



REVIEW

Community pharmacy and the extended community pharmacist practice roles: The UAE experiences



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Abstract *Background:* The pharmaceutical care and 'extended' roles are still not practiced optimally by community pharmacists. Several studies have discussed the practice of community pharmacy in the UAE and have shown that most community pharmacists only counsel patients. However, UAE, has taken initiatives to allow and prepare community pharmacists to practice 'extended' roles. *Aim of the review:* The aim was to review the current roles of community pharmacists in Abu Dhabi Emirate, United Arab Emirates (UAE). *Objective:* The objective was to encourage community pharmacists toward extending their practice roles. *Methods:* In 2010, Health Authority Abu Dhabi (HAAD) surveyed community pharmacists, using an online questionnaire,

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on their preferences toward extending their counseling roles and their opinion of the greatest challenge facing the extension of their counseling roles. *Results:* Following this survey, several programs have been developed to prepare community pharmacists to undertake these extended counseling roles. In addition to that, HAAD redefined the scope of pharmacist roles to include some extended/enhanced roles. Abu Dhabi Health Services (SEHA) mission is to ensure reliable excellence in healthcare. It has put clear plans to achieve this; these include increasing focus on public health matters, developing and monitoring evidence-based clinical policies, training health professionals to comply with international standards to deliver world-class quality care, among others. Prior to making further plans to extend community pharmacists' roles, and to ensure the success of these plans, it is imperative to establish the views of community pharmacists in Abu Dhabi on practicing extended roles and to gain understanding and information on what pharmacists see as preferred change strategies or facilitators to change. *Conclusions:* In an attempt to adapt to the changes occurring and to the growing needs of patients and to maximize the utilization of community pharmacists' unique structured strategies are needed to be introduced to the community pharmacy profession.

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1. Introduction

1.1. Background

Decades ago, community pharmacists exclusively practiced certain roles such as compounding, marketing-selling, and dispensing medications. This gave them specialization and autonomy as healthcare professionals. However, rapid advances in technology, research, education, the changing cultural/socioeconomic status of many populations and the escalating needs and requirements of patients have fostered many changes which eventually led to the minimized and gradual beating of specialization of pharmacists in these traditional roles (Gilbert, 1998; Bush et al., 2009; Scahill et al., 2010; McDonald et al., 2010).

1.2. Summary of current knowledge

In an attempt to adapt to the changes occurring and to the growing needs of patients and to maximize the utilization of

community pharmacists' unique structured knowledge of a drug's safety profile (side effects, interactions and contraindications) (Bush et al., 2009; McDonald et al., 2010; Edmunds and Calnan, 2001; White and Latif, 2007), drug efficacy, patients' preferences, monitoring outcomes, and drug selection, the practice of new roles was introduced to the community pharmacy profession (Edmunds and Calnan, 2001; Paudyal et al., 2010; Bryant et al., 2009; Inch et al., 2005)

Several studies have demonstrated that extending community pharmacists' roles could result in many benefits for patients which include the following: improvement in the quality of care, optimization of drug therapy (Smith et al., 2011), a decrease in general practitioner workload, and a reduction in the long-term healthcare costs (Giberson et al., 2011; Dunlop and Shaw, 2002). The potential benefits to community pharmacists include improvements in their professional status and job satisfaction and in the way they are paid (Edmunds and Calnan, 2001; Bryant et al., 2009; Inch et al., 2005; Paudyal et al., 2011). However, possible disadvantages from

community pharmacists' role extension could increase workload and the development of a tense relationship between pharmacists and physicians (Helper and Strand, 1990).

Extending community pharmacists' roles started with the introduction of the concept of pharmaceutical care (Aldous, 2003). Consequently, community pharmacists' roles, in many countries, were extended to include disease state management, medicines use reviews (MURs) McDonald et al., 2010, health assessment, monitoring, and screening, chronic disease management (Scahill et al., 2010; Edmunds and Calnan, 2001), repeat dispensing (Edmunds and Calnan, 2001), minor ailments management schemes (Edmunds and Calnan, 2001), public health promotion and awareness (smoking cessation, sexual health) (Edmunds and Calnan, 2001; Inch et al., 2005), review and monitoring of prescribing guidelines, and development of schemes to promote the safe use of medicines in pregnancy and breastfeeding (Inch et al., 2005).

