

# Acceptance of Pharmacist's Extended Roles by other Healthcare Providers in the Arab Region: Review Article

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## Abstract

Pharmacists play critical roles in the primary healthcare system with other healthcare providers (HCPs). Extended pharmacists' roles and pharmaceutical services have been adopted in developed countries. However, the practice of the pharmacy profession in the majority of Arab countries in the Middle East and North Africa (MENA) region still depends on conventional activities with exceptions of providing new pharmaceutical care services in some countries such as UAE, Qatar, and Saudi Arabia. Healthcare professionals in the Arab region still have the old perception that pharmacists only dispense medications and may not always recognize the new emerging clinical roles of pharmacists and the various services that they can provide. The concept and practice of patient-centered pharmaceutical care are at the early stages in most Arab countries. Numerous studies have been done in the MENA region to explore the HCPs' acceptance of extended pharmacist's roles by investigating the perceptions, attitudes, experiences, and expectations of HCPs. Literature showed higher expectations of pharmacists in providing reliable drug information and in patient education. Arab Physicians were less comfortable with pharmacists recommending prescription use or non-prescription medicines to patients. Literature showed a communication gap and low interactions between pharmacists and physicians in the Arab region. However, studies showed highly positive attitudes toward collaborative relationships between professions and the roles of clinical pharmacists in healthcare teams in hospital settings.

**Keywords:** Arab world, Clinical pharmacy, Extended pharmacy services, Pharmaceutical care, Pharmacy practice

## INTRODUCTION

Centuries ago, medical doctors diagnosed, counseled, and prescribed medications to patients while pharmacists were only compounding and dispensing medicines. However, in the past few decades, the roles and duties of pharmacists have been extended from product-oriented towards patient-centered roles with more focus on dispensing, counseling, and even prescribing [1, 2]. Pharmacists in the old business model were under the authority of physicians who took full responsibility regarding dealing with patient care. The historical tension between both professions motivates pharmacists to strive to expand their roles. Pharmacists are considered the third largest healthcare provider after physicians and nurses, and they have significant roles in healthcare systems in developed countries [3]. Pharmacists gained recognition as "medication therapy experts" with advanced pharmacy degrees such as a doctor of pharmacy degree (PharmD), pharmacists gained the recognition as "medication therapy experts". Pharmacists have an essential role in the healthcare system in Collaboration with other healthcare providers (HCPs) as they are knowledgeable, skillful [4]. Several studies have shown the positive impact of pharmacists on patient outcomes [5-7]. A paradigm shift in pharmacy practice happened when pharmaceutical care was introduced by Hepler and Strand in 1990 and considered a primary pharmacy profession's primary mission [8].

According to the American College of Clinical Pharmacy (ACCP), clinical pharmacy is applying the philosophy of pharmaceutical care by utilizing pharmacist's skills and knowledge of drugs to provide patient care that optimizes medication therapy and disease prevention, wellness, and promotes health [9]. Qualified and well-trained clinical pharmacists can help in designing, implementing, and monitoring pharmacotherapeutic regimens and become an active part of the clinical team at hospitals work collaboratively with nurses and medical doctors to provide the ultimate and best pharmaceutical care services which assure the effective, efficient, economical use of medicines

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[1, 10]. Medication therapy problems can be resolved without causing harm to a patient when pharmacists collaborate effectively with nurses [11], while shared learning between pharmacists and nurses improved their professional working relationship [12]. Clinical pharmacists provide training and education at hospitals, and this role would add value to the clinical team by giving medicine information to HCPs [13].

