

Medication Safety and Accessibility: The Impact of Pharmacists on Public Health Policies and Patient Care

Maram Khaled Ahmed AlThabet¹, Raod Ali Zaid Alshahrani², Wafa Saeed Mohammed Alshahrani³, Amjad Msfer Awad Al Almunis⁴, Thuraya Yahya Ebrahim Asiri¹, Tahani Ali Mubarak Alqahtani⁴, Amal Saeed Naseer Al Ghunum⁴, Alanoud Nasser Zamil Alshahrani⁴, Mohammed Safar Mohammed Alshahrani⁵, Abdalrhman Hassan Ali Alassiri⁵

¹Pharmacist, Khamis Mushait health sector, Aseercluster, Asir

²Pharmacist, Asser Central Hospital, Aseer Cluster, Asir

³Public health specialist, khamis Mushayt general hospital, Aseercluster, Asir

⁴Public Health, Khamis Mushait health sector, Aseercluster, Asir.

⁵Pharmacist, khamismushayt maternity and children hospital, Aseercluster, Asir.

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ABSTRACT

Introduction: Medication safety and rational use is an important component of health care systems worldwide to achieve the best therapeutic effect with fewer adverse effects of using medications. HIS is therefore not only beneficial to the general health of a nation's population but also a way through which costs of health care, hospitalization and even adverse drug reactions which are some of the biggest killers globally can be reduced. In this regard, the pharmacist occupies an essential function as medication experts, and participating members of public health and patient safety and accessibility society programs.

Aim of work: To highlight the challenges and opportunities in these domains, emphasizing the need for integrated approaches to optimize healthcare delivery and improve patient outcomes.

Methods: We conducted a comprehensive search in the MEDLINE database's electronic literature using the following search terms: Medication Safety, Accessibility, Impact, Pharmacists, Public, Health, Policies and Patient Care. The search was restricted to publications from 2016 to 2024 in order to locate relevant content. We performed a search on Google Scholar to locate and examine academic papers that pertain to my subject matter. The selection of articles was impacted by certain criteria for inclusion.

Results: The publications analyzed in this study encompassed from 2016 to 2024. The study was structured into various sections with specific headings in the discussion section.

Conclusion: Basically, pharmacists are valuable partners in medication safety; they play their part to avoid medication errors, teach patients and prescribers, and identify adverse drug effects. They contribute at both micro and macro levels and are invaluable members to ensuring the safe delivery of medicines to individual patients. To build on this success, there are factors that health systems need to overcome including workload and other factors concerning system integration to allow pharmacists operate at their maximum capacity as medication safety communicators. With the help of the discussed measures involving pharmacists' safety performance and promoting interdisciplinary cooperation, health care organizations are able to decrease medication related harm in rather a short period of time, thus enhancing patient and population health.

Keywords: Medication Safety, Accessibility, Impact, Pharmacists, Public, Health, Policies and Patient Care

INTRODUCTION

Medication management is an important aspect of the care delivery systems in most countries in the world because it enhances the quality of therapeutic processes and diminishes adverse effects of medications. Adherence to the safe medication practice promotes individual health and saves costs; decreases hospitalizations and ADRs that are among the significant sources of morbidity and mortality globally. In this context, the professionals who work in this sector are bottlenecks as medication experts as part of their responsibility as part the public health policies as well as patient care with strong emphasis on safety as well as accessibilities (Mansur, 2016).

The World Health Organization considers medication safety as one of the crucial concerns of the world demanding improved mechanisms to avoid medication errors, ensure optimal pharmacotherapy, and encourage the reasonable use of medications (World Health Organization, 2024). Medication errors are Point of care errors

that reduce the probability ratios and outcome of the patients by increasing the usage of drugs or causing harm to the patient. Such mistakes are common due to factors like misunderstanding between the healthcare givers and the recipients, ineffective communication of details to the patient and even organizational deficiencies (Nouri et al., 2024). For example, WHO found out that medication errors are responsible for death on a daily basis and negatively affect around 1.3 million people in the United States every year ((World Health Organization, 2024). To these risks, pharmacists are well placed to minimize through proper dispensing and identification, counseling patients on medications and participating in multi-disciplinary health care teams.

Another focal area is the issue of medicational availability which includes availability, financial and geographical rationality of essential medicines. Medication is one of the key components of attaining the UHC goal, but since its attainment depends on the availability, affordability and accessibility, clients from all the economic brackets are not able to access medication because of poor supply and health infrastructure.

