirmed that their pharmacy regularly provides structured education and training on quality control. This small percentage indicates

that only a minority of pharmacies prioritize continuous professional development in this area, ensuring that their pharmacists are well-equipped to maintain high standards in pharmaceutical services.

Overall, the findings highlight a critical need for more comprehensive and regular training programs in pharmacies to enhance the effectiveness of quality control practices and improve patient safety.

It was set that the majority of respondents (60%) reported being satisfied with their level of awareness regarding new requirements and standards in the field of quality control of pharmaceutical services. This suggests that most pharmacists feel adequately informed about regulatory updates and industry standards, which is crucial for maintaining high-quality pharmaceutical practices (Fig. 2.9).
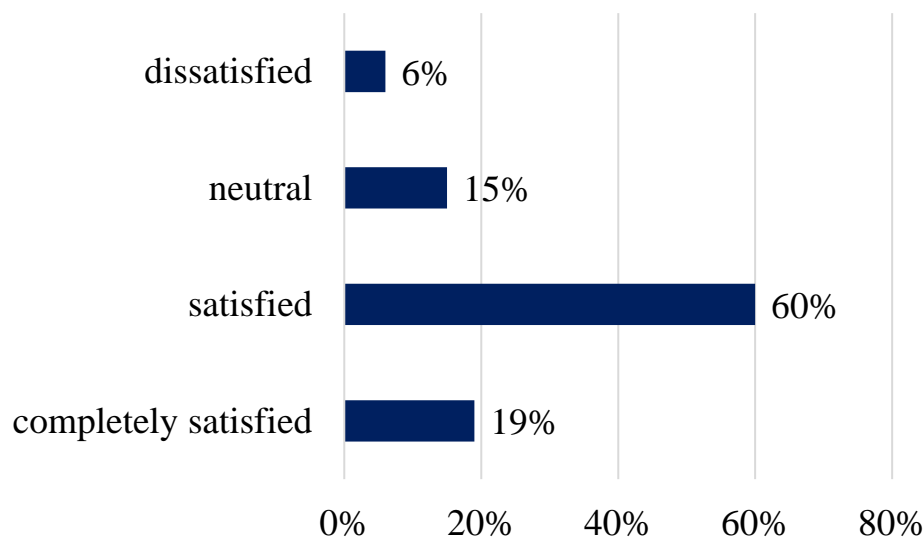
Fig. 2.9. Study of pharmacists' satisfaction with their awareness of quality control standards

Additionally, 19% of respondents indicated that they were completely satisfied, reflecting a high level of confidence in their knowledge and understanding of evolving quality control measures. This group likely benefits from continuous education, training, or institutional support that keeps them well-informed.

Meanwhile, 15% of pharmacists remained neutral, implying uncertainty or indifference regarding their level of awareness. This could indicate a need for

additional training or resources to ensure that all professionals feel confident in their knowledge of pharmaceutical quality control.

Only 6% of respondents expressed dissatisfaction with their awareness of new standards, highlighting a small but significant portion of pharmacists who may require more targeted educational efforts or improved access to regulatory updates.

These findings underscore the importance of ongoing professional development programs and accessible information sources to ensure that all pharmacists remain well-informed about the latest quality control requirements.

It was found that the majority of respondents (80%) believe that the quality control system of pharmaceutical services completely contributes to increasing patient satisfaction. This suggests that pharmacists recognize the crucial role of strict quality control measures in ensuring accurate dispensing, reducing medication errors, and enhancing patient trust in pharmaceutical services (Fig. 2.10).
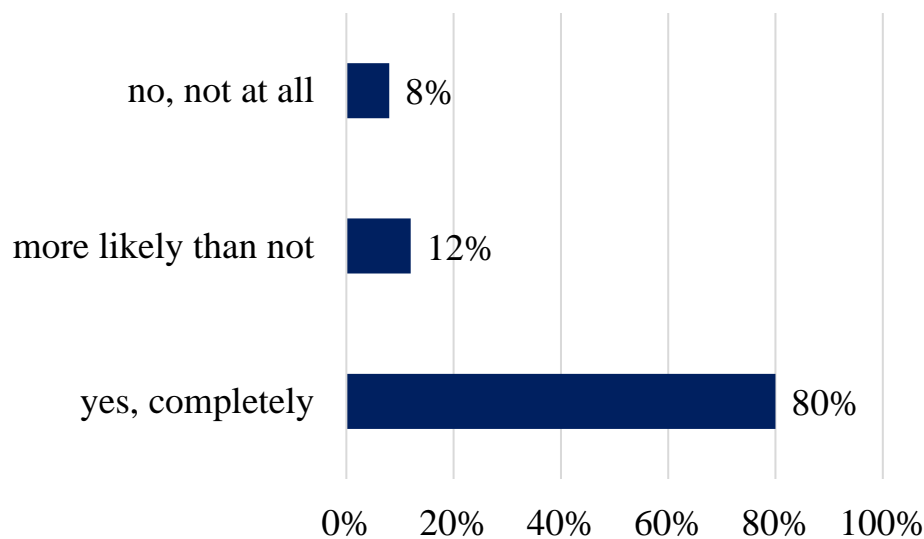
Fig. 2.10. Study of the influence of quality control system of pharmaceutical services completely contributes to increasing patient satisfaction

Additionally, 12% of respondents indicated that quality control is "more likely than not" a contributing factor to patient satisfaction. This group acknowledges the importance of quality assurance but may believe that other factors, such as patient counseling or medication availability, also significantly influence satisfaction levels.

Meanwhile, only 8% of respondents stated that the quality control system does not contribute to patient satisfaction at all. This small percentage may indicate skepticism regarding the effectiveness of existing quality control measures or a belief that patient satisfaction is influenced by aspects beyond pharmaceutical service quality.

Overall, these findings highlight the significant role of pharmaceutical quality control in shaping patient experiences and the necessity of maintaining high standards to ensure optimal healthcare outcomes (Fig. 2.10).

In the next stage of our work, we examined whether pharmacies have a system for collecting and analyzing patient complaints about the quality of pharmaceutical services. The survey results indicate that 73% of respondents reported the presence of such a system in their pharmacy. This suggests that the majority of pharmacies recognize the importance of gathering patient feedback to improve service quality and address potential issues effectively (Fig. 2.11).
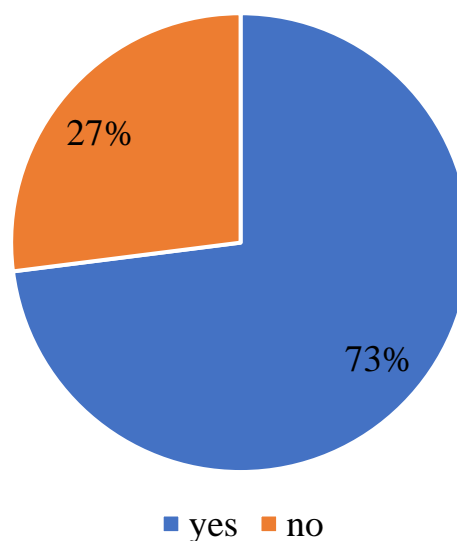
Fig. 2.11. Research of presence of a system for collecting and analyzing patient complaints

On the other hand, 27% of respondents stated that their pharmacy does not have a structured system for managing patient complaints. This absence may indicate a lack of resources, insufficient regulatory requirements, or limited

awareness of the benefits of systematic complaint analysis in ensuring high-quality pharmaceutical services.

Overall, these findings highlight the crucial role of complaint management systems in monitoring service quality and enhancing patient trust in pharmaceutical care (Fig. 2.11).

It was set that the majority of respondents (63%) consider the quality control of medicine manufacturing in pharmacies to be very effective. This indicates a high level of confidence in the processes ensuring the safety and efficacy of pharmaceutical products. Additionally, 15% of respondents rated the quality control as effective, demonstrating that a significant proportion of pharmacists perceive the system positively (Fig. 2.12).

A small percentage (2%) described the quality control as satisfactory, suggesting room for improvement in some cases. Notably, 20% of respondents stated that such services are not provided in their pharmacy, reflecting that not all pharmacies engage in the manufacture of medicines. These findings highlight the varying degrees of quality control implementation in pharmaceutical manufacturing across different pharmacies.
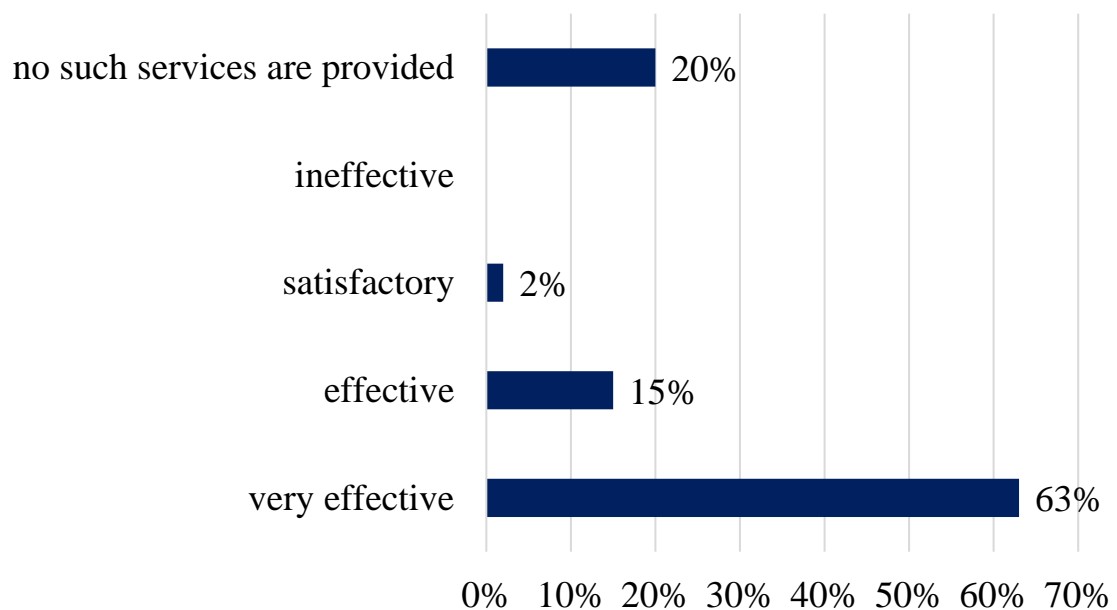
Fig. 2.12. Research on the effectiveness of quality control in the manufacture of medicines in pharmacies

It was set that 40% of respondents believe that the quality control system of pharmaceutical services completely contributes to the rational use of medicines. This indicates a strong confidence in the role of quality control in ensuring the proper and effective use of pharmaceutical products.