1.3. Specific problem

The new extended practice roles shifted the community pharmacy practice emphasis from a product oriented to a patient oriented one. The pharmaceutical care and 'extended' roles are still not practiced optimally by the community pharmacists. Numerous studies have discussed the practice of community pharmacy in the United Arab Emirates (UAE) and have shown that most community pharmacists perform only patient counseling.

1.4. Aim of the review

The aim was to review the current roles of community pharmacists in Abu Dhabi Emirate the capital of UAE.

1.5. Objective

The objective was to encourage community pharmacists toward extending their practice roles and stimulate the policy makers to foster laws to adapt the new changes.

2. Methods

We have performed a literature search looking for studies conducted on community pharmacy and extended roles of community pharmacists in UAE and in developed countries (Canada, New Zealand, United Kingdom-UK and United States of America-USA). The type of study design and reasons for choosing these studies and their suitability were all considered in the search criteria and inclusion thereafter. The type and precise details of the interventions for each study and respective group were defined for the included studies. The main factors that contribute to choice of interventions, inputs, predictors and respective validity and reliability were taken into account. Bias and other potential sources of bias, confounding, interactions, effect modifiers and imprecision were identified and reported.

The sequence generation, group allocation, group balance, equivalent treatment of participants/groups were rectified and compared with report review criteria. The sampling method, selection of participants/cases/groups and suitability of sampling method were matched for set of studies and collation.

The sample size calculation and suitability were compared between similar study designs. The sampling protocol including description and suitability of target/actual/sample population, inclusion and exclusion criteria for participants/cases/groups, and recruitment of participants/cases/groups were clearly retrieved for the review. The reported studies were checked for ethical matters such as informed consent, equity, privacy, confidentiality/anonymity, ethical approval, funding and conflict of interest.

Furthermore, method used for data collection, suitability of collection method and collection protocol (date, locations, settings, personnel, materials and processes) were reviewed. We also ensured/enhanced quality of measurement/instrumentation, management of non-participation, withdrawal and incomplete/lost data for the included studies.

3. Results

3.1. The international experience

One of the countries that took strong initiatives to extend community pharmacists' roles is the United Kingdom (UK). Pharmaceutical organizations have been involved in campaigns for 're-professionalization' of pharmacists - redefining their role to go beyond dispensing (McDonald et al., 2010; Inch et al., 2005). The UK divided services provided by community pharmacists into essential, enhanced, and advanced (Rapport et al., 2010). One example of an 'essential service' is repeat dispensing of chronic medication prescriptions (Edmunds and Calnan, 2001). 'Enhanced services' include minor ailments prescribing and involvement in smoking cessation programs (Bradley et al., 2008). 'Advanced services' include the MURs: a service provided to patients to review their use and understanding of their medications thereby improving their knowledge of their medications. It also involves a check performed by pharmacists to identify, discuss, and resolve poor or ineffective use of medications. In addition to that, the pharmacist identifies side effects and drug interactions that may influence patient compliance and therefore affect the clinical and cost effectiveness of the prescribed medications (McDonald et al., 2010).

Even though the reclassification of medications has restricted the supply of many medicines by pharmacists without a prescription, it has also allowed some prescription only medications (POMs) to be supplied only by pharmacists as a pharmacy medicine (PM). For example, medications for acute minor illnesses have been reclassified from POMs to PMs; similarly medications for more serious long-term illnesses-like Simvastatin (primary-secondary prevention of coronary events) and Sumatriptan (migraine treatment) - and medications for treating irritable bowel syndrome, chlamydia, and arthritis, have been reclassified to PMs (Bush et al., 2009; McDonald et al., 2010; Paudyal et al., 2010). Patient Group Directions (PGDs) have also been introduced to allow pharmacists to supply certain POMs without a prescription within strict protocols according to local requirements or to supply medicines for indications not covered by the marketing authorizations for other available over-the-counter-OTC medicines (Bush et al., 2009; Paudyal et al., 2010).