Two billion people worldwide are estimated to be denied essential medicines and the situation is worse in LMICs; figures retrieved from 2022 (Boro& Stoll, 2022). These disparities make pharmacists important actors when it comes to advancing the acquisition of inexpensive medicines, expanding the choice of drugs to populate a formulary, and engaging in efforts to reduce the costs of medications and their distribution (Muller, 2019). Sparities by advocating for cost-effective drug procurement, developing formularies that meet population health needs, and participating in initiatives aimed at enhancing medication affordability and distribution (Muller, 2019).

Public health policies involve research, education and advocacy by pharmacists in their professional role apart from their technical roles. They engage in pharmacology as well as clinical therapeutics, and so arm themselves with the best information that supports the formulation of safer drug policies whose availability is not a barrier. For instance, pharmacists are engaged in formulating national policies in drug policies, essential medicines list, and managing antimicrobial resistance. Furthermore, their participation in activities like vaccination, smoking control, and other health promotion crusades indicates their role in disease prevention and health promotion (Strand et al., 2017).

In addition, the key services that pharmacists are involved in apart from the dispensing of medicines include; medication therapy management, chronic disease management, and health promotion. They play a very useful role in increasing compliance to drugs, decreasing incidence of ADRs and overall improving the quality of patients' lives. Several researches conducted to demonstrate that such interventions sponsored by a pharmacist decrease medication-related admissions and enhance condition outcomes in disorders such as hypertension, diabetes and asthma (Ferreri et al., 2020).

Because of the dynamism in the healthcare problems; such as the increase in poly pharmacy practice, increased patients' aging demographics, and new virus strains, the pharmacists' functionalities are critical. Thus, discussion of medication safety and access shows that pharmacists help build better healthcare systems, care for patients, and enhance global health justice Al-Worafi, Y. M. (2024). This paper reviews the complex features of pharmacists' contributions to public health policies and patient care with emphasis on safe, equitable and effective use of medicines.

AIM OF WORK

To highlight the challenges and opportunities in these domains, emphasizing the need for integrated approaches to optimize healthcare delivery and improve patient outcomes.

METHODS

A thorough search was carried out on well-known scientific platforms like Google Scholar and Pubmed, utilizing targeted keywords such as Medication Safety, Accessibility, Impact, Pharmacists, Public, Health, Policies and Patient Care. The goal was to collect all pertinent research papers. Articles were chosen according to certain criteria. Upon conducting a comprehensive analysis of the abstracts and notable titles of each publication, we eliminated case reports, duplicate articles, and publications without full information. The reviews included in this research were published from 2016 to 2024.

RESULTS

The current investigation concentrated on the challenges and opportunities in these domains, emphasizing the need for integrated approaches to optimize healthcare delivery and improve patient outcomes between 2016 and 2024. As a result, the review was published under many headlines in the discussion area, including: The Importance of Medication Safety and Accessibility, Pharmacists' Role in Ensuring Medication Safety, Enhancing Medication Accessibility Through Pharmacy Services, Pharmacists as Advocates for Public Health Policies, Challenges and Barriers to Pharmacists' Roles and Opportunities and Future Directions

DISCUSSION

Medication management and availability are core tenets of any population health agenda as they determine patients' health and the performance of the overall health systems globally. Assuming they are experts in medicine, pharmacists remain crucial players in advocating and promoting rational drug use. Their roles are not limited to committing prescriptions but embrace tasks in public health, teaching, and patient-centered care (Mohiuddin, 2020). This paper aims at discussing multiple aspects of pharmacists' activity in the sphere of medication safety and availability for the population while emphasizing their impact on the development of public health policies and patients' treatment. Such domains will be discussed to focus on the issues and prospects within such fields and the importance of integrated models to enhance healthcare system delivery and patient care.

1. The Importance of Medication Safety and Accessibility

Medication safety and availability are two significant aspects of primary healthcare delivery. Many cases involving improper medication use with adverse effects such as wrong dosage, drug-drug interactions, and the failure to stick to appropriate instructions as required lead to morbidity/mortality as well as skyrocketing health costs. Medication safety is acknowledged as one of the main priorities of the patient safety program of the World Health Organization (WHO); medicines are stated to require systematic methods for the prevention of adverse events (World Health Organization, 2024).