Additionally, 29% of respondents stated that quality control is more likely to contribute than not, further supporting the notion that such systems play a significant role in medication management. However, 26% of pharmacists expressed a more skeptical view, indicating that quality control is more likely not to contribute to rational medicine use. A smaller portion of respondents (5%) believe that the system does not contribute at all.

These results highlight the need for continuous improvement and awareness to strengthen the effectiveness of quality control in promoting the rational use of medicines (Fig. 2.13).
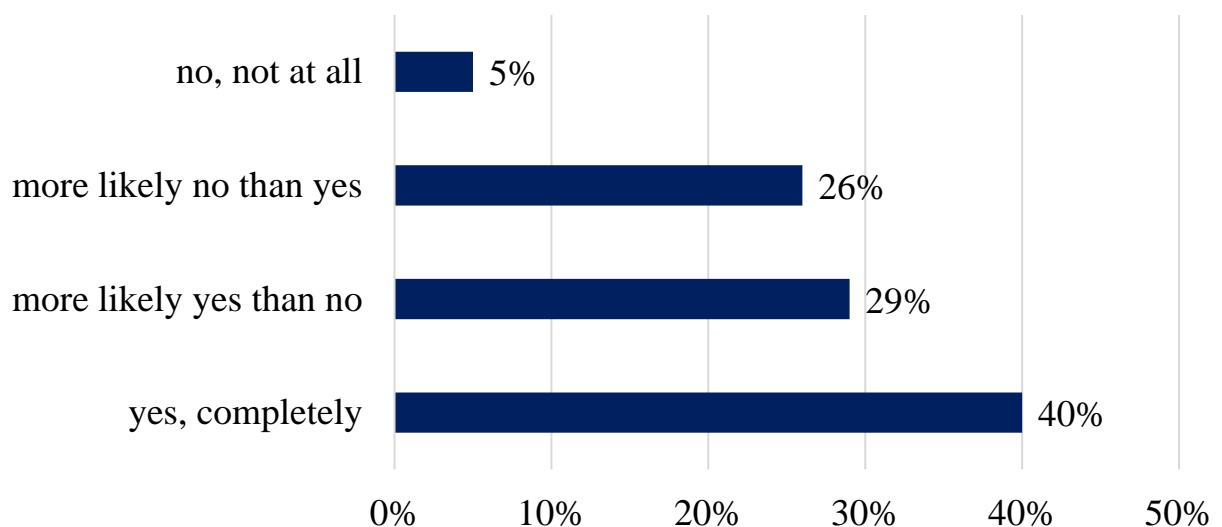
Fig. 2.13. Research of the contribution of quality control in pharmaceutical services to the rational use of medicines

It was set that 93% of respondents confirmed that their pharmacy has a system for controlling the expiration dates of medicines. This high percentage indicates a strong commitment to ensuring medication safety and preventing the dispensing of expired pharmaceutical products.

On the other hand, 7% of respondents stated that their pharmacy does not have such a system. The absence of expiration date control in some pharmacies could pose risks related to medication effectiveness and patient safety.

These findings emphasize the importance of strict monitoring systems in pharmacies to maintain high standards in pharmaceutical services and patient care (Fig. 2.14).

■ yes, there is   ■ no, there is no
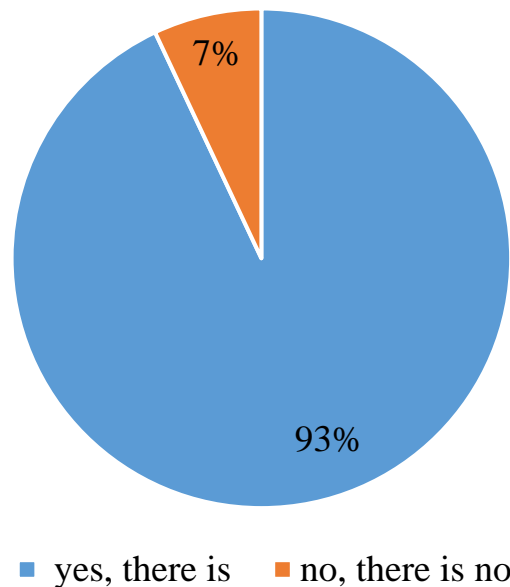
Fig. 2.14. Study of availability of a system for controlling the expiration dates of medicines

According to the survey results, 67% of respondents reported being completely satisfied with the level of interaction between pharmacists and other medical workers on quality control issues. Additionally, 20% of respondents expressed satisfaction, indicating that a significant majority perceive collaboration in this area as effective (Fig. 2.15).

Meanwhile, 10% of respondents remained neutral, possibly indicating areas for improvement in interdisciplinary cooperation. Only 3% of respondents were dissatisfied, suggesting that, while generally positive, some gaps in communication and teamwork between pharmacists and medical professionals may still exist.

These findings highlight the importance of fostering strong collaboration between healthcare professionals to ensure high standards in pharmaceutical service quality control.
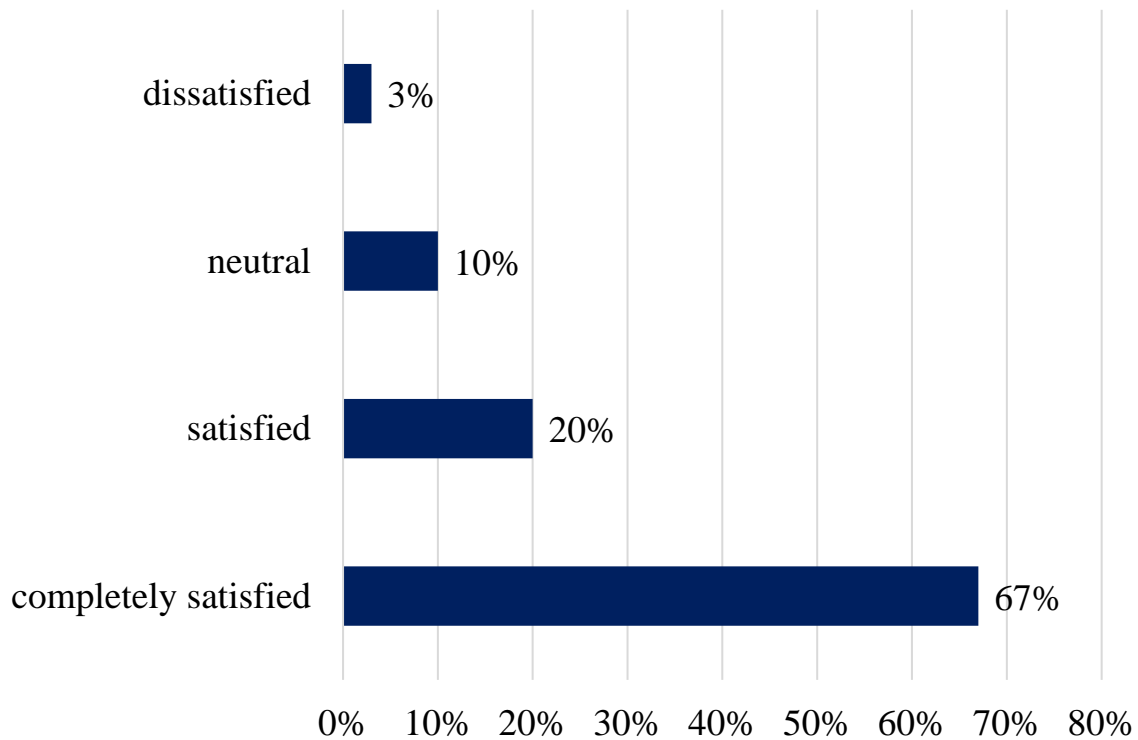
Fig. 2.15. Study of satisfaction with the level of interaction between pharmacists and other medical workers on quality control of pharmaceutical services

At the next stage of our work, it was determined that pharmacists overwhelmingly recognize the importance of the pharmaceutical quality control system in enhancing patient safety. According to the survey, 90% of respondents believe that the system contributes completely to improving patient safety (Fig. 2.16).

Additionally, 5% of participants indicated that it is more likely to contribute than not, while 3% expressed doubt, stating that it is more likely not to contribute than to have a positive effect. A small fraction, 2%, believed that the system does not contribute at all to patient safety.

