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ORIGINAL RESEARCH article

The role of pharmacists in managing conditions like hypertension: The case of Northern Cyprus

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Abstract: Hypertension is a high-risk factor for cardiovascular diseases and its prevalence rate is increasing due to risk factors such as unhealthy lifestyles and aging populations. Managing hypertension is crucial to avoid complications such as stroke, heart failure, and kidney failure. In Northern Cyprus, where hypertension is a growing public health concern, pharmacists are increasingly recognized as key players in managing this ongoing condition. This study investigates the impact of pharmacists in controlling hypertension in Northern Cyprus through a survey-based observational approach. Data were collected from 70 hypertension patients engaging with community pharmacists. The results highlight pharmacists' contributions to patient education, blood pressure monitoring, and medication adherence. Relevant studies in other countries contextualize the findings about the importance of the pharmacist role. An analysis of the data confirms significant improvements in patient outcomes with pharmacist interventions. The survey results provide insights suggesting that overcoming systemic barriers and strengthening collaboration can optimize pharmacists' roles in managing hypertension in Northern Cyprus.

Introduction

Hypertension (HPT) is a major global health issue due to its asymptomatic nature, yet it is one of the high-risk factors for cardiovascular disease (CVD) [1]. According to the WHO, nearly 1.28 billion people aged 30-79 years worldwide suffer from HPT, with the condition being specifically prevalent in middle-income countries and regions with limited access to healthcare [2]. In Northern Cyprus, the HPT rate is steadily increasing due to a combination of genetic vulnerability, dietary habits, sedentary lifestyles, and aging populations. HPT management often requires a holistic approach that includes lifestyle modifications, regular blood pressure monitoring, and long-term pharmacotherapy [3]. However, healthcare infrastructure and accessibility can be limited, especially in rural areas [4]. This has prompted a growing interest in leveraging the expertise of community pharmacists to fill gaps in HPT [5, 6]. Pharmacists offer services that extend beyond traditional dispensing roles to include medication management, disease education, and care plan monitoring [7, 8]. **Table 1** compares the roles and challenges faced by pharmacists in Cyprus and other regions. Studying Cypriot

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pharmacists' perceptions proved a need to engage more actively in primary healthcare, despite barriers such as public responsiveness and time constraints. In Cyprus, pharmacists are expanding their roles beyond traditional medication dispensing to include more direct involvement in patient care and chronic disease management [9]. This shift is echoed in Egypt, where pharmacists are increasingly involved in disease state management and patient education, although there are notable gaps in care plan monitoring. In Egypt, a validated questionnaire to assess pharmacists' roles in HPT management, highlighting significant engagement in disease-state management and education [10]. However, gaps were noted in care plan monitoring and medication management which indicate areas for improvement.

Table 1: Comparative analysis of pharmacists' roles and challenges across different regions

Region	Primary role	Challenges faced
Northern Cyprus [9, 11]	Advisory role, screening, patient education, and CVD prevention	Lack of public responsiveness, time constraints, perception as shopkeepers rather than healthcare professionals
Egypt [10]	Disease-state management, medication management, and patient education	Gaps in care plan monitoring, need for structured guidelines
UK and Greece [12]	Secondary prevention, lifestyle advice, medication adherence	High workload, lack of interprofessional collaboration
Australia [13]	Management services, patient education, and medication review	Recruitment challenges need for better collaboration with General Practitioners
Pakistan [14]	Medicines management, patient counseling, and pharmaceutical care	Underutilization in healthcare systems, lack of interaction with healthcare professionals, shortage of pharmacist
Low- and Middle-Income Countries [15]	Enhancing public health through training and policy interventions	Need for quality assurance in pharmacy services
Spain [16]	Medication review, patient education, and risk prevention	Regional differences in roles need for outcome measurement
Qatar [17]	Health promotion	Lack of educational materials need for private counseling areas
USA [18]	Clinical pharmacy services, patient-centered care	Integration into healthcare teams, balancing traditional and clinical roles