Medication access is not just only a question of the availability of drugs but also the question of their prices, cultures, and necessary and proper usage. Currently, there are gradual inequalities in access to critical healthcare needs, and more so, to essential medicines, which negatively impact vulnerable populations (Bach & Hartung, 2019). These problems can be discussed with pharmacists since they are knowledgeable about pharmacology, available to the public, and are part of a care team. This is essential in filling the gaps in medication safety and accessibility as most involve themselves in medication management programs and policies (Hindi et al., 2018).

2. Pharmacists' Role in Ensuring Medication Safety

Pharmacists are involved in medication safety in several ways that are considered essential interventions. First, they are helpful in the prevention and reduction of medication errors (Nicholls et al., 2017). Clinicians often refer to pharmacists as medication management gatekeepers since they screen prescriptions for possible drug interactions, contraindications, and wrong doses. For example, it is evidenced that engaging pharmacists in medication reconciliation during hospital transitions decreases medication imbalances and related adverse effects (Gillani et al., 2021).

Second, pharmacists are responsible for patient counseling. They consult patients on correct drug intake, risks associated with the medication, and approaches to ensure compliance. It also enables patients to manage their treatments individually and minimizes the occurrences of medication mistakes while enhancing the results acquired from medicine. Several past literature articles have indicated that pharmacist-led education interventions positively impact adherence and hospitalization rates among patients with common long-term diseases, including diabetes and hypertension (Marcum et al., 2021).

Third, pharmacists actively engage in pharmacovigilance, identifying and reporting ADRs to national/international databases. Here, it deepens the identification of safety signals and provides information on drug safety to the regulating authorities. In this way, pharmacists are actively involved in creating safer medication practices and policies in cooperation with regulatory authorities (Bihan et al., 2020).

3. Enhancing Medication Accessibility Through Pharmacy Services

A separate category that contributes immensely to enhancing medicine accessibility is the pharmacist's invention of service delivery modalities. They have become role models for other settings in that they provide affordable access to health care, especially in areas with few clinics or hospitals. Olaboye (2024) states that the ability to take more extended hours and the offering of walk-in services lower the gap that patients/clients face in accessing their medication and health advice.

It should also be noted that it is proposed to expand the field of pharmacists' activities and functions, including vaccination, treatment of chronic diseases, and advice on treating minor illnesses. Apart from enhancing access, they also relieve the primary care physicians and emergency care facilities. For instance, an expanded immunization role for pharmacists has been implemented and has been influential in raising immunization coverage, especially during the influenza and COVID-19 epidemics (Isenor et al., 2016).

However, pharmacists manage another barrier: a financial barrier to medication availability. As a result, they help patients complete insurance forms or request transfers to cheaper forms of medications and patient assistance programs and, more importantly, recommend cheaper but equivalent medications such as generics. Their support for price disclosure and policies that will enhance the affordability of medicines also seeks to increase supply and access by enhancing price competition with extra focus on the poor populace (Osae et al., 2022).

4. Pharmacists as Advocates for Public Health Policies

It is becoming clear that engaging pharmacists, as any other healthcare practitioner in public health policy is a way of making the system more efficient regarding medication safety and accessibility. Their thorough training in pharmacology and patient care makes them a great resource as far as policies are concerned. Pharmacists are, in turn, advocating for such policies that call for the reasonable use of medicines, lowering medication risks, and increasing the coverage of essential drugs (Gastelurrutia et al., 2020).

The second major policy issue where healthcare professionals unite is the issue of antimicrobial stewardship programs (ASPs) promotion to prevent the spread of global Antimicrobial resistance (AMR). Antimicrobial stewardship programs (ASPs) widely avail pharmacists of the need to inform patients of the need for biological medicines, the surveillance and re-education of healthcare recruits, and, most importantly, the prudent utilization of antibiotics management. The outcomes of integrating pharmacists into the ASP team in reducing resistance rates and improving antibiotic prescribing patterns have also been documented (Baur et al., 2017).

The beliefs of pharmacists extend beyond these areas. They also have an influential voice in campaigning for policies that tackle social factors, especially those that inhibit access to medications and affect patients' chances of adhering to treatment. For example, they back policies designed to lower the direct cost to the patient of vital medical treatments and to develop pharmacy practice in frontier and low-resource areas. Furthermore, by engaging in public health campaigns and lobbying activities, pharmacists help address the issue of health equity comprehensively (Osae et al., 2022).