These findings emphasize the critical role of pharmaceutical quality control in ensuring patient well-being and minimizing risks associated with medication use.
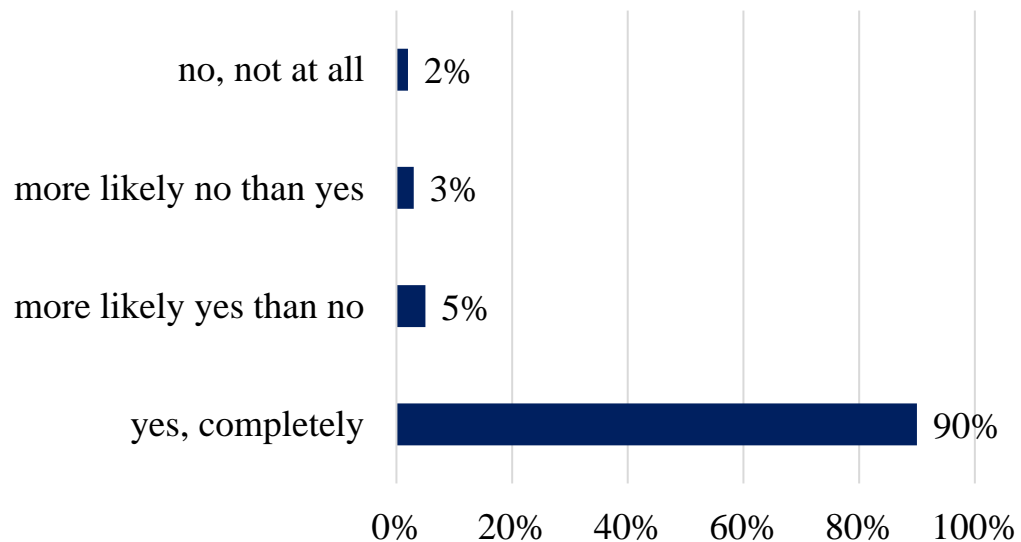
Fig. 2.16. Study of the impact of pharmaceutical quality control on patient safety

It was set to determine whether pharmacies have a system for assessing the quality of pharmaceutical services from the perspective of patients, such as patient surveys. According to the survey results, 70% of respondents confirmed that their pharmacy implements such a system (Fig. 2.17).
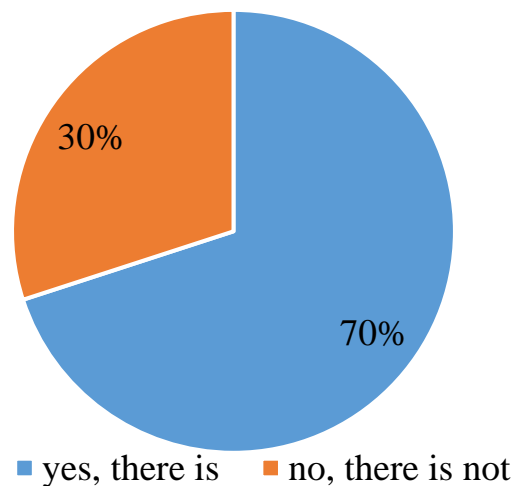
Fig. 2.17. Study of the availability of a system for assessing pharmaceutical service quality from the patient's perspective

However, 30% of participants indicated that their pharmacy does not have any mechanism for evaluating pharmaceutical service quality based on patient feedback.

These findings highlight the significance of incorporating patient perspectives in quality assessment to enhance service standards and patient satisfaction.

It was set to evaluate how effectively the quality control of drug storage is carried out in pharmacies. The survey results indicate that 81% of respondents consider the process to be very effective, while 11% find it effective (Fig. 2.18).

Additionally, 8% of participants rated it as satisfactory, and no respondents deemed the quality control of drug storage to be ineffective.

These findings suggest that the majority of pharmacies implement reliable measures to ensure proper drug storage, maintaining pharmaceutical safety and quality.
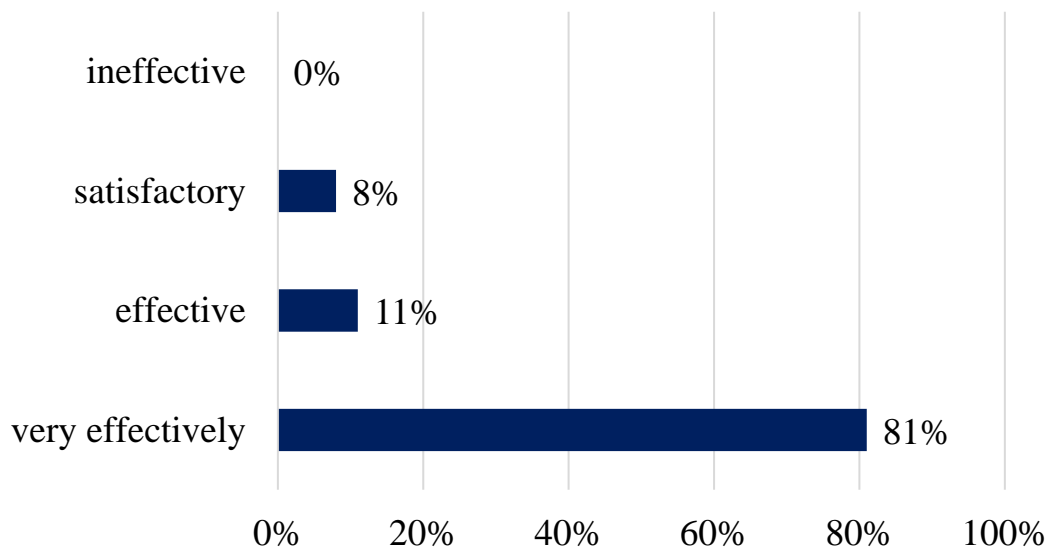
Fig. 2.18. Study of effectiveness of drug storage quality control

It was set to assess the level of satisfaction with blood pressure measurement services in pharmacies. According to the survey results, 42% of respondents reported being very satisfied, while 20% were satisfied.

Meanwhile, 5% of participants remained neutral, and 10% expressed dissatisfaction with the service. Additionally, 23% of respondents indicated that they did not use this service (Fig. 2.19).

These findings highlight that the majority of users have a positive perception of blood pressure measurement services, though there is still room for improvement to enhance overall satisfaction.
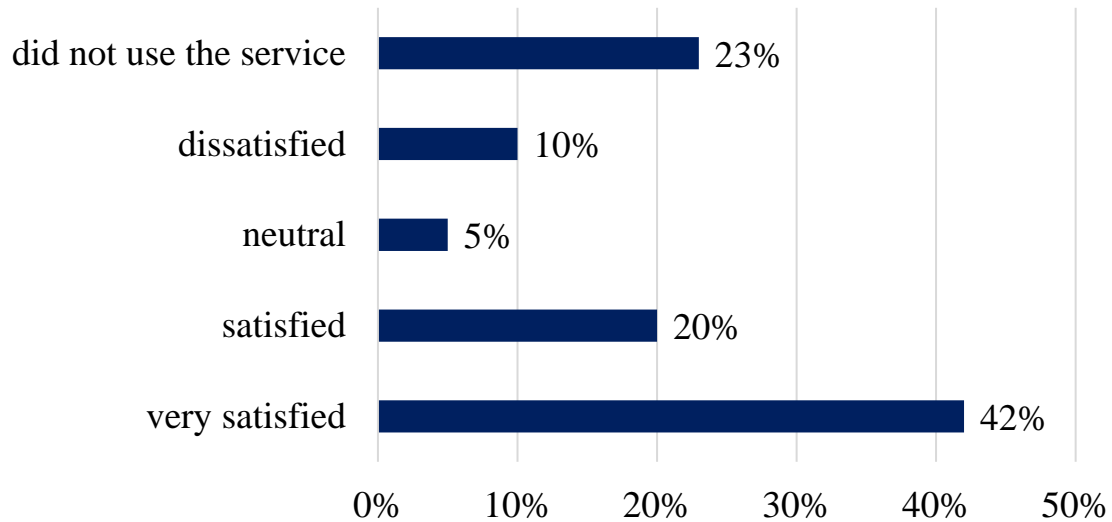
Fig. 2.19. Study of satisfaction with blood pressure measurement services in pharmacies

It was set how respondents rate the quality of first aid services in pharmacies, particularly for minor injuries such as cuts and burns. The survey results indicate that 51% of participants rated the service as very high, while 9% considered it high (Fig. 2.20).
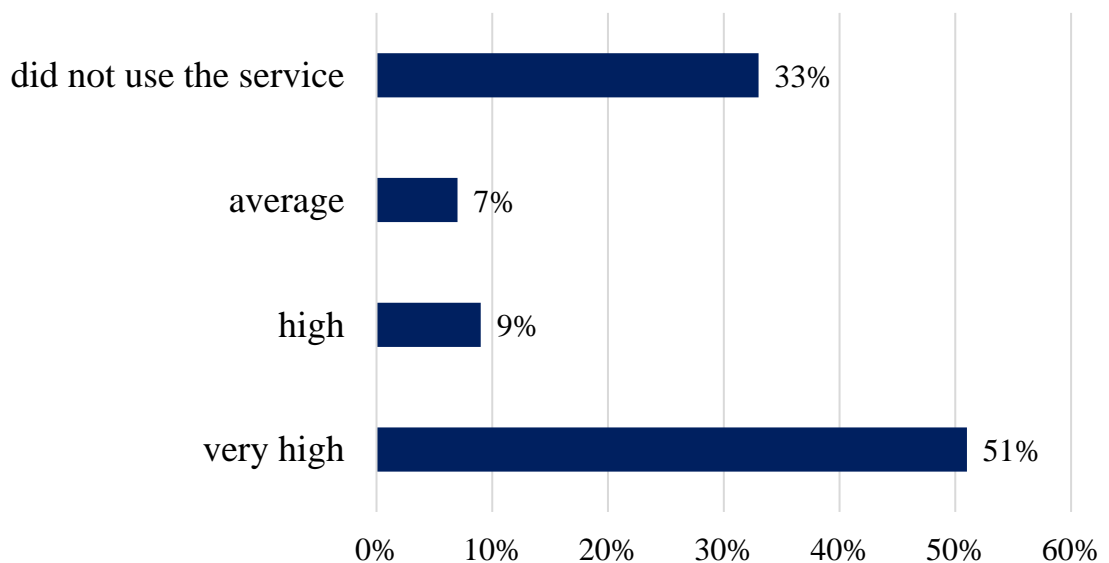
Fig. 2.20. Study of quality assessment of first aid services in pharmacies

Additionally, 7% of respondents assessed the quality as average. However, 33% of participants reported that they did not use the first aid service in their pharmacy.

These findings suggest that while a majority of users have a positive perception of first aid services, a significant proportion has not utilized them, possibly indicating a lack of awareness or availability of such services.

It was set determining consumer satisfaction with the quality of consulting services in pharmacies regarding the selection of medical products such as tonometers and glucometers for opinion of pharmacists. According to the survey results, 50% of respondents were very satisfied, while 20% expressed satisfaction.

Meanwhile, 15% of participants remained neutral in their assessment, and only 1% reported dissatisfaction. Additionally, 14% of respondents indicated that they had not used this service.