### *Extended Pharmacy Roles*

Clinical pharmacists significantly affect patient safety in inpatient wards and ICUs [14, 15]. Extended pharmacy roles include repeat dispensing of chronic medication prescriptions, health assessment, disease state management, minor diseases prescribing, screening and monitoring, chronic disease management, medicines use reviews (MURs), review and monitoring of prescribing guidelines, immunization services, disease prevention, education, prescribing, and public health promotion such as smoking cessation campaigns [16-22]. In the USA, pharmacists are practicing extended roles including diagnostic testing for the monitoring and screening of diseases, interpreting and monitoring laboratory tests, administering immunizations, developing therapeutic plans, formulating clinical assessments, as well as prescription and management of medications for several diseases like diabetes, asthma, hypertension, and congestive heart failure [23]. Expanded prescribing rights given to pharmacists have been accepted more in Canada, the USA, and the UK [24, 25]. In the UK, pharmacists provide several pharmaceutical services such as supplying emergency contraception, dispensing methadone, running anticoagulant clinics, and providing health promotion and smoking cessation services [26]. In Scotland, community pharmacists provide pharmaceutical public health services, acute and chronic medication services, and minor ailment services (MAS) in which pharmacists help patients in self-care of self-limiting conditions [27]. Comprehensive medication safety systems and collaborative drug therapy management are other examples of advanced clinical services [28]. Extending pharmacists' roles could optimize drug therapy, enhance therapeutic outcomes, decrease physicians' workload, improve quality of care, reduce long-term healthcare costs, and reduce adverse drug reactions [23, 29-31]. Pharmacists in a study believed that they have more time than general practitioners, more accessible and approachable, and extending their roles help in reducing the workload on physicians [32].

### *Barriers to Advance Pharmacy Practice in the Arab Region*

Several Arab countries are sharing similar cultures, history, economies, challenges, and opportunities. Nothing significant had happened to the pharmacy profession's practice in most Arab countries. There is a lack of studies in the Arab region regarding the scope and depth of pharmacy practice [33]. Pharmacy practice is advancing slowly in most Arab countries with a lack in implementation of extended pharmaceutical care services. The majority of pharmacy

graduates work in the community sector, followed by other sectors such as hospitals, industry, drug regulation, and academia [34]. Regulatory restrictions, insufficient clinical training, lack of clinical educators and preceptors, acute shortage of highly qualified pharmacists, negative public image, a significant gap between education and practice, lack of using novel learning methods in pharmacy education, lack of standard practice guidelines, unrecognition of pharmacist's place in healthcare system, and lack of awareness of pharmacists' roles by other HCPs, and lack of remuneration are among the major barriers that face the advancement of pharmacy practice and extending pharmacists' roles in Arab countries [33-40]. Furthermore, a communication gap and low interactions between pharmacists and other physicians have been reported [41-44]. Community pharmacists can provide many medicines without a prescription (e.g., antibiotics) because of relaxed regulations in the Arab region [34]. However, there is a strong will in the Middle East (ME) to advance the practice of the pharmacy profession, considering clinical pharmacy a priority in several Arab countries as junior pharmacists are taking the initiative to provide new clinical services while most older pharmacists are still providing the traditional services [34]. Preparing highly qualified clinical pharmacists for the future is crucial as the demand for clinical pharmacy services in the hospital sector will increase in the Arab region [34]. A recent study proposed six strategies to overcome such barriers in the Arab region, which are: developing pharmacy education, improving and defining new learning outcomes of clinical pharmacy education, developing continuous professional development (CPD) programs, developing local and regional standards for pharmacy practice and education, strengthening interprofessional education (IPE) in the Arab region, and finally, create job opportunities for future pharmacists that meet their clinical knowledge and skills [33].

### *Physicians' Perceptions of Pharmacists' Extended Roles in the Arab Region*

several studies have been conducted to assess medical doctors' acceptance of pharmacists' clinical roles. Resistance of medical doctors to pharmacists' clinical roles has been reported [45, 46]. Physicians vary in their acceptance of expanded pharmacists' roles where some of them are more comfortable with pharmacist's clinical roles than others [47]. However, physicians still not comfortable with pharmacists participating in direct patient care and clinical rounds [48, 49]. In Sudan, one study assessed physicians' perception about the role of clinical pharmacists. It showed that almost all physicians agreed that the medication counseling role of clinical pharmacists added value to the clinical team, and their awareness of such a role was good [50]. A study in the UAE showed the same perceptions were almost of physicians, nurses, and pharmacists agreed that clinical pharmacists are an integral part of the clinical ward team and believed that clinical pharmacy is essential in pharmacy and therapeutic committees, while the majority of them perceived that clinical pharmacist could improve patient care and