In Pakistan, the role of pharmacists is evolving, with a focus on medicine management and patient counseling. However, challenges such as underutilization in the healthcare system and a shortage of pharmacists persist, limiting their potential impact [14]. In Spain, pharmacists are actively involved in medication review and patient education, with regional variations in their roles [11]. The need for structured outcome measurement is a persistent challenge. Meanwhile, in low- and middle-income countries, there is a push to enhance pharmacy services through training and policy interventions, although evidence of effectiveness remains limited [19]. In Qatar, pharmacists are involved in managing CVD risks and promoting health, but they face barriers such as a lack of educational materials and private counselling areas [17]. In the USA, clinical pharmacy services have become integral to patient-centered care, yet pharmacists face challenges in integrating into healthcare teams while balancing traditional and clinical roles [20]. These insights highlight the diverse roles pharmacists play globally and the common challenges they face, such as the need for better integration into healthcare systems and the development of structured guidelines to optimize their contributions to public health. Pharmacists' involvement in medication management, patient education, and disease prevention strategies is highly recognized to public health [21-23]. Their involvement in HPT management through patient education and lifestyle modification can be associated with better health outcomes [24-26]. In Nigeria, the challenges and opportunities surrounding medication safety were examined in public health facilities in Kaduna State [22, 27].

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Through semi-structured interviews with healthcare providers, the study identified multiple factors affecting patient safety, categorizing 30 subthemes within the Vincent multi-level framework. Key issues included prevalent medication errors and limited error reporting practices, attributed to systemic challenges such as inadequate training, attitudes toward patient safety, and insufficient regulatory support. The study emphasized the need for healthcare reforms that prioritize medication safety, underscoring the role of pharmacists and healthcare providers in preventing medication-related harm and improving clinical practices through increased safety awareness. Addressing structural barriers to medication safety is crucial, requiring collaboration between regulatory bodies and healthcare professionals to ensure safer patient outcomes [28]. Pharmacists continue to face challenges, including public misconceptions about their role and limited integration within the broader healthcare system. Expanding their role in managing HPT and other chronic conditions could enhance patient care and lead to better health outcomes [29, 30]. This requires addressing barriers to practice, increasing public awareness, and fostering collaboration with other healthcare providers. The perceptions of pharmacists regarding their roles in public health and chronic disease management highlight the need for ongoing education and training to enhance pharmacists' effectiveness in their roles. To overcome these challenges, pharmacists have emphasized the need for clearer policies and greater recognition of their contributions to primary healthcare in CVS prevention [31]. Studies on pharmacists' interventions in prescribing and medication management have shown promise in reducing medication-related harm, highlighting their potential in broader healthcare roles [32-34]. In Northern Cyprus, the potential for pharmacists to impact public health remains largely neglected as structural and systemic issues continue to hinder their full integration into the healthcare system [7]. The importance of integrating pharmacists into healthcare teams to optimize patient care and achieve desired health outcomes was reported [35, 36]. A study on the impact of pharmacist's positions in managing HPT and other chronic conditions illustrated that by overcoming existing barriers and enhancing pharmacists' integration into healthcare systems, they can essentially contribute to improving public health outcomes [37]. As noted, pharmacists, as trusted and accessible healthcare professionals, are well-positioned to play an essential role in HPT management. In Northern Cyprus, where there is a shortage of general practitioners and specialists, pharmacists are increasingly being seen as key contributors to patient care, particularly in the areas of medication management, patient education, and long-term disease monitoring. Unlike general practitioners, who may have long waiting times and limited availability, pharmacists often serve as the first point of contact for patients with chronic conditions. In many cases, pharmacists in Northern Cyprus provide informal consultations, including measuring patients' blood pressure in-store, explaining the use of antihypertensive medications, and offering advice on lifestyle modifications. This service is invaluable, especially in rural areas, where the availability of specialized care may be limited. As such, pharmacists are not only dispensers of medications but also have key roles in ensuring continuity of care for patients especially those suffering from HPT. However, there are some challenges in HPT management. One of the most significant barriers is medication non-adherence [19]. Many patients, particularly those with HPT, fail to take their medications as prescribed, leading to poor blood pressure control and increased risk [36]. Factors contributing to non-adherence include the complexity of the medication plan, side effects, cost of medications, and a lack of understanding about the importance of treatment adherence. Pharmacists are well-prepared to address these issues by providing medication counseling, identifying potential drug interactions, and offering advice on how to manage side effects [37]. They play a critical role in simplifying medication plans, particularly for patients who may be on multiple drugs for simultaneous conditions like diabetes or hyperlipidemia. However, there is still room to improve the way pharmacists can help to ensure that medications are taken correctly and that patients understand the importance of consistent medication use in