These findings suggest that the majority of consumers positively evaluate consulting services for medical product selection, with a relatively small percentage of dissatisfaction and non-usage.
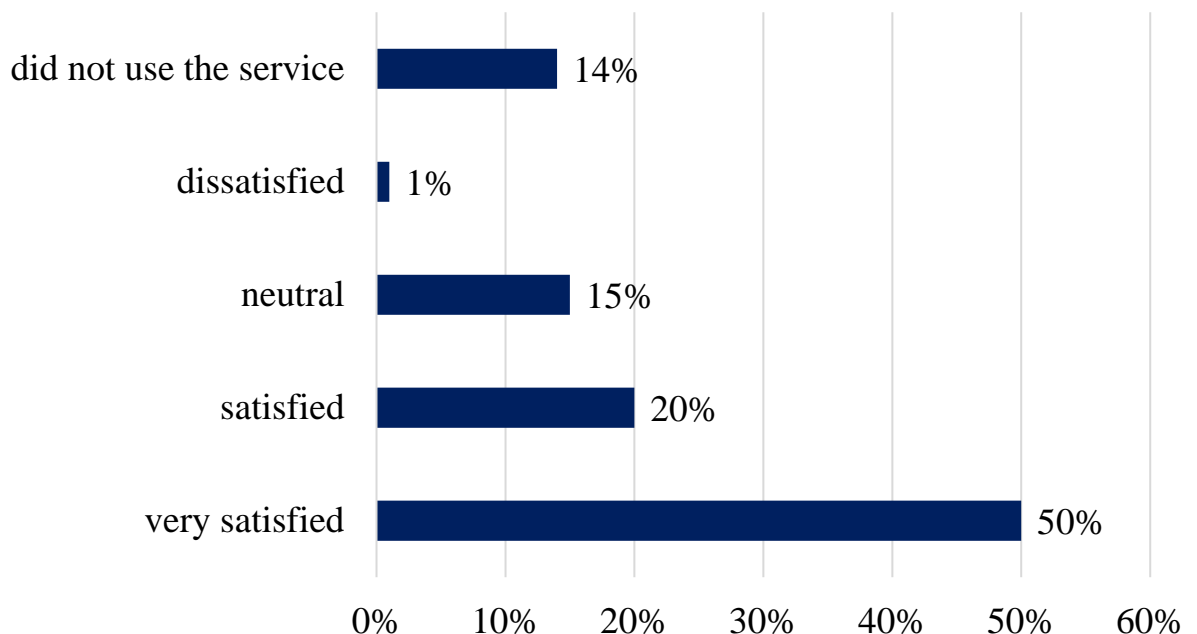
Fig. 2.21. Determining consumer satisfaction with the quality of consulting services in pharmacies regarding the selection of medical products such as tonometers and glucometers for opinion of pharmacists

2.2. Identification of challenges and inefficiencies in current quality control practices

Quality control in pharmaceutical services is a critical aspect of ensuring patient safety, medication efficacy, and overall healthcare quality. There are several challenges and inefficiencies in current quality control practices based on common issues observed in the field. These problems can affect pharmacists, patients, and the healthcare system as a whole, and addressing them is essential for improving pharmaceutical care [13].

One major challenge is the inconsistency in training and awareness among pharmacists. While many professionals are confident in their knowledge of quality control standards, some lack access to regular updates or sufficient training programs. This creates gaps in understanding new regulations or technologies, which can lead to errors in dispensing medicines or managing inventory. For example, without proper education on updated standards, a pharmacist might overlook critical quality checks, putting patient safety at risk. This issue is compounded by the fact that not all pharmacies have the resources to provide ongoing professional development, especially smaller or rural ones [17].

Another inefficiency lies in the lack of standardized systems across pharmacies. Some have advanced tools for tracking expiration dates, collecting patient feedback, or ensuring proper drug storage, while others rely on outdated or manual methods. This variation can lead to uneven quality of service. For instance, a pharmacy without a digital system for monitoring expiration dates might accidentally dispense expired medications, while one with automated alerts avoids such mistakes. This inconsistency highlights a need for uniform protocols to ensure all pharmacies meet the same high standards [20].

Resource limitations also pose a significant challenge. Many pharmacies, particularly those with limited funding, struggle to invest in modern equipment or hire enough staff to perform thorough quality checks. This can result in overworked pharmacists who may not have time to double-check prescriptions or analyze patient complaints effectively. In such cases, the quality control process becomes rushed or

incomplete, increasing the likelihood of errors. For example, a busy pharmacist might miss a subtle issue with drug storage conditions, like temperature fluctuations, which could reduce a medicine's effectiveness [5].

Additionally, there's often a disconnect in communication and collaboration between pharmacists and other healthcare professionals. Quality control doesn't just depend on what happens in the pharmacy — it's influenced by interactions with doctors, nurses, and regulators. If these groups don't share information efficiently, misunderstandings can occur. For instance, a doctor might prescribe a medication without clarifying special storage needs, and the pharmacist, unaware, might store it incorrectly. This lack of teamwork can weaken the overall quality control chain [19].

Patient feedback is another area where inefficiencies are evident. While some pharmacies have systems to collect and analyze complaints, others don't, missing out on valuable insights. Without this input, it's hard to identify recurring problems — like unclear instructions or long wait times — that affect service quality. Even in pharmacies with feedback systems, the data might not be acted upon quickly or effectively, limiting improvements. This gap shows how quality control isn't just about technical processes but also about listening to the people being served [20].

Technology adoption is a double-edged sword in this context. On one hand, tools like automated dispensing machines or software for tracking quality metrics can improve accuracy and efficiency. On the other hand, not all pharmacies can afford these solutions, and even when they can, staff might not be trained to use them properly. This creates a divide where technologically advanced pharmacies perform better, while others lag behind, struggling with manual processes that are slower and more error-prone [6].

Finally, skepticism or resistance to change among some pharmacists can hinder progress. If a portion of professionals doubts the impact of quality control measures — like their effect on rational medicine use or patient satisfaction — they might not fully engage with new practices. This attitude can slow down efforts to refine systems or adopt best practices, leaving inefficiencies unaddressed [11].

In conclusion, the challenges and inefficiencies in current quality control practices stem from inconsistent training, lack of standardization, resource constraints, poor collaboration, underutilized patient feedback, uneven technology use, and resistance to change were identified. These issues require a mix of better education, unified guidelines, increased funding, and a culture of openness to improvement. By tackling these obstacles, the pharmaceutical industry can strengthen its quality control systems, ultimately benefiting both healthcare providers and patients [15].

Conclusions to chapter II

1.   For assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies a survey of 46 pharmacists was conducted.

2.   It was found that 82% of the surveyed respondents were completely familiar with the internal quality standards for pharmaceutical services.

3.   The respondents were asked to assess how well they believe quality control mechanisms are implemented in their pharmacies. The results showed that 71% of participants rated the quality control process as very effective, 13% as effective, 9% as satisfactory, and 7% as ineffective.

4.   The survey results indicate that respondents confirmed that regular checks of compliance with quality standards for pharmaceutical services are carried out in their pharmacy. Among them, 86% reported that such checks occur regularly on a monthly or quarterly basis, while 10% stated that they take place once a year. However, 4% indicated that these checks are not conducted at all.

5.   The survey revealed that a significant majority, 70%, of respondents were completely satisfied with the quality of internal audits of quality control of pharmaceutical services. Additionally, 23% expressed satisfaction, bringing the total percentage of satisfied customers to 93%.

6.   It was found that a majority of respondents (60%) expressed full confidence in the system quality control in pharmaceutical services effectively helps prevent errors in dispensing medicines. It was found that 67% of respondents use

modern information technologies to control the quality of pharmaceutical services, such as electronic prescription accounting and expiration date tracking systems. It was determined that 51% of respondents considered the quality control of patient counseling on the use of medicines to be very effective.

7.   It was set that 54% respondents answered that their pharmacy does not provide any education or training for pharmacists on quality control of pharmaceutical services. It was established that the majority of respondents (60%) reported satisfaction with their awareness of new requirements and standards in pharmaceutical quality control, indicating that most pharmacists feel well-informed about regulatory updates. It was found that the majority of respondents (80%) believe the quality control system fully enhances patient satisfaction, highlighting its role in improving accuracy and trust in pharmaceutical services.

8.   The survey showed that 73% of respondents confirmed their pharmacy has a system for collecting and analyzing patient complaints, reflecting a widespread focus on feedback to improve service quality. However, 27% reported no such system, indicating potential gaps in resources or awareness. It was established that the majority of respondents (63%) view quality control of medicine manufacturing in pharmacies as very effective, showing strong confidence in these processes.

9.   It was found that 40% of respondents believe quality control fully supports the rational use of medicines, reflecting its perceived importance in medication management. The survey revealed that 93% of respondents confirmed their pharmacy has a system for monitoring medicine expiration dates, demonstrating a strong commitment to safety.

10.   According to the survey, 67% of respondents were completely satisfied with the collaboration between pharmacists and other medical workers on quality control issues, indicating effective teamwork. It was determined that 90% of respondents believe the quality control system fully enhances patient safety, affirming its critical role in reducing medication risks.

11.   The survey showed that 70% of respondents confirmed their pharmacy uses patient surveys to assess service quality, emphasizing the value of patient

feedback. It was found that 81% of respondents consider the quality control of drug storage very effective, reflecting robust storage practices in most pharmacies.

12.   The survey indicated that 42% of respondents were very satisfied with blood pressure measurement services in pharmacies, showing a generally positive perception. It was established that 51% of respondents rated the quality of first aid services for minor injuries as very high, reflecting strong approval among users. The survey showed that 50% of respondents were very satisfied with consulting services for selecting medical products like tonometers and glucometers, indicating high consumer confidence in pharmacist guidance.

13.   The challenges and inefficiencies in current quality control practices stem from inconsistent training, lack of standardization, resource constraints, poor collaboration, underutilized patient feedback, uneven technology use, and resistance to change were identified.