In Scotland, a new community pharmacy contract was implemented in 2005 allowing community pharmacists to

present patients with more services via the Minor Ailment Service (MAS), the Chronic Medication Service, the Acute Medication Service, and the Pharmaceutical Public Health Service (Paudyal et al., 2010; Inch et al., 2005). The MAS is a service provided by community pharmacists to assist patients in self-care for minor ailments (Paudyal et al., 2010). Paudyal et al. (2010), have defined these terms by referring to the World Health Organization's (WHO) definition of self-care (what people do for themselves to establish and maintain health, and to prevent and deal with illnesses) and to the Royal Pharmaceutical Society of Great Britain's (RPSGB) definition of minor ailments (self-limiting conditions requiring little or no medical intervention, such as cough, cold, and indigestion).

In New Zealand, the pharmaceutical society launched The Ten Year vision for Pharmacists in 2004 (Scahill et al., 2010) which called for pharmacists to practice enhanced cognitive pharmaceutical services (CPS). Enhanced CPS are defined as 'professional services provided by pharmacist, using their skills and knowledge to take an active role in contributing to patient health through effective interaction with both patients and other health professionals' (Roberts et al., 2008).

In the USA, pharmacists now practice 'new' roles such as administering immunizations, point-of-care testing (diagnostic testing performed at or near the site of patient care for the screening and monitoring of diseases), prescribing (initiate, adjust, or discontinue) and managing medications for the treatment of diseases such as dyslipidemia, congestive heart failure, coronary artery disease, diabetes, asthma, hypertension, and end-stage renal disease; ordering, interpreting and monitoring laboratory tests, formulating clinical assessments and developing therapeutic plans, providing care coordination and other health services for wellness and prevention of disease, and providing health maintenance information and education (Giberson et al., 2011). In addition to that, pharmacists in the USA can choose to obtain extra accreditation to become specialized; examples of pharmacist specialties include nutrition support, oncology, psychiatric, ambulatory care, diabetes educator, advanced diabetes management, infection control professional, professional in healthcare quality, professional in healthcare information and management systems, and chronic care professional (Giberson et al., 2011).

In the UK, Canada and the USA, prescribing rights have been extended to community pharmacists (Abu Ruz et al., 2012). There is a growing increase in the acceptance of changed roles for pharmacists as prescribers and more expanded prescribing rights have been granted in these countries.

3.2. Community pharmacy in the Middle East

The community pharmacy practice in most of the countries in the Middle East is very similar to that of the United Arab Emirates (UAE), where pharmaceutical care and 'extended' roles are still not practiced optimally or not practiced at all (White and Latif, 2007; Hasan et al., 2011). However, some of these countries, especially the UAE, have taken initiatives to allow and prepare community pharmacists to practice 'extended' roles (Hasan et al., 2012).

Hasan and co-researchers have conducted many researches related to the community pharmacy profession in the UAE (Hasan et al., 2012, 2013). Due to the importance of their work, a short summary of the methodology used by them

and possible limitations should be introduced (this is not a comprehensive critical appraisal of their work). Their first study investigated the community pharmacists' workforce characteristics and the perceived barriers to practicing professional (enhanced) services (Hasan et al., 2012). Their second paper presented information collected from their first study about the type and frequency of services currently provided in community pharmacies in the UAE (Hasan et al., 2012). In their latest study, they developed, validated, and then used a tool to assess patient (public in all the seven emirates of UAE) satisfaction with current community pharmacy services (Hasan et al., 2013).

In their first and second studies, questionnaires were administered by hand to community pharmacies, in all seven emirates of UAE. Collecting information from such a diverse population may have allowed results to be generalized; however, they did not take into account the diversity in healthcare systems in each of the seven emirates which may have needed further investigations. Calculating the sample size was based on the number of community pharmacies (not the number of community pharmacists). After sample size calculation, pharmacies were chosen by systematic random sampling; then one pharmacist from each pharmacy was chosen to respond. How or on what basis this pharmacist was chosen was not made clear. Nevertheless, if the pharmacist was chosen based on convenience/availability in the pharmacy at time of administration, then generalization of results may be questioned (Smith, 1997).