minimize medication errors [51]. Similar results reported in another study as most physicians believed that clinical pharmacists play a key role in detecting clinical-related problems and act as a reliable source of general pharmacological information, but physicians were less comfortable with pharmacist's provision of direct patient care [52]. Another study in UAE has assessed the perceptions and expectations of HCPs in the emergency department (ED) and found that majority of participants agreed that availability of clinical pharmacists in ED would improve the patient care, while about two-thirds of them agreed that clinical pharmacists interventions would help in reducing healthcare costs, reducing the incident of adverse drug reactions, and in better dispensing and use of discharge medicines [53]. A qualitative study in Dubai to investigate physicians' perceptions of community pharmacists' roles has shown that all participants considered pharmacists as vital members of the healthcare team and working collaboratively with community pharmacists is enhancing patient's drug therapy outcomes. However, more than half of the informants still define community pharmacists as dispensers of medicines, and they were less comfortable with pharmacists' roles in providing direct patient care [54]. Another qualitative study in UAE to explore the physicians' attitudes towards primary care services provision in community pharmacies in UAE found that physicians tended to ask pharmacists only about availability of medicines and dosing regimens, considered pharmacists to be underused and business-oriented, and questioned pharmacists' willingness to adopt the patient-centered role. Furthermore, physicians in this study supported pharmacists' roles in providing counseling services to patients about medication use, checking prescription errors, drug interactions, or treatment duplications. Still, they asserted that physicians should provide information about diseases, and monitoring or screening services provided by community pharmacists should be done according to clear guidelines [55]. In Jordan, a study showed that >50% of physicians were comfortable with the roles of pharmacists in providing patient education but were not comfortable with the role of pharmacists in recommending prescription medicines to physicians or patients [49]. This study showed that Jordanian physicians who obtained their qualifications from other countries were more comfortable than those who got their medical qualifications from Jordan regarding the roles of pharmacists in monitoring health outcomes of therapeutic regimens, providing patient education, and recommending the prescription medicines use to physicians [49]. Furthermore, Tahaine *et al.* (2009) showed that Jordanian doctors who gained their medical qualification after 2000 were more accepting of pharmacists' roles in resolving drug-related problems (DRPs), assisting in selecting appropriate non-prescription medicines, advising them on the specific indication of each medicine. Two studies in Qatar and Kuwait have shown that physicians were more comfortable with pharmacists' expanded roles [48, 56]. However, Wilbur *et al.* (2012) reported that physicians in Qatar might not understand how pharmacists assure the appropriate and safe use of medicines. Still, they were comfortable with pharmacists'

roles dealing with medicines such as providing patient medication-related education and preventing prescribing errors more than expanded roles related to direct patient care such as monitoring of patient outcomes [57]. In Kuwait, physician's willingness to accept pharmacist roles is important towards involving Kuwaiti clinical pharmacists in direct patient care as seen in one study which showed that physicians were highly resistant towards the roles of clinical pharmacists in patient care, and about half of them agreed that clinical pharmacists are available during rounds [48]. In Sudan, Awad (2007) showed that physicians were comfortable with suggesting the use of prescription medications to physicians, monitoring outcomes of therapeutic plans, monitoring and designing pharmacotherapeutic regimens, and pharmacists preventing and detecting prescription errors, but were uncomfortable with recommending or suggesting medications to patients, treating minor diseases [41]. A recent study in Saudi Arabia assessed the perceptions and attitudes of HCPs towards clinical pharmacy services at one of the tertiary care hospitals. The study found that physicians and nurses who considered clinical pharmacists an integral part of the medical team were willing to cooperate to improve the quality of patient care in hospital settings and showed that clinical pharmacists should increase collaboration with medical doctors to improve their enrollment in direct patient care. However, pharmacists were less appreciative of clinical pharmacists' roles in direct patient care in comparison to nurses and physicians [58]. In this study, senior physicians and nurses had higher acceptance levels of clinical pharmacists' roles in direct patient care and as member of healthcare team in hospital settings compared with juniors. However, recent two studies in Sudan and UAE have shown contrary results as junior physicians and nurses had good acceptance and more appreciation to clinical pharmacists, while senior doctors showed less acceptance [52, 59]. Informants in this study affirmed that Sudanese physicians who practiced outside Sudan were more familiar with the concept of clinical pharmacy and clinical pharmacists' roles compared with those who practiced medicine in Sudan. In Lebanon, physicians in one study agreed that pharmacist is playing critical roles in patient care team and community pharmacists should expand their roles to provide a complete image of patients' pharmacotherapy. Furthermore, almost all physicians believed that collaborative working relationships between the two professions could improve patients' therapeutic outcomes. Physicians also favored pharmacist's role in educating and counselling patients on the proper and safe use of medicines, contacting physicians to discuss adjustments in patients' pharmacotherapy, providing health screening services. However, physicians were less favorable towards diagnosing illnesses, dispensing medications without prescription, suggesting alternative medicines, or even changing dosage forms [44]. In Egypt, a study has shown that physicians were more comfortable with pharmacists' roles in reporting adverse drug reactions, advising physicians on choosing the safe and cost effective medicines and in dose adjusting, but they were less comfortable with pharmacists'