CHAPTER III
DEVELOPMENT OF RECOMMENDATIONS FOR IMPROVING QUALITY CONTROL MECHANISMS IN PHARMACIES

3.1. Integration of new technologies and digital solutions for quality control in pharmacies

It's important to study how integrating new technologies and digital solutions into quality control in pharmacies can transform the way services are delivered. These advancements have the potential to improve accuracy, efficiency, and patient safety, while also addressing some of the inefficiencies in traditional methods. Exploring this topic reveals both the exciting opportunities and the challenges that come with adopting these tools in real-world pharmacy settings [18].

One of the most promising technologies is automated dispensing systems. These machines can accurately measure and package medications, reducing human error in dispensing — a critical aspect of quality control. For example, a pharmacist might accidentally misread a prescription dosage, but an automated system can cross-check it against a digital record and flag discrepancies. This not only prevents mistakes but also saves time, allowing pharmacists to focus on patient counseling rather than repetitive tasks. So, this kind of technology could be a game-changer, especially in busy pharmacies where workload pressures often lead to oversights [6].

Digital tracking systems for inventory management are another key solution. Pharmacies deal with hundreds of medications, each with specific storage requirements and expiration dates. Software that monitors stock levels, expiration dates, and storage conditions (like temperature and humidity) can send real-time alerts when something's off. For instance, if a vaccine is stored outside its required temperature range, the system could notify staff immediately, preventing the use of compromised drugs. So, this level of precision is essential for maintaining high-quality pharmaceutical services and building patient trust [17].

Electronic health records (EHRs) and integrated databases also play a big role in quality control. By connecting pharmacies with doctors and hospitals through a

shared digital platform, these systems ensure that prescription details, patient allergies, and medication histories are instantly accessible. This reduces the risk of dispensing errors — like giving a patient a drug they're allergic to — because pharmacists can verify information in seconds. I believe this kind of connectivity could strengthen collaboration across healthcare teams, making quality control a shared responsibility rather than just the pharmacist's burden [20].

Patient-facing technologies, like mobile apps or online portals, are another exciting development. These tools allow patients to submit feedback, report side effects, or ask questions about their medications directly to the pharmacy. For quality control, this means pharmacies can quickly identify issues, a batch of pills causing unexpected reactions and investigate them. It's a proactive way to catch problems early, it fascinating how this empowers patients to contribute to the quality process. Plus, it could improve satisfaction by making communication easier and more transparent [17].

Artificial intelligence (AI) is also starting to make waves in pharmaceutical quality control. AI can analyze large datasets like patient complaints or dispensing records to spot patterns that humans might miss. For example, if multiple patients report issues with a specific medication, AI could flag it for review before it becomes a widespread problem. This predictive ability could take quality control to the next level, moving from reactive fixes to preventing issues altogether. It's exciting to imagine how AI might evolve to support pharmacists in decision-making [9].

However, integrating these technologies isn't without challenges. One big hurdle is cost. Small or independent pharmacies might not have the budget to install automated systems or subscribe to advanced software, creating a gap between well-funded chains and smaller operations. Training is another issue pharmacists and staff need to learn how to use these tools effectively, and not everyone adapts quickly to change. Resistance to new methods can slow progress, especially if staff feel overwhelmed or skeptical about the benefits [5].

Data security is a concern too. Digital solutions rely on storing sensitive patient information, and a cyberattack or glitch could compromise privacy or disrupt

operations. For instance, if a pharmacy's EHR system goes down, it might delay access to critical patient data, affecting quality control. Pharmacies need strong safeguards like encryption and backups to make these technologies reliable and trustworthy [7].

Lastly, there's the challenge of ensuring these tools are user-friendly and tailored to pharmacy needs. A poorly designed system could frustrate staff or confuse patients, undermining its purpose. Developers should work closely with pharmacists to create solutions that fit real workflows, not just theoretical ideals [9].

In conclusion, integrating new technologies and digital solutions into pharmacy quality control offers incredible potential to enhance accuracy, streamline processes, and improve patient outcomes. Tools like automated dispensing, digital tracking, EHRs, patient apps, and AI can modernize how pharmacies operate. However, overcoming barriers like cost, training, security, and usability is crucial for success [1].

3.2. Development practices for implementing quality control improvements in pharmacy services

Quality control is vital for ensuring medication safety, reducing errors, and enhancing patient trust, but achieving consistent improvements requires a structured approach. These practices involve planning, training, standardization, technology integration, and continuous evaluation each playing a key role in strengthening pharmacy operations [9].

One essential practice is establishing clear goals and protocols. Before any improvement can take place, pharmacies need to identify specific areas of concern, such as dispensing errors, inventory mismanagement, or inadequate patient feedback systems. For example, a pharmacy might set a goal to reduce medication errors by 20% within a year. To achieve this, they could develop standardized procedures like double-checking prescriptions or using a checklist for storage conditions. This step is the foundation of quality control improvements, providing a roadmap for staff to follow and measure progress against [2].

Training and education are equally critical. Pharmacists and support staff need regular, hands-on learning opportunities to stay updated on best practices, new regulations, and emerging tools. Workshops, online courses, or even on-site simulations can teach skills like proper drug handling or how to use digital inventory systems. For instance, a training session on recognizing counterfeit medications could prevent unsafe drugs from reaching patients [13].

Integrating technology is another key development practice. Tools like automated dispensing machines, barcode scanners, and software for tracking expiration dates can significantly enhance accuracy and efficiency. Developing a plan to adopt these technologies starts with assessing a pharmacy's needs and budget, followed by a phased rollout. For example, a pharmacy could begin by installing barcode scanners to verify prescriptions, then later add a full inventory management system [6].

Collaboration across the healthcare system is also vital. Pharmacies don't operate in isolation, so quality control improvements should involve input from doctors, nurses, and regulators. Developing joint protocols like a shared digital platform for prescription verification can ensure everyone is aligned. Imagine a scenario where a doctor flags a patient's allergy in the system, and the pharmacist receives an instant alert before dispensing. Teamwork strengthens the entire quality chain, making errors less likely and patient care more seamless [8].

Another practice is creating a robust feedback loop. Pharmacies should develop systems to collect and analyze data from staff, patients, and quality audits. This could mean setting up patient surveys, encouraging staff to report near-misses, or conducting monthly reviews of dispensing records. For instance, if multiple patients complain about unclear instructions, the pharmacy could revise its labeling process [17].

Standardization across pharmacies is a development practice that can't be overlooked. While individual pharmacies might have unique needs, a set of universal guidelines ensures consistent quality no matter the location. This could involve adopting national or international standards, like those from the World Health

Organization, and tailoring them to local contexts. For example, a standard might require all pharmacies to check storage temperatures twice daily. In my view, this levels the playing field, ensuring that even small pharmacies can deliver high-quality services [13].

Pilot testing is a practical step in implementing improvements. Before rolling out a new quality control measure like a digital complaint system pharmacy can test it in one location or department. This allows them to identify glitches, gather staff feedback, and adjust the approach. Say a pharmacy tests a new expiration date tracker and finds the alerts are too frequent; they could tweak the settings before going live everywhere [4].

Finally, continuous monitoring and evaluation keep improvements sustainable. Pharmacies should develop metrics, like error rates, patient satisfaction scores, or compliance levels, to track over time. Regular audits or reviews can reveal whether a new practice is working or needs adjustment. For instance, if error rates drop after introducing barcode scanners but then creep up, it might signal a need for retraining [4].

Conclusions to chapter III

1.   Integration of new technologies and digital solutions for quality control in pharmacies was studied.

2.   Development practices for implementing quality control improvements in pharmacy services was investigated.

GENERAL CONCLUSIONS

1. The role and impact of quality control mechanisms in pharmacies are characterized. Regulatory frameworks and standards for pharmaceutical services quality are revealed.

2. For assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies a survey of 46 pharmacists was conducted. The role and impact of quality control mechanisms in pharmacies are characterized. It was found that 82% of the surveyed respondents were completely familiar with the internal quality standards for pharmaceutical services.

3. The respondents were asked to assess how well they believe quality control mechanisms are implemented in their pharmacies. The results showed that 71% of participants rated the quality control process as very effective, 13% as effective, 9% as satisfactory, and 7% as ineffective. The survey results indicate that respondents confirmed that regular checks of compliance with quality standards for pharmaceutical services are carried out in their pharmacy. Among them, 86% reported that such checks occur regularly on a monthly or quarterly basis. The survey revealed that a significant majority, 70%, of respondents were completely satisfied with the quality of internal audits of quality control of pharmaceutical services.

4. It was found that a majority of respondents (60%) expressed full confidence in the system quality control in pharmaceutical services effectively helps prevent errors in dispensing medicines. It was found that 67% of respondents use modern information technologies to control the quality of pharmaceutical services, such as electronic prescription accounting and expiration date tracking systems. It was determined that 51% of respondents considered the quality control of patient counseling on the use of medicines to be very effective.

5. It was set that 54% respondents answered that their pharmacy does not provide any education or training for pharmacists on quality control of pharmaceutical services. It was established that the majority of respondents (60%) reported satisfaction with their awareness of new requirements and standards in

pharmaceutical quality control, indicating that most pharmacists feel well-informed about regulatory updates. It was found that the majority of respondents (80%) believe the quality control system fully enhances patient satisfaction, highlighting its role in improving accuracy and trust in pharmaceutical services.

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8.   The survey indicated that 42% of respondents were very satisfied with blood pressure measurement services in pharmacies, showing a generally positive perception. It was established that 51% of respondents rated the quality of first aid services for minor injuries as very high, reflecting strong approval among users. The survey showed that 50% of respondents were very satisfied with consulting services for selecting medical products. Integration of new technologies and digital solutions for quality control in pharmacies was studied. Development practices for implementing quality control improvements in pharmacy services was investigated.

REFERENCES

1.	Баєва О. І. Якість формування та використання людського капіталу. *Актуальні проблеми якості, менеджменту і економіки у фармації і охороні здоров'я* : матеріали І міжнар. наук.-практ. internet-конф. з міжнар. участю, м. Харків, 19 трав. 2023 р. Харків : НФаУ, 2023. С. 115-117.