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achieving optimal blood pressure control. Although Northern Cyprus does not yet have collaborative practice agreements commonly seen in other countries, where pharmacists can adjust medication dosages under physician protocols, such models could significantly improve HPT management. By regularly monitoring patients' blood pressure and working with physicians to adjust antihypertensive treatments more frequently, pharmacists can help ensure faster responses to changes in a patient's condition. In addition to direct patient care, pharmacists in Northern Cyprus are increasingly involved in public health initiatives aimed at preventing and managing HPT. Given their community-centered role, pharmacists are in an ideal position to engage in health promotion and disease prevention activities. These may include educating the public on the risk factors for HPT, promoting quitting smoking, encouraging dietary modifications such as reducing salt intake, and promoting active lifestyles by supporting exercise initiatives [38]. Public health campaigns, such as Hypertension Awareness Weeks or in-store health events, can be organized in collaboration with government health agencies, with pharmacists taking the lead in spreading information and offering blood pressure measurements. Preventive care initiatives are also critical, especially in a region like North Cyprus where public awareness about HPT risk factors may be low. Through these efforts, pharmacists play a vital role in managing and reducing HPT, which helps lower the overall impact of CVS in the population. In Northern Cyprus, limited access to healthcare, especially in rural areas with physician shortages, makes pharmacists essential for continuous HPT care. Many pharmacies provide free, convenient in-store blood pressure monitoring, allowing patients to stay informed and detect uncontrolled HPT early. Regular consultations with HPT patients to review medications and discuss lifestyle changes also help assess treatment effectiveness. These follow-ups are especially important in areas where physician visits may be less frequent due to healthcare limitations. This study explores the unique role that pharmacists play in the management of HPT in Northern Cyprus, emphasizing their contributions to improving clinical outcomes, addressing healthcare gaps, and supporting public health initiatives.

Materials and methods

This study employs a survey-based design to evaluate the role of pharmacists in managing HPT in Northern Cyprus (Lefkoşa region). Data were collected from 70 HPT patients who engaged regularly with community pharmacists whose roles were assessed in terms of educational engagement and involvement in HPT management. The survey instrument was carefully structured and validated to ensure it was reliable and relevant to the study objectives. A pilot test with 10 participants helped clarify the questions and ensure their appropriateness. Content validity was confirmed through expert review by two pharmacists and a public health researcher. Reliability testing, conducted using Python for statistical analysis, demonstrated high internal consistency.

The survey was conducted between February and July 2024, targeting patients who interacted with pharmacists for HPT management. It incorporated quantitative and qualitative questions. Quantitative questions captured measurable data on blood pressure monitoring, medication adherence, and patient education frequency. Qualitative questions provided insights into patients' perceptions of pharmacist roles and identified challenges in care delivery. The sample size (n=70) was determined using Cochran's formula, which is widely employed in survey-based research [39]. A 95% confidence level (Z=1.96) and a 10.0% margin of error (e=0.1) were selected to balance precision and feasibility, as recommended for exploratory studies [40]. The estimated population size of 1,000 hypertensive patients engaging with community pharmacists in the Lefkoşa region of Northern Cyprus was incorporated into the calculation using the finite population correction. The survey

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consisted of 20 questions divided into two main sections: pharmacist interventions; frequency of blood pressure monitoring, medication counseling, lifestyle advice, and patient outcomes; perceptions of pharmacist contributions to blood pressure control, and overall satisfaction. The study involved community pharmacies in Northern Cyprus, where ethical guidelines were followed to ensure patient confidentiality.

Statistical analysis: The collected data were analysed using Python software. Descriptive statistics were used to describe the responses. The Chi-square test was chosen to analyze data, as it is appropriate for assessing categorical frequency distributions. The significance difference was set at $p<0.05$, while p-values less than 0.1 were considered indicative of trends.