roles in direct patient care including medication prescribing [60]. In Iraq, a study showed that most physicians were comfortable or relatively comfortable with the role of pharmacists in deleting prescriptions to prevent prescription errors, treating minor illnesses, and suggesting the use of prescription medicines to physicians. However, a lack of interaction and communication between hospital pharmacists and medical doctors has been reported in hospital settings, and pharmacists were still viewed by physicians as despisers of medicines rather than providers of pharmaceutical care services [43]. Physicians in Kuwait, Sudan, Jordan, and Saudi Arabia where not comfortable with role of clinical pharmacists having prescribing rights [49, 51, 61, 62].

### *Physicians' Expectations of Pharmacists' Extended Roles in the Arab Region*

Two studies from Lebanon and Jordan found that younger doctors expected more from pharmacists than older ones [44, 49]. However, an Egyptian study found no significant relationship between physicians' expectations of clinical pharmacists' roles and their gender, years of experience, or graduation year [60]. A Lebanese study showed that most physicians expected pharmacists as a member of the healthcare team, to abide by the pharmacy practice law, not to be a salesperson, not to be a dispenser only but to provide medication information to patients and other HCPs, not to prescribe medications, and not to diagnose or treat serious illnesses [44]. A study in UAE has shown that most physicians expected clinical pharmacists to play a vital role in providing patient counseling, minimizing medication errors, and identifying them as members of the healthcare team [52]. However, another qualitative study in UAE has shown that physicians' expectations of community pharmacists' roles did not match their experiences. They perceived pharmacists to act as dispensers of medications with product-oriented roles rather than providing clinical pharmacy services [54]. In Jordan, a study has shown that physicians had neutral to positive expectations about medication care and the increasing role of pharmacists and expected pharmacists to be well-informed pharmacology experts and educate patients about the appropriate and safe use of their medicines. Still, physicians disagreed on treating minor illnesses and prescribing roles [63]. Two studies from Sudan and Kuwait showed the same positive expectations of pharmacists' roles in patient education and as medication experts [41, 48]. Two studies in Jordan and UAE showed that most physicians expect clinical pharmacists to be available for consultation during courses [49, 51]. However, about one-third of physicians in a Kuwaiti study were not expecting pharmacists to be available during medical rounds for consultation services [48]. In Qatar, one study has shown that physicians had high expectations of pharmacists' responsibilities related to patient medication education and drug knowledge. In contrast, they had low expectations of pharmacists' roles in providing patient-oriented services, such as consultative roles [57]. A study in Jordan has shown higher expectations of pharmacists in hospitals as two-thirds

of physicians expected pharmacists to teach patients how to properly and safely use medicines. At the same time, about one-third of them agreed on pharmacists being available for consultation and expected pharmacists to help them in designing therapeutic regimens for their patients [49]. In Egypt, a study has shown that >50% of physicians expecting pharmacists to be a reliable source of general drug information, while about one-third agreed that pharmacists can be a reliable source of clinical information, advise physicians about the cost effectiveness of medicines, and are able to discover clinical-related problems. Furthermore, the majority of HCPs were expecting clinical pharmacists as important members in medical team, have crucial roles in minimizing medication errors, and they are providing medication counseling to patients [60]. In Iraq, a study which assessed physicians' expectations, perceptions, and experiences about the role of pharmacists in Iraqi hospital setting has shown that half of physicians expected pharmacists to educate patients about the appropriate and safe use of medicines, assist physicians in designing therapeutic plans for patients, and be responsible about resolving drug-related problems. Nevertheless, a minor percentage of physicians in this study expected pharmacists to know the specific indications for each prescribed medication or to be available for consultation during medical rounds [43].