2.	Велика Р., Ковальова В. І. Аналіз умов і факторів, які впливають на якість управлінських рішень в системі адміністративного менеджменту. *Професійний менеджмент в сучасних умовах розвитку ринку* : матеріали Х наук.-практ. конф. з міжнар. участю, м. Харків, 1 листоп. 2021 р. Харків : Вид-во Іванченка І. С., 2021. С. 19-22.

3.	Гладкова О. В., Свинаренко Т. І. Оптимізація структури фінансових ресурсів суб'єктів підприємництва. *Інтернаука*. 2019. № 4. С. 22-30.

4.	Губін Ю. І., Ромелашвілі О. С., Зборовська Розробка проекту автоматизованих елементів системи управління якістю. *Менеджмент та маркетинг у складі сучасної економіки, науки, освіти, практики* : матеріали VIII міжнар. наук.-практ. дистанц. конф., м. Харків, 19 берез. 2020 р. Харків : НФаУ, 2020. С. 307-318.

5.	Євтушенко О. М., Гриненко А. М. Світовий досвід застосування цифрових технологій у процесі надання фармацевтичної допомоги (фрагмент дослідження). *Соціальна фармація в охороні здоров'я*. 2022. Т. 8, № 4. С. 14-22.

6.	Коваленко С. М. Пакування як невід'ємна складова забезпечення якості лікарських засобів. *Косметологія та аромологія: етапи становлення і майбутнє* : матеріали Міжнар. наук.-практ. конф., приуроченої до 20-річчя спец. «Технології парфюмерно-косметичних засобів», м. Харків, 22-23 лют. 2018 р. Харків : НФаУ, 2018. С. 62.

7.	Котвіцька А. А. Оцінка якості і результативності роботи регуляторних органів у сфері обігу лікарських засобів. *Соціальна фармація в охороні здоров'я*. 2023. Т. 9, № 4. С. 22-30.

8. Котлярова В. Г., Котлярова В. Г., Бондаренко О. Ю. Ідентифікація та облік витрат на якість на промисловому підприємстві. *Професійний менеджмент у сучасних умовах розвитку ринку* : матеріали VIII наук.-практ. конф. з міжнар. участю, м. Харків, 1 листоп. 2019 р. Харків : НФаУ, 2019. С. 59-60.

9. Лебединець В. О. Методика оцінювання результативності процесів систем управління якістю виробничих фармацевтичних підприємств. *Управління, економіка та забезпечення якості в фармації.* 2017. № 2. С. 11-18.

10. Літвінова О. В., Посилкіна О. В. Аналіз стратегій інноваційного розвитку в фармації. *ScienceRise: Pharmaceutical Science.* 2017. № 6. С. 17-20.

11. Машкіна О. В., Ковальова В. І. Вплив інформаційних систем та технологій на якість управління, виробництва та сервісу у фармації. *Youth Pharmacy Science* : матеріали IV Всеукр. наук.-практ. конф. з міжнар. участю, м. Харків, 6-7 груд. 2023 р. Харків : НФаУ, 2023. С. 552-554.

12. Музика Т. Ф. Дослідження регуляторних норм обігу наркотичних і психотропних лікарських засобів у закладах охорони здоров'я. *Соціальна фармація в охороні здоров'я.* 2017. Т. 3, № 3. С. 42-48.

13. Остапченко Т. О. Питання якості косметичної продукції. *Управління якістю в фармації* : матеріали XIV наук.-практ. конф., м. Харків, 22 трав. 2020 р. Харків : НФаУ, 2020. С. 111-112.

14. Панфілова Г. Л., Богдан Н. С., Коровенкова О. М. Систематизація світового досвіду надання фармацевтичної послуги як сучасної складової професійної діяльності фармацевтичних працівників (клінічна фармацевтична послуга). *Сучасна фармація : історія, реалії та перспективи розвитку* : матеріали наук.-практ. конф. з міжнар. участю, присвяченої 20-й річниці заснування Дня фармацевтичного працівника України, м. Харків, 19-20 верес. 2019 р. : у 2 т. Харків : НФаУ, 2019. Т. 2. С. 68-69.

15. Панфілова Г. Л., Матущак М. Р. Аналіз світового досвіду надання фармацевтичних послуг хронічних хворим в аптечних закладах. *Сучасна фармація: історія, реалії та перспективи розвитку* : матеріали наук.-практ.

конф. з міжнар. участю, присвяч. 20-й річниці заснування Дня фармацевтичного працівника України, м. Харків, 19-20 верес. 2019 р. : у 2 т. Харків : НФаУ, 2019. Т. 2. С. 66-67.

16. Півень О. П., Ткаченко І. В., Нессонова М. М. Обґрунтування переліку показників для моделювання інтегральної оцінки якості обслуговування клієнтів в аптеці. *Управління, економіка та забезпечення якості в фармації.* 2018. № 2. С. 39-48.

17. Прокопенко Т. С., Вахніна Н. Г., Кудрявцева Т. О. Якість фармацевтичної освіти як складова якості надання фармацевтичної послуги. *Управління якістю в фармації* : матеріали XIII наук.-практ. конф., м. Харків, 17 трав. 2019 р. Харків : НФаУ, 2019. С. 134-135.

18. Світлична К. С. Актуальність організації управлінського обліку витрат на якість в умовах фармацевтичного виробництва. *Актуальні проблеми розвитку галузевої економіки та логістики* : матеріали VI наук.-практ. конф. з міжнар. участю, м. Харків, 25-26 жовт. 2018 р. Харків : НФаУ, 2018. С. 137-138.

19. Толочко В. М., Музика Т. Ф. Проблеми впровадження фармацевтичних послуг у діяльність аптечних закладів. *Менеджмент та маркетинг у складі сучасної економіки, науки, освіти, практики* : матеріали VI міжнар. наук.-практ. дистанц. конф., м. Харків, 22-23 берез. 2018 р. Харків : НФаУ, 2018. С. 213-214.

20. Тутук В. В., Назаркіна В. М. Аналіз доступності медичних технологій лікування фенілкетонурії в Україні та світі. *Соціальна фармація в охороні здоров'я.* 2023. Т. 9, № 1. С. 30-38.

21. Хмельницька О. А., Толочко В. М. До питання організаційно-правового забезпечення контролю якості лікарських засобів в Україні. *Вісник фармації.* 2013. № 1. С. 50-52.

22. Шабаєва Ю. В. Якість природної води: джерела забруднення та моніторинг показників. *Екологія. Здоров'я людини. Проблеми та перспективи людства* : матеріали Всеукр. дистанц. екологічної наук.-практ. конф. з міжнар. участю, м. Харків, 22 квіт. 2021 р. Харків : ФК НФаУ, 2021. С. 407-410.

23. Шевченко В. О., Шпичак О. С., Ролік-Аттіа С. М. Оцінка ризиків як важливий фактор у процесі розроблення складу ін'єкційного розчину. *Фармацевтичний журнал*. 2023. Т. 78, № 5. С. 53-61.

24. Bulajeva A. Medication review practices in European countries. *Res. Social. Adm. Pharm.* 2014. Vol. 10(5). P. 731–40.

25. Costa F. Provision of pharmaceutical care by community pharmacists across Europe: is it developing or spreading? *J. Eval Clin. Pract.* 2017. Vol. 78. P. 234-242.

26. Fedotov A. S., Pidpruzhnikov Y. V. Development of measures to increase the competence of internal auditors of pharmaceutical quality systems. *Topical issues of new medicines development* : матеріали XXVII Міжнар. наук.-практ. конф. молодих учених та студентів, м. Харків, 8-10 квіт. 2020 р. Харків : НФаУ, 2020. С. 349-350.

27. Kobylka M. O., Kobylka M. O., Zborovska T. V. The process of securement the quality of medical devices at the stage of their imports in the territory of Ukraine. *Topical issues of new medicines development* : матеріали XXVII Міжнар. наук.-практ. конф. молодих учених та студентів, м. Харків, 8-10 квіт. 2020 р. Харків : НФаУ, 2020. С. 359-361.

28. Milosavljevic A., Aspden T., Harrison J. Community pharmacist-led interventions and their impact on patients' medication adherence and other health outcomes: a systematic review. *Int. J. Pharm. Pract.* 2018. Vol. 26(5). P. 387–397.

29. Nazarkina V. M., Nemchenko O. A. The study of modern approaches to provision of pharmaceutical care in the conditions of good pharmacy practice introduction. *Вісник фармації*. 2015. № 2. С. 45-48.

30. Spyrydonova N. V., Lebedynets V. O. Implementation of quality management systems at the state laboratories for medicines quality control. *Topical issues of new medicines development* : матеріали XXVI Міжнар. наук.-практ. конф. молодих учених та студентів, м. Харків, 10-12 квіт. 2019 р. Харків : НФаУ, 2019. С. 403-404.

APPENDICES

Questionnaire

Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies

Please read each question carefully and choose the most appropriate answer. Your answers will help us improve the quality of pharmaceutical services.

1. Are you familiar with the internal quality standards for pharmaceutical services in force in your pharmacy?

☐   yes, fully

☐   partially

☐   no, not familiar

2. How effective, in your opinion, is the quality control of prescriptions and dispensing of medicines carried out?

☐   very effective

☐   effective

☐   satisfactory

☐   ineffective

3. Are regular checks of compliance with quality standards for pharmaceutical services carried out in your pharmacy?

☐   yes, regularly (monthly/quarterly)

☐   sometimes (once a year)

☐   no, not conducted

4. How satisfied are you with the quality of internal audits of quality control of pharmaceutical services?

☐   completely satisfied

☐   satisfied

☐   neutral

☐   dissatisfied

☐   **5. Do you think that the quality control system of pharmaceutical services helps prevent errors in dispensing medicines?**

☐   yes, completely

☐   more likely than not

☐   more likely than not

☐   no, not at all

6. Does your pharmacy use modern information technologies to control the quality of pharmaceutical services (for example, electronic prescription accounting, expiration date tracking systems)?