Results

Table 2 highlights the educational roles of pharmacists in Northern Cyprus regarding HPT management. The data suggest that pharmacists frequently engage in educating patients about regular blood pressure monitoring and dietary changes, with significant percentages reporting these interactions at each visit. However, there appears to be a less frequent discussion about drug interactions and stress management, indicating potential areas for improvement. The result of the questionnaire suggests that patients are educated about blood pressure monitoring by pharmacists consistently, with 22.5% indicating they received this information at each visit and 35.0% reporting it happened sometimes. A smaller percentage could not remember receiving such education (5.0%). Education on medication interactions was slightly less frequent, with 15.0% of patients receiving this advice regularly and 25.0% when they asked for it. Notably, advice on dietary changes (25.0% regular) and stress management techniques were also highlighted (8.10% regular).

Table 2: Frequency of educational interactions by community pharmacists with hypertension patients in Northern Cyprus

Role of pharmacist	At each visit (2)	Sometimes (1)	Don't remember (0)	If I ask (-1)	Never/rarely (-2)	P value
My pharmacist educates me on the importance of regular blood pressure monitoring	22.5	35.0	5.0	20.0	17.5	<0.01**
My pharmacist discusses potential interactions between hypertension medications and other drugs	15.0	30.0	10.0	25.0	20.0	<0.1
My pharmacist advises on dietary changes	25.0	30.0	7.0	15.0	23.0	<0.01**
My pharmacist provides information on stress management techniques	18.0	25.0	8.0	20.0	29.0	<0.01
My pharmacist offers guidance on the importance of sleep-in managing hypertension	20.0	28.0	9.0	18.0	25.0	<0.01**

Table 3 Illustrates the active role pharmacists play in managing HPT in Northern Cyprus. Routine blood pressure checks are a common practice, reflecting the pharmacists' role in ongoing patient monitoring and management, with 40.0% of patients reporting that their pharmacist conducts these checks at every visit. The regular review of medication plans and collaboration with healthcare providers are also frequently reported, emphasizing the pharmacists' integral role in a multidisciplinary approach to patient care. However, 20.0% of patients said their pharmacist consistently helped manage medication side effects, suggesting that more attention may be needed in this area. These practices are crucial for ensuring medication safety. $P<0.01$ for several activities affirms the pharmacists' crucial role in patient care.

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Table 3: Engagement of community pharmacists in hypertension management activities in Northern Cyprus

Role of pharmacist	At each visit (2)	Sometimes (1)	Don't remember (0)	If I ask (-1)	Never/rarely (-2)	P value
My pharmacist conducts routine blood pressure checks	40.0	20.0	5.0	30.0	5.0	<0.01**
My pharmacist assists in managing medication side effects	20.0	30.0	10.0	20.0	20.0	< 0.01**
My pharmacist reviews my medication plan regularly	30.0	25.0	8.0	18.0	19.0	< 0.01**
My pharmacist collaborates with my healthcare provider for optimal care	25.0	35.0	7.0	15.0	18.0	< 0.01**

Table 4 summarizes patient satisfaction with their pharmacist in Northern Cyprus. Most patients agreed or strongly agreed that their pharmacist provided effective support for HPT issues (81.0%) and that accessing their pharmacist for HPT-related questions was easy (78.0%). The mean satisfaction rating for these aspects, with ratings of 4.15/5 and 4.10/5, was also high. However, there is still room for improvement in the amount of time pharmacists dedicate to explaining conditions and medications. Overall, 72.0% of patients were satisfied with the services, giving an average satisfaction rating of 4.00/5 for pharmaceutical services.