Questionnaires were administered by undergraduate students in Sharjah University in Sharjah Emirate (UAE). In these studies some of the 'enhanced' services were investigated such as adverse drug reaction and medication errors identification and reporting and counseling in an open area- and are actually 'essential' services to be provided by all community pharmacists in Abu Dhabi (Health Authority Abu Dhabi, 2009a, 2009b; Health Authority Abu Dhabi CME/CPD NEWS, 2010). That is why the provision of these services may be different in Abu Dhabi from the rest of the other six emirates, and further research on the provision of these services particularly in Abu Dhabi would have been necessary.

In their latest study investigating public views of community pharmacist services, the authors used a new tool to measure satisfaction which still needs further validation. The sample was chosen according to convenience. Even though random sampling in this case was difficult (Hasan et al., 2012) the researchers realized that generalization of results should be approached cautiously (Smith, 1997). Questionnaires were also delivered by hand but via research assistants. Qualitative methods of data collection were not used in any of the three researches. The investigators were the first in the UAE to investigate these subjects using survey methods. They have covered the topic of community pharmacy services from different perspectives (community pharmacists and the public), therefore, are leading researchers on this topic in the UAE. Calculations of sample size and justification for the choice of the questionnaire administration method were explained well. Presentation and discussion of results were comprehensive and unbiased.

3.3. Community pharmacy in Abu Dhabi

Abu Dhabi is the capital of the UAE. The UAE consists of seven emirates (Abu Dhabi, Dubai, Fujairah, Umm

Al-Quwain, Ras Al-Khaimah, Ajman, and Sharjah) whose healthcare systems differ from each other noticeably. The community of Abu Dhabi consists of local/national Emirati citizens (16.5% of the population) and expatriates (people not holding the UAE citizenship- non-UAE nationals- but residents in the UAE) from different countries such as Arab, India, Pakistan, Philippines and other Asian countries, United Kingdom, Russia, United States of America (USA) and many other Europeans (Hasan et al., 2012). Health services, provided by private or government facilities, and medications dispensed to expatriates are paid for by insurance companies. All types of insurance schemes must cover payment for basic healthcare services and medications prescribed by doctors. However, the range of payment coverage is 20–100% which differs as per each insurance scheme.

For UAE nationals, healthcare services and medications are paid for by the National Health Insurance Company-Thiga and Daman. The Department of Finance, Government of Abu Dhabi, is responsible for the financial reconciliation of all healthcare services offered to UAE nationals and paid for by Thiga-Daman (Health Authority Abu Dhabi, 2010c).

In Abu Dhabi, the Health Authority of Abu Dhabi (HAAD) and the Ministry of Health (MOH) are responsible for regulating the healthcare system (Authority Abu Dhabi and Book 1: Legislation establishing the health sector. [online]. Abu Dhabi, 2005). In Dubai, the Dubai Health Authority (DHA) and the Ministry of Health (MOH) regulate the healthcare system, the rest of the emirates (northern) are regulated by the MOH alone. The government healthcare facilities in Abu Dhabi are managed by Abu Dhabi Health Services Company (SEHA). Community pharmacies are all privately owned, and they are either small independently-owned shops, chain franchised shops, or pharmacies belonging to hospitals or medical centers (Hasan et al., 2012).

Pharmacies in the UAE are open for 7 days per week with an average working day of 13 h. Most community pharmacists (80%) work 6 days per week for 8–10 h per day (Hasan et al., 2012). Most community pharmacists are initially qualified from India, Egypt, the UAE, Philippines, and Jordan (Hasan et al., 2012). For a pharmacist to practice in Abu Dhabi, a licensing examination must be passed first. The license can only be renewed every year after attendance of a certain number of continuing medical education (CME) hours. This was put as a requirement to improve and maintain the competency of community pharmacists and to ensure all community pharmacists in Abu Dhabi have the same skills and standards of practice (this is important to overcome the diversity in their learning backgrounds) (Health Authority Abu Dhabi, 2009c; Dameh, 2009).