5. Challenges and Barriers to Pharmacists' Roles

There are numerous positive aspects that encourage them. However, the negative aspects also do not allow them to capitalize on medication safety and accessibility fully. One of the main hindering factors is that, in some healthcare systems, pharmacists need to be recognized and included as part of the healthcare team, which impairs other providers' decision-making (Poudel et al., 2019).

Also, some countries, states, or even districts may restrict the activities of pharmacists beyond a specific scope, also known as a scope of practice. For instance, in some regions, laws may be so prohibitive that they stop pharmacists from engaging in higher levels of clinical activity, including prescribing medicines or treating chronic ailments. It also impacts their input on medication safety and accessibility (Ahmed Abousheishaa et al., 2022).

Pharmacists also have a handful of difficulties related to the adage 'there is no free lunch.' This phrase may refer to the fact that many environments, shallow and middle-income countries, have a shortage of pharmacy staff and facilities to provide full service. Hence, the arguments for systemic reforms and investments to enable pharmacists to perform their roles (Hatton et al., 2021).

6. Opportunities and Future Directions

The changing dynamics of health care open up a wide range of possibilities for pharmacists to enhance their input in the safety and accessibility of medication. Technological advancements like electronic health record (EHR) systems and telepharmacy services allow pharmacists to work even more integratedly and efficiently. Where EHRs support interaction between pharmacists and other clinicians, teledispensing enhances the ability of pharmacy services to reach isolated and underserved populations (Akhand et al., 2024).

There is a growing shift to value-based healthcare, and this encompasses pharmacists' work in improving the health of patients and the nation's expenditure on medications. Understanding the economic and clinical case for pharmacist intervention allows the profession to endorse further role expansions and compensation policies (Akhand et al., 2024).

Finally, the COVID-19 crisis showcased even more the relevance of pharmacists in public health emergencies. The role of pharmacists during the pandemic as vaccination supporters, fluent communicators about drug intake, or even just teachers to patients shows how they can be helpful in future public health emergencies. These lessons learned can encourage pharmacists to lobby for the integration and codification of inappropriate emergency response processes (Visacri et al., 2021).

CONCLUSION

The importance of pharmacists in reconciliation, patient safety, and health education is that several approaches place that can reinforce the scope of pharmacist activities and their integration into healthcare systems for optimal patient care. Despite these outcomes, medication mishaps still occur for one reason or another. Attitudes toward medication errors make it essential to draw several conclusions regarding interventions because they vary among people and cultures. Providers and patients suffer from information disparities that can be resolved.

In regulating and arranging for medication use, however, the medication managers are invariably constrained to their locus of control due to the nature and organization of healthcare systems. Pharmacists and other organizations can do further work within the reform to structure positions for more effective practice and intervention. Similarly, professional societies describe the logical organization of the discipline, especially about its integration into the healthcare system. There should also be more or less at least one hope or aim that every

nursing department or even each staff member individually, should coordinate all work quality improvement activities efforts.