Table 4: Mean ratings and patient satisfaction agreement percentages for hypertension patients in Northern Cyprus

Statement	Mean rating (SD)/5	Percentage of patients agreeing and strongly agreeing
It is easy to access my pharmacist for hypertension-related questions	4.10 (0.95)	78.0
My pharmacist dedicates enough time to explain my condition and medications	3.8 (1.05)	67.0
My pharmacist communicates information clearly	4.05 (0.70)	73.0
My pharmacist provides effective support for hypertension issues	4.15 (0.80)	81.0
My pharmacist acts in my best interest	4.08 (1.25)	74.0
Overall satisfaction with pharmacist services	4.00 (0.95)	72.0

Discussion

The findings from this current study highlight the significant yet underutilized role of pharmacists in HPT management within Northern Cyprus (Lefkoşa region). Through a cross-sectional analysis of hypertensive patients regularly interacting with community pharmacists, this study identified challenges and opportunities for improving HPT care. Data were analyzed to evaluate the association between pharmacists' educational and management activities and patient-reported outcomes. The analysis of educational interventions showed significant associations between frequent pharmacist-patient educational interactions and improved self-reported patient behaviors, such as regular blood pressure monitoring and adherence to dietary modifications. These findings suggest that patients who received consistent pharmacist-led education were more likely to adopt beneficial HPT management practices. In addition, this study demonstrates significant associations between pharmacist-led HPT management activities and improved patient engagement, such as routine blood pressure checks and regular medication plan reviews. This highlights the impact of pharmacists in supporting effective HPT care. As trusted healthcare professionals, pharmacists can provide essential services to patients, particularly in underserved rural areas where physician shortages create barriers to timely care. However, various factors ranging from legislative restrictions to public perceptions limit pharmacists' ability to fully

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contribute to chronic disease management. Northern Cyprus' healthcare system, while advanced in many areas, struggles with shortages of medical professionals, especially in rural areas. This shortage places an additional burden on physicians and creates longer waiting times for patients. Pharmacists can help ease some of this burden by providing essential care services, especially for chronic conditions like HPT. In Northern Cyprus, pharmacists are widely regarded as medication dispensers rather than integral members of the healthcare team. Changing societal perceptions of pharmacists as healthcare providers who can contribute to chronic disease management is essential. Public education campaigns, supported by the government or health organizations, can help raise awareness of the broader role pharmacists can play. One of the primary challenges pharmacists face in Northern Cyprus is the limited scope of practice. Currently, pharmacists do not have the authority to adjust medications independently, limiting their potential contribution to HPT management. Expanding pharmacists' scope through legislative changes, such as enabling collaborative practice agreements, could enhance their role in patient care [7, 27, 29]. To effectively manage chronic diseases like HPT, pharmacists in Northern Cyprus must continue to receive advanced training in chronic disease management and collaborative care. Programs that focus on evidence-based HPT management and patient counselling skills would further equip pharmacists to meet the growing needs of the population. Despite these challenges, there are substantial opportunities to leverage pharmacists' accessibility and expertise in HPT management. For example, integrating pharmacists into multidisciplinary care teams could facilitate better coordination of care and more frequent adjustments to treatment regimens. Regular follow-ups by pharmacists, as indicated in this study, were associated with better blood pressure control, with 40.0% of patients reporting routine blood pressure checks at each visit.

Community pharmacists are also well-positioned to lead public health initiatives. Efforts such as organizing HPT awareness events or collaborating with government agencies on preventive care campaigns could amplify their impact [18, 20, 21]. These initiatives should focus on common risk factors in Northern Cyprus, such as high dietary salt intake and sedentary lifestyles, which pharmacists can address through targeted education. Studies have shown that pharmacist-led HPT care significantly reduces blood pressure, with meta-analyses revealing an average systolic blood pressure decrease of 7.6 mm Hg and diastolic blood pressure decrease of 3.9 mm Hg across 39 randomized controlled trials, in which pharmacists managed interventions in 23 studies [41]. This clinically meaningful reduction in systolic blood pressure can help prevent complications, including heart attacks and strokes. Although large-scale studies specific to Northern Cyprus are limited, pharmacist-led programs for managing chronic diseases have shown promising results [42]. For example, collaborative care between pharmacists and physicians in Turkey [43], Greece [44], and Libya [6] has improved patient outcomes, suggesting that similar models could be adapted to Northern Cyprus.