### *Physicians' Experiences of Pharmacists' Extended Roles in the Arab Region*

In Kuwait, the majority of physicians in one study considered pharmacists as effectively applying their knowledge in practice [48]. In Sudan, Awad (2007) reported that physicians agreed that pharmacists were a reliable source of general drug information and informed them about the most cost-effective substitutes to prescribed medications. Physicians experienced pharmacists as they did not counsel patients. They were uncomfortable with the role of pharmacists in prescribing drugs to patients, even those suffering from minor illnesses. Furthermore, physicians had less agreement with pharmacists providing clinical drug information [41]. Similar results were found in four studies done in Jordan, Kuwait, and Qatar, where physicians didn't have positive experiences and were uncomfortable with pharmacists providing patient care such as medication prescribing for chronic illnesses or treating minor diseases [48, 49, 57, 63]. Tahaineh *et al.* (2009) showed that more than half of physicians agreed that pharmacist is a reliable source of drug information, while less than one-third of them agreed with pharmacists' roles in informing physicians about prescription problems or asking them to clarify therapeutic objectives. Another study in Jordan has shown that physicians had negative experiences regarding pharmacist's new roles in primary healthcare because pharmacists didn't have therapeutic knowledge and the clinical skills required to provide the core elements of pharmaceutical care, and they are not ready to take responsibility for solving drug-related problems they encounter [63]. A study in Lebanon pointed out that physicians had positive experiences with community



pharmacists as most participants contact pharmacists once a month, and about one-fifth of them contact them once a week. Almost all physicians in this study found the information provided by pharmacists to be accurate and clinically useful when they sought advice on drug availability, names, dosage, and cost [44]. An Iraqi study has shown that >50% of physicians had positive experiences with hospital pharmacists. They agreed or strongly agreed that pharmacists are a reliable source of clinical and general drug information. They were routinely counseling their patients on the appropriate and safe use of medications [43].

### Recommendations

Arab researchers in the MENA region are recommended to do further studies to understand how to reduce HCPs' resistance regarding accepting extended pharmacy roles in primary care settings. Pharmacy policymakers are also encouraged to proposed regulations that will help to advance pharmacy practice in that region.

### CONCLUSION

With all the rapid advancements in pharmacy education in ALSCs, pharmacy practice in most Arab countries still has the traditional historical model that pharmacists are the dispenser of medications written by the medical prescriber. The practice and concept of patient-centered pharmaceutical care are at the early stages in most Arab countries. Advancing pharmacy practice in Arab countries and effectively developing and introducing pharmaceutical care services requires understanding the collaborative relationship between pharmacists and other HCPs, and the perceptions of healthcare providers regarding their current experiences with pharmacy services and future expectations of pharmacists' roles. Numerous studies have been done in Saudi Arabia, UAE, Iraq, Qatar, Lebanon, Jordan, Egypt, Kuwait, Sudan, and Libya to investigate perceptions, attitudes, experiences, and expectations of HCPs about pharmacists' extended roles in the healthcare system. Literature showed that Arab pharmacists' roles are not acknowledged well by HCPs. Studies showed higher comfort levels with pharmacists detected drug-related problems and provided patient education. However, physicians were less comfortable towards pharmacists suggesting the use of prescription or non-prescription medicines to patients or even treating minor illnesses. Higher expectations of pharmacists as a reliable source of drug information and neutral to positive attitudes and expectations with pharmacists providing patient education were reported. Furthermore, physicians highly expected pharmacists to educate patients about the safe and appropriate use of medicines. However, low expectations were reported regarding pharmacists' role in providing counseling to patients. Literature showed promising results with a highly positive attitude toward collaborative relationships between Arab physicians and pharmacists and toward the roles of clinical pharmacists in healthcare teams in hospital settings. Studies also showed that pharmacists in

the Arab region are not ready to resolve drug-related problems (DRPs).

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