☐   yes, completely

☐   partially

☐   no, not used

7. How effectively, in your opinion, is the quality control of patient counseling on the use of medicines carried out?

☐ very effective
☐ effective
☐ satisfactory
☐ ineffective

8. Does your pharmacy provide education and training for pharmacists on quality control of pharmaceutical services?

☐ yes, regularly
☐ sometimes
☐ no, not at all

9. How satisfied are you with your level of awareness of new requirements and standards in the field of quality control of pharmaceutical services?

☐ completely satisfied
☐ satisfied
☐ neutral
☐ dissatisfied

10. Do you think that the quality control system of pharmaceutical services contributes to increasing patient satisfaction?

☐ yes, completely
☐ more likely than not
☐ more likely than not
☐ no, not at all

11. Does your pharmacy have a system for collecting and analyzing patient complaints about the quality of pharmaceutical services?

☐ yes
☐ no

12. How effectively, in your opinion, is the quality control of the manufacture of medicines carried out in the pharmacy (if such services are provided)?

☐ very effective
☐ effective
☐ satisfactory
☐ ineffective
☐ no such services are provided

13. Do you think that the quality control system of pharmaceutical services contributes to the rational use of medicines?

☐ yes, completely
☐ more likely yes than no
☐ more likely no than yes

14. Does your pharmacy have a system for controlling the expiration dates of medicines?

☐ yes, there is
☐ no, there is no

15. How satisfied are you with the level of interaction between pharmacists and other medical workers on issues of quality control of pharmaceutical services?

☐ completely satisfied
☐ satisfied
☐ neutral
☐ dissatisfied

16. Do you think that the quality control system of pharmaceutical services contributes to increasing the level of patient safety?

☐ yes, completely
☐ more likely yes than no
☐ more likely no than yes

17. Does your pharmacy have a system for assessing the quality of pharmaceutical services from the perspective of patients (for example, patient surveys)?

☐ yes, there is
☐ no, there is not

18. How effectively, in your opinion, is the quality control of drug storage carried out?

☐ very effectively
☐ effective
☐ satisfactory
☐ ineffective

19. Do you think that the existing quality control system for pharmaceutical services needs improvement?

☐ yes, definitely
☐ more likely yes than no
☐ more likely no than yes
☐ no, does not need

21. How satisfied are you with the quality of blood pressure measurement services in your pharmacy?

☐ very satisfied ☐ satisfied ☐ neutral ☐ dissatisfied ☐ did not use the service

22. How do you rate the quality of the first aid service in your pharmacy (e.g., for cuts, burns)?

☐ very high
☐ high
☐ average
☐ low
☐ did not use the service

23. How satisfied are you with the quality of the service for consulting on the choice of medical products (e.g., tonometers, glucometers)?

☐ very satisfied
☐ satisfied
☐ neutral ☐ dissatisfied ☐ did not use the service

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

АКТУАЛЬНІ ПИТАННЯ СТВОРЕННЯ НОВИХ ЛІКАРСЬКИХ ЗАСОБІВ

МАТЕРІАЛИ
XXXI МІЖНАРОДНОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ МОЛОДИХ ВЧЕНИХ ТА СТУДЕНТІВ

23–25 квітня 2025 року
м. Харків

Харків
НФаУ
2025

УДК 615.1

Редакційна колегія: проф. Котвіцька А. А., проф. Владимирова І. М.
Укладачі: Сурікова І. О., Боднар Л. А., Комісаренко М. А., Комісарова Є. Є.

Актуальні питання створення нових лікарських засобів: матеріали XXXI міжнародної науково-практичної конференції молодих вчених та студентів (23-25 квітня 2025 р., м. Харків). – Харків: НФаУ, 2024. – 515 с.

Збірка містить матеріали міжнародної науково-практичної конференції молодих вчених та студентів «Актуальні питання створення нових лікарських засобів, які представлені за пріоритетними напрямами науково-дослідної роботи Національного фармацевтичного університету. Розглянуто теоретичні та практичні аспекти синтезу біологічно активних сполук і створення на їх основі лікарських субстанцій; стандартизації ліків, фармацевтичного та хіміко-технологічного аналізу; вивчення рослинної сировини та створення фітопрепаратів; сучасної технології ліків та екстемпоральної рецептури; біотехнології у фармації; досягнень сучасної фармацевтичної мікробіології та імунології; доклінічних досліджень нових лікарських засобів; фармацевтичної опіки рецептурних та безрецептурних лікарських препаратів; доказової медицини; сучасної фармакотерапії, соціально-економічних досліджень у фармації, маркетингового менеджменту та фармакоекономіки на етапах створення, реалізації та використання лікарських засобів; управління якістю у галузі створення, виробництва й обігу лікарських засобів; суспільствознавства; фундаментальних та мовних наук.

УДК 615.1

ASSESSMENT OF THE EFFECTIVENESS OF QUALITY CONTROL MECHANISMS FOR PHARMACEUTICAL SERVICES IN PHARMACIES

Abdelati Rouane
Scientific supervisor: Bondarieva I.V.
National University of Pharmacy, Kharkiv, Ukraine
fmmqaph@nuph.edu.ua

Introduction. The pharmaceutical industry plays a vital role in the healthcare sector by ensuring the safe and effective delivery of medications and related services to the public. In this regard, the quality of pharmaceutical services in pharmacies directly impacts the health and well-being of individuals and communities.

Aim. The aim is assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies.

Materials and methods. The methods of questionnaire, analysis, grouping, comparison, generalization have been used in study.

Results and discussion. A survey of 46 pharmacists was conducted to evaluate the effectiveness of quality control mechanisms in pharmaceutical services, highlighting their role and impact in pharmacies. The findings revealed that 82% of respondents were fully familiar with internal quality standards for pharmaceutical services. When asked to assess the implementation of these mechanisms, 71% rated the quality control process as very effective, 13% as effective, 9% as satisfactory, and 7% as ineffective. Regular compliance checks were reported by 86% of respondents, occurring monthly or quarterly, with 70% expressing complete satisfaction with the quality of internal audits. The survey showed that 60% of respondents had full confidence that quality control systems effectively prevent errors in dispensing medicines, while 67% utilized modern information technologies, such as electronic prescription accounting and expiration date tracking systems. Additionally, 51% considered the quality control of patient counseling on medication use to be very effective. However, 54% noted that their pharmacies did not provide education or training on quality control for pharmacists. Despite this, 60% were satisfied with their awareness of new regulatory requirements and standards, and 80% believed the quality control system significantly enhanced patient satisfaction by improving accuracy and trust. Furthermore, 73% confirmed the existence of a system for collecting and analyzing patient complaints, though 27% reported no such system, suggesting potential gaps in resources or awareness. The quality control of medicine manufacturing in pharmacies was deemed very effective by 63% of respondents, and 40% believed it fully supported the rational use of medicines.

Conclusions. Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies was conducted.

MARKETING COMMUNICATION POLICY AS A TOOL FOR ENSURING THE COMPETITIVENESS OF PHARMACEUTICAL ENTERPRISES

Akabbouch Alaa
Scientific supervisor: Yashchuk I.
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Introduction. The modern pharmaceutical market is highly competitive, requiring companies to implement effective marketing strategies. With the rapid advancement of digital technologies,

National University of Pharmacy

Faculty <u>pharmaceutical</u>
Department <u>management, marketing and quality assurance in pharmacy</u>
Level of higher education <u>master</u>
Specialty <u>226 Pharmacy, industrial pharmacy</u>
Educational and professional program <u>Pharmacy</u>

<div align="right">

APPROVED
The Head of Department
<u>**management, marketing and**</u>
<u>**quality assurance in pharmacy**</u>

_____
<u>**Volodymyr MALYI**</u>
«02» September 2024

</div>

ASSIGNMENT
FOR QUALIFICATION WORK
OF AN APPLICANT FOR HIGHER EDUCATION

Abdelati ROUANE

1. Topic of qualification work: «Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies», supervisor of qualification work: Iryna BONDARIEVA, PhD, assoc. prof.

approved by order of NUPh from <u>"27" of September 2024 № 237</u>

2. Deadline for submission of qualification work by the applicant for higher education: <u>May 2025</u>

3. Outgoing data for qualification work: <u>sources of scientific literature, directories, retail sector of the pharmaceutical market, legislative and regulatory framework, statistical and reporting data, activity of pharmacy enterprises, analysis of professional periodicals.</u>

4. Contents of the settlement and explanatory note (list of questions that need to be developed): <u>to reveal the role and impact of quality control mechanisms in pharmacies; to describe the regulatory frameworks and standards for pharmaceutical services quality; to assess of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies; to study challenges and inefficiencies in current quality control practices; to identify integration of new technologies and digital solutions for quality control in pharmacies; to explore the development practices for implementing quality control improvements in pharmacy services.</u>

5. List of graphic material (with exact indication of the required drawings):
<u>Figures – 25</u>_____

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
1	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	09.09.2024	09.09.2024
2	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	18.11.2024	18.11.2024
3	Iryna BONDARIEVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	03.02.2025	03.02.2025

7. Date of issue of the assignment: «02» September 2024.

CALENDAR PLAN

№ з/п	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Collection and generalization of data from scientific literature by areas of qualification work	September 2024	**done**
2	Study the regulatory frameworks and standards for pharmaceutical services quality	September 2024	**done**
3	Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies	November 2024	**done**
4	Study challenges and inefficiencies in current quality control practices	February 2025	**done**
5.	Development practices for implementing quality control improvements in pharmacy services	February 2025	**done**
6	Writing and design of qualification work	May 2025	**done**
7	Approbation of qualification work	May 2025	**done**
8	Submission of the qualification work to the EC of the National University of Pharmacy	May 2025	**done**

An applicant of higher education _____ Abdelati ROUANE

Supervisor of qualification work _____ Iryna BONDARIEVA

ВИТЯГ З НАКАЗУ № 237
По Національному фармацевтичному університету
від 27 вересня 2024 року

Затвердити теми кваліфікаційних робіт здобувачам вищої освіти 5-го курсу Фм20(4,10д) 2024-2025 навчального року, освітньо-професійної програми – Фармація, другого (магістерського) рівня вищої освіти, спеціальності 226 – Фармація, промислова фармація, галузь знань 22 Охорона здоров'я, денна форма здобуття освіти (термін навчання 4 роки 10 місяців), які навчаються за контрактом (мова навчання англійська та українська) згідно з додатком № 1.