Conclusion: Pharmacists in Northern Cyprus are uniquely positioned to contribute to HPT management, in a healthcare system that faces physician shortages and increasing rates of chronic disease. By optimizing medication therapy, educating patients, providing monitoring services, and collaborating with other healthcare professionals, pharmacists can play a critical role in improving HPT control and reducing the burden of cardiovascular disease in Northern Cyprus. Northern Cyprus can optimize the role of pharmacists in managing chronic diseases, ultimately improving patient outcomes and reducing the burden of HPT on the healthcare system. By addressing systemic barriers and fostering a supportive environment for pharmacists, Northern Cyprus can enhance its healthcare capacity, improve chronic disease management, and lead to better health outcomes for its population. This advancement not only benefits patients but also reduces pressure on an overburdened healthcare system, ensuring more efficient and effective delivery of care.

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References

1. Sawicka KM, Szczyrek M, Jastrzębska I, Prasał M, Zwolak A, Daniluk J. Hypertension - The silent killer. Journal of Pre-Clin and Clinical Research. 2011; 5(2): 43-46. Corpus ID: 68380773.
2. Kario K, Okura A, Hoshide S, Mogi M. The WHO Global report 2023 on hypertension warning the emerging hypertension burden in globe and its treatment strategy. Hypertension Research. 2024; 47: 1099-1102. doi: 10.1038/s41440-024-01622-w
3. Miezah D, Hayman LL. Culturally tailored lifestyle modification strategies for hypertension management: A narrative review. American Journal of Lifestyle and Medicine. 2024; 6. doi: 10.1177/15598276241297675
4. Rafi IK, Rahman Md. A study about factors related to the degree of knowledge regarding hypertension in Kishoreganj, Bangladesh. Mediterranean Journal of Medical Research. 2025; 2: 1-5. doi. 10.5281/zenodo. 15091123
5. Berksel E, Özduran G, Süer HK, Aykaç A. A cross-sectional study of hypertension prevalence, awareness, treatment, ratios under control and related factors in Turkish Cypriot individuals living in North Cyprus. Cyprus Journal of Medical Science. 2024; 9(3): 173-179. doi: 10.4274/cjms.2024.2023-96
6. Aboulqassim NSS, Alterkawy AO, Alhosny BM, Alqtany FA, Alawamy OA, El.mabri ZM. Range of cardiovascular medications dispensing practice without a prescription: A cross-section study on pharmacists at community pharmacies in Libya. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2025; 5(2): 131-140. doi: 10.5281/zenodo15650755
7. Elfituri AA, Sherif FM. Novel clinical pharmacy practice: Extended role and improved competencies. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2022; 2(1): 1-3. doi: 10.5281/zenodo.6397651
8. Al-Sharif SM, Elmezughi SO, Sherif FM. Implementation of good pharmacy practice standards; a step forward in Libya's pharmacies. Iberoamerican Journal of Medicine. 2020; 2(4): 377-380. doi: 10.5281/zenodo.4095782
9. Charalampous P, Peletidi A. Exploring Cypriot pharmacists' perceptions about their role in cardiovascular disease prevention: A descriptive qualitative study. Journal of Research Pharm and Practice. 2021; 10(1): 23-29. doi: 10.4103/jrpp.JRPP_20_102
10. Soubra L, Elba G. Pharmacist role in hypertension management in the community setting: Questionnaire development, validation, and application. Patient Preference and Adherence. 2023; 17: 351-367. doi: 10.2147/ PPA.S394855
11. Goksin S, Abdi A, Alsaloumi L, Basgut B. Drug-related problems and health-related quality of life among chronic disease patients in a rural region of North Cyprus. Tropical Journal of Pharmaceutical Research. 2022; 21(10): 2183-2194. doi: 10.4314/tjpr.v21i10.20
12. Peletidi A, Nabhani-Gebara S, Kayyali R. The role of pharmacists in cardiovascular disease prevention: Qualitative studies from the United Kingdom and Greece. Journal of Research in Pharmacy Practice. 2019; 8(3): 112-122. doi: 10.4103/jrpp.JRPP_19_3
13. Emmerton LM, Smith L, LeMay KS, Krass I, Saini B, Bosnic-Anticevich SZ, Reddel HK, Burton DL, Stewart K, Armour CL. Experiences of community pharmacists involved in the delivery of a specialist asthma service in Australia. BMC Health Services and Research. 2012; 12: 164. doi: 10.1186/1472-6963-12-164h
14. Azhar S, Hassali MA, Ibrahim MIM, Masood I, Shafie AA. The role of pharmacists in developing countries: The current scenario in Pakistan. Human Resources for Health. 2009; 7: 54. doi: 10.1186/1478-4491-7-54
15. Smith F. Private local pharmacies in low- and middle-income countries: a review of interventions to enhance their role in public health. Tropical Medicine and International Health. 2009; 14(3): 362-372. doi: 10.1111/j.1365-3156 .2009.02232.x
16. Saavedra-Mitjans M, Ferrand É, Garin N, Bussierres J-F. Role and impact of pharmacists in Spain: a scoping review. International Journal of Clinical Pharmacy. 2018; 40(6): 1430-1442. doi: 10.1007/s11096-018-0740-7
17. El Hajj MS, Mahfoud ZR, Al Suwaidi J, Alkhiyami D, Alasmar AR. Role of pharmacist in cardiovascular disease-related health promotion and in hypertension and dyslipidemia management: A cross-sectional study in the State of Qatar. Journal of Evaluation in Clinical Practice. 2016. 22(3): 329-340. doi: 10.1111/jep.12477
18. Hudson SA, McAnaw JJ, Johnson BJ. The changing roles of pharmacists in society. International e-Journal of Science, Medicine, and Eduction.2007; 1(1): 22-34. doi: Nil.
19. Alssageer MA, Khattab BF, Bakouri AH. Physicians' attitudes, expectations, and experiences about clinical pharmacists and the barriers they have in developing a collaborative relationship with them. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2024; 4(3): 27-38. doi: 10.5281/zenodo.13324209