4. Discussions

4.1. Pharmacy and pharmacist regulatory affairs

The pharmacy profession and practice in Abu Dhabi are governed by the UAE Federal Law number 4 and by circulars regularly released by HAAD and the MOH. The law states that community pharmacy owners must be UAE citizens without specification that they should be pharmacists. A recent study has shown that 70% of community pharmacies were owned by non-pharmacists (Hasan et al., 2012). The UAE

law defines the pharmacy profession as the preparation, composition, manufacturing, packing, selling, or distribution of any medicine or pharmaceutical preparation for the protection or treatment of humans or animals from diseases. According to the law, pharmacists were not allowed to supply any medicine or pharmaceutical preparation without a prescription (all medicines were classified as POM or controlled drugs) (Health Authority Abu Dhabi, 2010d) or practice any medical or nursing works, except for works related to first aid (United Arab Emirates Federal Law number 4, 1983).

Since 2005, many changes have been implemented to the community pharmacy profession in Abu Dhabi. One of these changes was the reclassification of several medicines from POM to pharmacist only medicines (PH-OM), over the counter pharmacy medicines (OTC-P), and medicines sold in pharmacy and non-pharmacy outlets medicines (OTC-G) (Health Authority Abu Dhabi, 2011). In Abu Dhabi unlike the other emirates, there are regular 'surprise' inspections on the practice of community pharmacists. As a result, all rules are strictly followed. For example, in some emirates oral contraceptives and antibiotics (POMs) can sometimes be sold by the pharmacist without a prescription- an act that would rarely happen in Abu Dhabi.

A recent document was released by HAAD which clearly outlined the professional competencies and roles of pharmacists for the first time. It highlighted the importance of pharmaceutical care and encouraged its practice, [Appendix II] (Health Authority Abu Dhabi, 2010b). Several studies have discussed the practice of community pharmacy in the UAE, but not in Abu Dhabi specifically. These studies have shown that around three-quarters of the pharmacies in the UAE dispense fewer than 100 prescriptions (75%) and respond to fewer than 100 requests for OTC medicines (69%) per day (Hasan et al., 2012). Specialized compounding for prescriptions occurs in 32% of community pharmacies (Hasan et al., 2012). Dispensing is mostly carried out by a pharmacy technician/assistant, under the supervision of a pharmacist, to allow pharmacists to fulfill administrative and managerial roles (Dameh, 2009). Such roles include monitoring and reviewing controlled drugs prescriptions, double checking prescriptions for dispensing errors, dealing with insurance companies' approvals and rejections, keeping track of stock and self-life expiry (Hasan et al., 2012).

Studies have also shown that most community pharmacists in the UAE only counsel patients regarding the dosage and frequency of use of the medications they are purchasing; they occasionally check for and advise on adverse reactions and drug interactions, and usually only when asked by the patient (Dameh, 2009). Results of a survey questionnaire distributed to community pharmacists showed that 29% of the respondents always offered patient information leaflets or other written or printed material and 33% always used small precautionary labels (for example take with food and do not drive) when counseling patients. Counseling in an open area was always provided by 28% of community pharmacists in the UAE, while private counseling in a designated closed area was always provided by 11% (Hasan et al., 2012). These were all considered by this review as 'enhanced professional' roles.

The most recent study done by Hasan et al. (2013) used a newly validated tool to assess patient satisfaction with community pharmacy services in the UAE. Results showed that

members of the public were not satisfied with the counseling services; a small percentage rated 'very good' or 'excellent' for the explanation they receive about their medication (41%), the information provided about side effects of medications (16%), and the interest shown by community pharmacists to help them make best use of their medication (30%).

Community pharmacists have limited immediate access to up-to-date resources such as the British National Formulary (BNF) [Hasan et al., 2012](#). The turnover rate of pharmacists in the community pharmacy sector is high. Researchers have suggested this may affect continuous care delivery to patients ([Hasan et al., 2012](#)). The community pharmacy services provided in the UAE were considered by some researchers as 'traditional or product-focused with minimal or negligible pharmaceutical care provided' ([Hasan et al., 2013](#)).