Прізвище, ім´я здобувача вищої освіти	Тема кваліфікаційної роботи		Посада, прізвище та ініціали керівника	Рецензент кваліфікаційної роботи
по кафедрі менеджменту, маркетингу та забезпечення якості у фармації				
Роуан Абделаті	Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах	Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies	доц. Бондарєва І.В.	доц. Терещенко Л.В.

Ректор
Вірно. Секретар

ВИСНОВОК

**експертної комісії про проведену експертизу
щодо академічного плагіату у кваліфікаційній роботі**

здобувача вищої освіти

«30» квітня 2025 р. № 331090718

Проаналізувавши кваліфікаційну роботу здобувача вищої освіти Роуан Абделаті, групи Фм20(4.10) англ-01, спеціальності 226 Фармація, промислова фармація, освітньої програми «Фармація» навчання на тему: «Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах / Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies», експертна комісія дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (компіляції).

Голова комісії,
проректор ЗВО з НПР,
професор   Інна ВЛАДИМИРОВА

REVIEW
of scientific supervisor for the qualification work of the master's level of higher education of the specialty 226 Pharmacy, industrial pharmacy
Abdelati ROUANE
on the topic: «Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies»

Relevance of the topic. The relevance of this research lies in the increasing demand for effective and efficient pharmaceutical services in an era where healthcare systems are evolving rapidly, and patients expect greater accountability and reliability from healthcare providers.

Practical value of conclusions, recommendations and their validity. The practical significance of the obtained results lies in their potential to improve the quality of pharmaceutical services by enhancing quality control mechanisms in pharmacies. This research evaluates the effectiveness of existing quality control systems, providing valuable insights that can contribute to more effective management practices, increased operational efficiency, and better patient outcomes.

Assessment of work. Abdelati ROUANE conducted a significant research work and successfully coped with it, showed the ability to analyze and summarize data from literary sources, to work independently. In the work, the research results are properly interpreted and illustrated with figures. While completing the qualification work, the higher education applicant showed creativity, purposefulness, independence, and perseverance.

General conclusion and recommendations on admission to defend. The qualification work of the 5th year applicant of higher education Phm20(4,10) eng-01 group Abdelati ROUANE on the topic: "Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies" is a completed scientific study, which in terms of relevance, scientific novelty, theoretical and practical significance meets the requirements for qualification works, and can be presented to the EC of the National University of Pharmacy.

Scientific supervisor　　　　　　＿＿＿＿＿＿＿＿＿＿＿＿　Iryna BONDARIEVA

14 May 2025

REVIEW
for qualification work of the master's level of higher education, specialty 226 Pharmacy, industrial pharmacy
Abdelati ROUANE
on the topic: «Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies»

Relevance of the topic. Pharmacists are entrusted with ensuring the appropriate use of medications, providing accurate counseling to patients, and preventing adverse drug reactions. Effective quality control mechanisms are crucial in upholding these responsibilities. Therefore, it is necessary to assess the various quality control mechanisms currently in use in pharmacies, identify the challenges they face, and develop strategies to optimize these mechanisms.

Theoretical level of work. The qualification work reveals quality control mechanisms in pharmacies and standards for pharmaceutical services quality.

Author's suggestions on the research topic. The author assessed the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies.

Practical value of conclusions, recommendations and their validity. The practical significance of the results lies in their potential to enhance pharmaceutical service quality by strengthening quality control mechanisms in pharmacies. By evaluating the effectiveness of existing systems, this research provides valuable insights that can lead to improved management practices, greater operational efficiency, and better patient outcomes.

Disadvantages of work. As a remark, it should be noted that some results of the literature review, which are presented in the first chapter, need stylistic refinement. In general, these remarks do not reduce the scientific and practical value of the qualification work.

General conclusion and assessment of the work. Abdelati ROUANE qualification work "Assessment of the effectiveness of quality control mechanisms for pharmaceutical services in pharmacies " is a scientifically based analytical study that has theoretical and practical significance. The qualification work meets the requirements for qualification papers and can be submitted to the EC of the National University of Pharmacy.

Reviewer _____ assoc. prof. Lyubov TERESHCHENKO

15 May 2025

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ
ВИТЯГ З ПРОТОКОЛУ № 15
16 травня 2025 року
м. Харків
**засідання кафедри менеджменту, маркетингу
та забезпечення якості в фармації**
Голова: завідувач кафедри ММЗЯФ, доктор фарм. наук, професор Малий В. В.

Секретар: доцент ЗВО, канд. фарм. наук, доц. Жадько С.В.

ПРИСУТНІ: зав. кафедри ММЗЯФ, доктор фарм. наук, проф. Малий В.В., професор ЗВО, докт. фарм. наук, проф. Пестун І.В., професор ЗВО, докт. фарм. наук, проф. проф. Літвінова О.В., професор ЗВО, докт. фарм. наук, проф. проф. Коваленко С.М., професор ЗВО, докт. фарм. наук, проф. Крутських Т.В., професор ЗВО, докт. фарм. наук, проф. проф. Посилкіна О.В., доцент ЗВО, канд. фарм. наук, доц. Бабічева Г.С., доцент ЗВО, канд. фарм. наук, доц. Бондарєва І.В., канд. екон. наук, доц. Гладкова О.В., канд. екон. наук, доц. Глєбова Н.В., канд. екон. наук, доц. Деренська Я.М., доцент ЗВО, канд. фарм. наук, доц. Жадько С.В., канд. фарм. наук, доц. Зборовська Т.В., канд. юрид. наук, доц. Коляда Т.А., канд. екон. наук, доц. Ковальова В.І., канд. фарм. наук, доц. доц. Лісна А.Г., доцент ЗВО, канд. фарм. наук, доц. Малініна Н.Г., доцент ЗВО, канд. фарм. наук, доц. Рогуля О.Ю., асистент, канд. фарм. наук Шуванова О.В., здобувачі вищої освіти факультету фармацевтичного

ПОРЯДОК ДЕННИЙ: Про допуск здобувачів вищої освіти випускного курсу факультету фармацевтичного спеціальності 226 Фармація, промислова фармація, освітньо-професійної програми Фармація до захисту кваліфікаційних робіт в Екзаменаційній комісії НФаУ.

СЛУХАЛИ: Про допуск здобувача вищої освіти факультету фармацевтичного випускного курсу спеціальності 226 Фармація, промислова фармація освітньо-професійної програми Фармація групи Фм20(4,10д)англ-01 Абделаті РОУАН до захисту кваліфікаційної роботи в Екзаменаційній комісії НФаУ. Кваліфікаційна робота на тему «Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах».

ВИСТУПИЛИ: В обговоренні кваліфікаційної роботи взяли участь проф. ЗВО Пестун І.В., доц. ЗВО Бабічева Г.С. Керівник кваліфікаційної роботи: доц., канд. фарм. наук Бондарєва І.В.

УХВАЛИЛИ: Допустити здобувача вищої освіти Абделаті РОУАН до захисту кваліфікаційної роботи на тему «Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах» в Екзаменаційній комісії НФаУ.

Зав. каф. ММЗЯФ, доктор фарм. наук, професор	Володимир МАЛИЙ
Секретар, доцент ЗВО, канд. фарм. наук, доцент	Світлана ЖАДЬКО

НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

ПОДАННЯ
ГОЛОВІ ЕКЗАМЕНАЦІЙНОЇ КОМІСІЇ
ЩОДО ЗАХИСТУ КВАЛІФІКАЦІЙНОЇ РОБОТИ

Направляється здобувач вищої освіти Абделаті РОУАН до захисту кваліфікаційної роботи

за галуззю знань 22 Охорона здоров'я

спеціальністю 226 Фармація, промислова фармація

освітньо професійною програмою Фармація

на тему: «Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах».

Кваліфікаційна робота і рецензія додаються.

Декан факультету _____ / Микола ГОЛІК /

Висновок керівника кваліфікаційної роботи

Здобувач вищої освіти Абделаті РОУАН виконав на кафедрі менеджменту, маркетингу та забезпечення якості у фармації НФаУ кваліфікаційну роботу, яка присвячена оцінці ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах.

У першому розділі роботи розглянуто теоретичні основи контролю якості у фармацевтичних послугах, зокрема роль і вплив механізмів контролю якості в аптечних закладах, а також нормативно-правові засади та стандарти якості фармацевтичних послуг. Другий розділ присвячено аналізу існуючих механізмів контролю якості в аптеках. У третьому розділі розроблено рекомендації щодо вдосконалення механізмів контролю якості в аптеках, зокрема інтеграцію новітніх технологій та цифрових рішень, а також розробку практичних заходів щодо покращення контролю якості фармацевтичних послуг.

У цілому подана до захисту кваліфікаційна робота Абделаті РОУАН на тему «Оцінка ефективності механізмів контролю якості фармацевтичних послуг в аптечних закладах» відповідає вимогам, що висуваються до кваліфікаційних робіт, оцінюється позитивно і може бути рекомендована для захисту в Екзаменаційну комісію НФаУ.

Керівник кваліфікаційної роботи

_____ Ірина БОНДАРЄВА

14 травня 2025 року

Висновок кафедри про кваліфікаційну роботу

Кваліфікаційну роботу розглянуто. Здобувач вищої освіти Абделаті РОУАН допускається до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувач кафедри
менеджменту, маркетингу та
забезпечення якості у фармації

_____ Володимир МАЛИЙ

16 травня 2025 року

Qualification work was defended

of Examination commission on

« » of June 2025

With the grade _____

Head of the State Examination commission,

D.Pharm.Sc, Professor

_____ / Volodymyr YAKOVENKO/