ISSN: 2789-1895 online
ISSN: 2958-3101 print

20. Tekin ÇS. The role of community pharmacists in public health and public health-related problems which they encounter. Istanbul Journal of Pharmacy. 2020; 50920: 142-148. doi: 10.26650/IstanbulJPharm.2019.0069
21. Jaaida NA, Alameer EM, Allafee AA. Assessment of current community pharmacist labeling practice: A simulated client approaches. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2024; 4(3): 1-6. doi: 10.5281/zenodo.13254724
22. Jamiu MO, Danjuma NM, Giwa A. Educational intervention on knowledge of hypertension and lifestyle/dietary modification among hypertensive patients attending a tertiary health facility in Nigeria. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2024; 4(1): 1-11. doi. 10.5281/zenodo.10535778
23. Marfo AFA, Owusu-Daaku FT. Exploring the extended role of the community pharmacist in improving blood pressure control among hypertensive patients in a developing setting. Journal of Pharmaceutical Policy and Practice. 2017; 10: 39. doi: 10.1186/s40545-017-0127-5
24. Li Y, Liu G, Liu C, Wang X, Chu Y, Li X, Yang W, et al. Effects of pharmacist intervention on community control of hypertension: A randomized controlled trial in Zunyi, China. Global Health: Science and Practice. 2021; 9(4): 890-904. doi: 10.9745/GHSP-D-20-00505
25. Lawal BK, Mohammed S, Alhaji AA, Maiha BB, Ladan MA, Ibrahim UI. Barriers and enablers of medication safety: A qualitative study from public hospitals in Kaduna State, Nigeria. Pharmacy Education. 2024; 24(1): 322-331. doi: 10.46542/pe.2024.241.322331
26. Eades CE, Ferguson JS, O'Carroll RE. Public health in community pharmacy: A systematic review of pharmacist and consumer views. BMC Public Health. 2011; 11(1): 582. doi: 10.1186/1471-2458-11-582
27. Rupp MT, DeYoung M, Schondelmeyer SW. Prescribing problems and pharmacist interventions in community practice. Medical Care. 1992; 30(10): 926-940. doi: 10.1097/00005650-199210000-00005
28. Sherif FM. Education and practice of pharmacy in Libya. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2022; 2(3): 1-2. doi: 10.5281/zenodo.7115078
29. Alssageer MA, Mohammed ES, Abd-Alsalm SA. Prevalence of comorbidity and polypharmacy among hospitalized elderly patients. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2022; 2(1): 53-61. doi. 10.5281/zenodo.6399521
30. Luisetto M, Ferraiuolo A, Fiazza C, Cabianca L, Edbey K, Mashori G, Latyshev OY (2025) Artificial intelligence in the pharmaceutical galenic field: A useful instrument and risk consideration. Mediterranean Journal of Medical Research. 2025; 2: 11-19. doi: 10.5281/zenodo.15259824
31. Ibraheim Alshaiby WM, Ishrayhah MA, Ghnaia MA, Elozi MK. Assessment of knowledge and attitude of pharmacists toward the side effects of anesthetics in patients with hypertension: a cross-sectional study. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2023; 3(4): 97-105. doi. 10.5281/zenodo. 10443250