REFERENCES

1. Ahmed Abousheishaa, A., HatimSulaiman, A., ZamanHuri, H., Zaini, S., Adha Othman, N., bin Aladdin, Z., & Chong Guan, N. (2020, May). Global scope of hospital pharmacy practice: A scoping review. In *Healthcare* (Vol. 8, No. 2, p. 143).MDPI.
2. Akhand, S., Yadav, A., & Jain, D. K. (2024).Unveiling the Digital Frontier: Technological Advances in Pharmacy Research. *Journal of Clinical Advances and Research Reviews*.
3. Al-Worafi, Y. M. (2024). Pharmacy Research in Developing Countries: Achievements and Challenges. *Handbook of Medical and Health Sciences in Developing Countries: Education, Practice, and Research*, 1-22.
4. Bach, P., &Hartung, D. (2019). Leveraging the role of community pharmacists in the prevention, surveillance, and treatment of opioid use disorders. *Addiction science & clinical practice*, 14(1), 30.
5. Baur, D., Gladstone, B. P., Burkert, F., Carrara, E., Foschi, F., Döbele, S., &Tacconelli, E. (2017). Effect of antibiotic stewardship on the incidence of infection and colonisation with antibiotic-resistant bacteria and *Clostridium difficile* infection: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, 17(9), 990-1001.
6. Bihan, K., Lebrun-Vignes, B., Funck-Brentano, C., & Salem, J. E. (2020). Uses of pharmacovigilance databases: an overview. *Therapies*, 75(6), 591-598.
7. Boro, E., & Stoll, B. (2022). Barriers to COVID-19 health products in low-and middle-income countries during the COVID-19 pandemic: A rapid systematic review and evidence synthesis. *Frontiers in public health*, 10, 928065.
8. Ferreri, S. P., Hughes, T. D., & Snyder, M. E. (2020). Medication therapy management: current challenges. *Integrated Pharmacy Research and Practice*, 71-81.
9. Gastelurrutia, M. A., Faus, M. J., &Martínez-Martínez, F. (2020).Primary health care policy and vision for community pharmacy and pharmacists in Spain. *Pharmacy Practice (Granada)*, 18(2).
10. Gillani, S. W., Gulam, S. M., Thomas, D., Gebreighziabher, F. B., Al-Salloum, J., Assadi, R. A., & Sam, K. G. (2021). Role and services of a pharmacist in the prevention of medication errors: a systematic review. *Current Drug Safety*, 16(3), 322-328.
11. Hatton, K., Bhattacharya, D., Scott, S., & Wright, D. (2021). Barriers and facilitators to pharmacists integrating into the ward-based multidisciplinary team: a systematic review and meta-synthesis. *Research in Social and Administrative Pharmacy*, 17(11), 1923-1936.
12. Hindi, A. M., Schafheutle, E. I., & Jacobs, S. (2018). Patient and public perspectives of community pharmacies in the United Kingdom: a systematic review. *Health Expectations*, 21(2), 409-428.
13. Isenor, J. E., Edwards, N. T., Alia, T. A., Slayter, K. L., MacDougall, D. M., McNeil, S. A., & Bowles, S. K. (2016). Impact of pharmacists as immunizers on vaccination rates: a systematic review and meta-analysis. *Vaccine*, 34(47), 5708-5723.
14. Mansur, J. M. (2016). Medication safety systems and the important role of pharmacists. *Drugs & aging*, 33, 213-221.
15. Marcum, Z. A., Jiang, S., Bacci, J. L., &Ruppar, T. M. (2021). Pharmacist-led interventions to improve medication adherence in older adults: A meta-analysis. *Journal of the American Geriatrics Society*, 69(11), 3301-3311.
16. Mohiuddin, A. K. (2020). The excellence of pharmacy practice. *INNOVATIONS in pharmacy*, 11(1).
17. Muller, B. (2019). Payer Perspectives on Balancing Access & Affordability of Specialty Medications in the Evolving US Healthcare System.
18. Nicholls, J., MacKenzie, C., &Braund, R. (2017).Preventing drug-related adverse events following hospital discharge: the role of the pharmacist. *Integrated Pharmacy Research and Practice*, 61-69.
19. Nouri, A., Lamfon, N., Silsilah, G., Alabdulwahed, S. M., Alshaer, M. M., Al Enazi, N., ...&Aldraimly, M. A. (2024). Defining Medication Errors, Prescribing Errors, and Adverse Drug Events: A Narrative Review. *Palestinian Medical and Pharmaceutical Journal*, 9(3), 4.
20. Olaboye, J. A. (2024). Assessment of medication access and distribution in Nigeria: Challenges and opportunities for improvement. *International Journal of Science and Technology Research Archive*, 6(2), 083-090.
21. Osaе, S. P., Chastain, D. B., & Young, H. N. (2022). Pharmacists role in addressing health disparities— Part 1: Social determinants of health and their intersectionality with medication use, health care utilization, and health outcomes. *Journal of the American College of Clinical Pharmacy*, 5(5), 533-540.
22. Poudel, A., Lau, E. T., Deldot, M., Campbell, C., Waite, N. M., &Nissen, L. M. (2019). Pharmacist role in vaccination: Evidence and challenges. *Vaccine*, 37(40), 5939-5945.

23. Strand, M. A., Davidson, K. M., & Schulze, N. (2017). Linking pharmacists to the delivery of public health services. *Journal of the American Pharmacists Association*, 57(6), 742-746.
24. Visacri, M. B., Figueiredo, I. V., & de Mendonça Lima, T. (2021). Role of pharmacist during the COVID-19 pandemic: a scoping review. *Research in social and administrative pharmacy*, 17(1), 1799-1806.
25. World Health Organization. (2024). Global burden of preventable medication-related harm in health care: a systematic review.