4.2. Health Authority Abu Dhabi (HAAD)'s initiatives

In 2010, HAAD surveyed community pharmacists, using an online questionnaire, on their preferences toward extending their counseling roles. They were asked questions on their: demographic information, current practice, current pharmacy layout, perspectives on future pharmacy licensing requirements, support for reimbursement of additional services they provide, interest in extending their counseling roles for the management of different health conditions (hypertension, diabetes, hyper-lipidemia, asthma, others), and their opinion of the greatest challenge facing the extension of their counseling roles (see [Appendix A](#)-section 6 for full survey questionnaire).

The results of this survey were not published but we were able to obtain excerpts of it through personal communication with HAAD employees. Following this survey, several programs have been developed to prepare community pharmacists to undertake these extended counseling roles. Examples of such programs include the Pharmacist Asthma Educator Program, the Diabetes Management Educator Program, and the American Pharmacist Association Immunization course for pharmacists, and the Smoking Cessation Training ([Health Authority Abu Dhabi NEWS, 2011a, b; DMPR, 2010](#)).

In addition to that, HAAD redefined the scope of pharmacist roles to include some extended/enhanced roles such as: screening, point of care testing and adult vaccination services, medicines use management, and counseling patients on preventive health and lifestyle management strategies ([Health Authority Abu Dhabi NEWS, 2011a](#)). HAAD's mission is to ensure reliable excellence in healthcare. It has put clear plans to achieve this; these include increasing focus on public health matters, developing and monitoring evidence-based clinical policies, and training health professionals to comply with international standards to deliver world-class quality care, among others ([Health Authority Abu Dhabi, 2011c](#)). HAAD has implemented part of its plans by extending the range of services provided by community pharmacists to match some of those provided by community pharmacists throughout the world. There is a wider recognition that pharmacists are indispensable in monitoring drug therapy, medication reconciliation, and providing responsible pharmaceutical care ([Gulf Medical University. College of Pharmacy, 2011](#)). In advance of making further plans to extend community pharmacists' roles, and to ensure the triumph of these plans, it is important

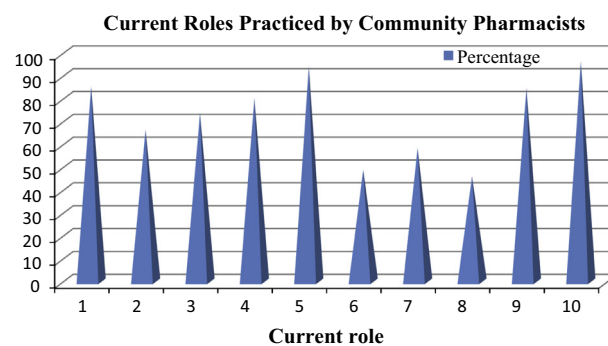


Figure 1 Percentage of community pharmacists practicing current roles. **Key:** **Current role** – 1: Counseling patients about prescribed medications. 2: Detecting and preventing drug medication errors. 3: Detecting and preventing prescribing errors. 4: Patient disease education. 5: Explaining to patients use of medical devices. 6: Public health promotion. 7: Medicines information to health professionals. 8: Reporting Adverse Drug Reactions (ADRs), interactions, prescribing errors. 9: Reviewing national circulars and international updates. 10: Selling and counseling on over the counter (OTC) medicines. **Reference:** Unpublished study.

to establish the views of community pharmacists in Abu Dhabi on practicing extended roles and to gain understanding, to explore roles and barriers and obtain in depth information on what pharmacists see as preferred change strategies or facilitators to make the change ([Roberts et al., 2005](#)).

5. Conclusions

In an attempt to adapt to the changes occurring and to the growing needs of patients and to maximize the utilization of community pharmacists' unique structured strategies and health system reforms are needed to be introduced to the community pharmacy profession. There remains more rigorous research needed to explore the extended roles of community pharmacists and provide more evidence-based interventions to inform the new practice.

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Appendix A

See [Fig. 1](#).

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