32. Elmiladi SA, Elgdhafi EO. Prevalence of cardiovascular risk factors in Libyan patients with type 2 diabetes mellitus. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2023; 3(2): 27-33. doi: 10.5281/ zenodo.7877416
33. Ahmad K, Ang K, Wong P, Alimin N, Houng I, Chai Sh, Lawrence B, Chuo Yew C. Exploring patient's experiences with a pharmacy drive-through medication dispensing service: A qualitative study. Malaysian Journal of Pharmacy. 2023; 9: 16-21. doi: 10.52494/CDZM4052
34. Robinson JD, Segal R, Lopez LM, Doty RE. Impact of a pharmaceutical care intervention on blood pressure control in a chain pharmacy practice. Annals of Pharmacotherapy. 2010; 44(1): 88-96. doi: 10.1345/aph.1L289
35. Cheema E, Sutcliffe P, Singer DR. The impact of interventions by pharmacists in community pharmacies on control of hypertension: A systematic review and meta-analysis of randomized controlled trials. British Journal of Clinical Pharmacology. 2014; 78(6): 1238-1247. doi: 10.1111/bcp.12452
36. Khan MU, Shah S, Hameed T. Barriers to and determinants of medication adherence among hypertensive patients attended National Health Service Hospital, Sunderland. Journal of Pharmacy and Bioallied Sciences. 2014; 6(2): 104-108. doi. 10.4103/0975-7406.129175
37. Alssageer MA, Sherif FM, Mohammed ES, Abd Alsalm SA. Patterns of drug-prescribed and drug-related problems among hospitalized elderly patients. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences.2022; 2(2): 64-76. doi: 10.5281/zenodo.6780506
38. Sherif FM. Nicotine dependence and role of pharmacist in nicotine addiction control. Libyan international Medical University Journal. 2017; 2: 3-11. doi: 10.21502/limuj.002.02.2017
39. Cochran WG. Sampling Techniques. 3rd ed. Wiley; 1977. ISBN: 978-0471162407.

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40. Moore DS, McCabe GP, Craig BA. Introduction to the Practice of Statistics. 1st Ed., New York: W.H. Freeman and Company; 2017. ISBN-13: 978-1-4292-1623-4.
41. Chonko K, Axtell S, Mayzel B. Pharmacist hypertension management quality review at an ambulatory care clinic. Journal of Pharmaceutical Technology. 2022; 38(1): 31-38. doi: 10.1177/87551225211064240
42. Abdi A, Zarouri A, Alsaloumi L, Basgut B, Bilgen S. North Cyprus pharmacist's cognition and practice of pharmaceutical care. Journal of Pharmaceutical Research International. 2018; 21: 1-9. doi: 10.9734/JPRI/2018/39051
43. Ekincioglu AB, Demirkan K. Opinions of community pharmacists about collaboration with general practitioners: A descriptive pilot study after new legislation in Turkey. Turkish Journal of Pharmaceutical Sciences. 2018; 15(2): 212-218. doi: 10.4274/tjps.55376
44. Petrou P, Kelepouri P, Petrou C. Evaluating Greek pharmacists' attitudes and barriers regarding medicines adherence. Journal of Pharmaceutical Policy and Practice. 2024; 17(1): 2319746. doi: 10.1080/20523211.2024.2319746

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