

## Original Research

# Perception of community pharmacists towards the barriers to enhanced pharmacy services in the healthcare system of Dubai: a quantitative approach

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### ABSTRACT\*

**Background:** In many developing countries, pharmacists are facing many challenges while they try to enhance the quality of services provided to patients approaching community pharmacies.

**Objective:** To explore perception of community pharmacists in Dubai regarding the obstacles to enhanced pharmacy services using a part of the results from a nation-wide quantitative survey.

**Methods:** A questionnaire was distributed to 281 full-time licensed community pharmacists in Dubai. The questionnaire had 5 inter-linked sections: demographic information, information about the pharmacy, interaction with physicians, pharmacists' current professional role, and barriers to enhanced pharmacy services.

**Results:** About half of the respondents (45.4%, n=90) agreed that pharmacy clients under-estimate them and 52.5% (n=104) felt the same by physicians. About 47.5% (n=94) of the respondents felt that they are legally unprotected against profession's malpractice. Moreover, 64.7% (n=128) stated that pharmacy practice in Dubai turned to be business-focused. In addition, 76.8% (n=252) found that one of the major barriers to enhanced pharmacy services is the high business running cost. Pharmacists screened tried to prove that they are not one of the barriers to optimized pharmacy services as 62.7% (n=124) disagreed that they lack appropriate knowledge needed to serve community and 67.7% (n=134) gave the same response when asked whether pharmacy staff lack confidence when treating consumers or not.

**Conclusions:** Although being well established within the community, pharmacists in Dubai negatively perceived their own professional role. They stated that there are number of barriers which hinder optimized delivery of pharmacy services like under-estimation by pharmacy clients and other healthcare professionals, pressure to make sales, and high running cost.

**Keywords:** Community Pharmacy Services; Professional Practice; Attitude of Health Personnel; Pharmacies; Pharmacists; United Arab Emirates

### INTRODUCTION

Most recently, pharmaceutical care has adopted a new set of assumptions, concepts, and values that have made the pharmacy practice patient-centered rather than merely product-oriented.<sup>1-3</sup> In order to create better understanding on the role of community pharmacists in Dubai, United Arab Emirates (UAE), a bigger study was done to explore perceptions of stakeholders which was divided into two categories: outer and inner environments. The outer environment resembles perceptions of general public and the inner one focuses on reflecting ideas and beliefs of healthcare professionals including physicians, nurses and pharmacists themselves on the expected role of community pharmacists in Dubai. Exploring pharmacists' perceptions on their role within the community pharmacies is a challenging task because pharmacists face many constraints in many countries. Some challenges pharmacists come through are technical like shortage of time to offer services, lack of licensed pharmacists, and the elevating expenses on the business<sup>4</sup> and other challenges are personality traits related to patient care like lack of confidence, fear of new responsibility, paralysis in the face of ambiguity, need for physician's approval, and risk aversion.<sup>5-7</sup> The aim of this study is to utilize a part of the results collected through a nation-wide survey to explore the perception of community pharmacists towards the barriers to enhanced pharmacy services in Dubai.

### METHODS

A questionnaire was developed depending on 3 bases: the qualitative part of the same study, extensive literature review, and a survey of Australia's community pharmacists.<sup>8</sup> The questionnaire had five sections which included demographic information, information about the pharmacy, interaction with physicians, pharmacists' current professional role, and barriers to enhanced pharmacy services. Each interlinked section of the questionnaire included a set of statements for which the participants were asked to respond. There were questions which required choosing among different choices by checking the box beside the chosen answer. By doing so, the answer is considered 'yes' and by leaving the box un-checked, the answer is considered 'no'. To indicate the level of agreement, a 5-point Likert scale using the options "strongly disagree", "disagree", "not sure", "agree", and

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“strongly agree” was used in question 17 of the questionnaire and a 5-point Likert scale using options “most of the time”, “often”, “sometimes”, “very rarely”, “never” was used in question 18 (Interested readers might obtain a copy of the questionnaire from the corresponding author). There are many examples in the literature to support the use of a five-choice scale. The questionnaire was pre-tested and modified as appropriate before use.

The primary version of the questionnaire consisting of 38 items was viewed by experts in the same area. They were asked to assess the questionnaire by providing their overall opinion and by listing the questions in order according to its relevance and importance. Statements with more relevance and importance were highlighted. To assess face validity of the questionnaire, thirty participants were randomly approached for a pilot study. In addition, these participants were asked to express their views on the significance, wrathfulness, and simplicity of each question and to identify which questions they would point out to be removed so to make the questionnaire precise and brief. In addition to this, the participants were also welcomed to suggest comments on the questions whether they are understandable or not. Most of them suggested simplifying the questions. The reliability test was applied on all the variables comprising all domains. The reliability of the tool was estimated on the basis of Cronbach’s Alpha ( $\alpha=0.76$ ).

This study population consisted community pharmacists operating in the city of Dubai. Sample size was calculated using an electronic sample size calculator namely ‘Raosoft’ with a confidence interval of 95% and a margin of error of 5%.<sup>9</sup> A sample size of 225 was calculated by referring to the total number of licensed pharmacists working in Dubai which was 540 in 2013.<sup>10</sup> By adding 25% drop-out rate, the sample size has increased to 281. Questionnaires were distributed by hand to 281 community pharmacists working in Dubai. Data was obtained through visiting community pharmacies in DHA control area and the pharmacists working full time in the pharmacies who agreed to participate were given 2 choices; either to answer the questionnaire and handle it on the spot or handle it later on. Pharmacists who chose the second option were visited 1 week later to collect the completed questionnaires.

Survey was conducted over a period of 3 months from December 1, 2013 till February 22, 2014. Prior to each participated community pharmacy’s visit, pharmacists were informed about the survey’s nature, objectives, and way of administration and a verbal consent was given to them before execution of the study took place..

Questionnaires were filled and collected. Results were exported to the SPSS, version 20.0 to test and analyze the data collected.<sup>11</sup>

Non-parametric statistical analysis and appropriate descriptive statistics for the demographic data (mean and standard deviation for age) were performed. Frequency and descriptive analysis

**Table 1: Community pharmacists’ demographic characteristics**

Variable	Frequency	%
Age (mean=34.5; SD=9.59)		
21-30	36	18.2
31-40	84	42.4
41-50	54	27.3
51-60	20	10.1
61+	4	2
Gender		
Male	134	67.7
Female	64	32.3
Nationality		
Indian	146	73.7
Pakistani	14	7.1
Egyptian	18	9.1
Syrian	8	4
Pilipino	2	1
Palestinian	2	1
American	2	1
Jordanian	2	1
Sudanese	2	1
Iraqi	2	1
Country of qualification		
India	142	71.7
UAE	12	6.1
Syria	4	2
Pakistan	14	7.1
Turkey	2	1
Egypt	14	7.1
Philippines	2	1
Jordan	4	2
Sudan	2	1
Iraq	2	1
Highest qualification		
Diploma	34	17.2
B. Pharm.	144	72.7
M. Pharm.	12	6.1
Pharm. D.	8	4

were done on the demographic information that was collected including age, gender, nationality, country of initial qualification, and pharmacist’s highest qualification. Chi-square test was used to test the significance of association between the independent variables (demographic information) and the dependent variables (barriers to optimized pharmacy services). Statistical significance was accepted at p-value of <0.05.

## RESULTS

During a period of three months, 281 questionnaires were distributed and 198 questionnaires were filled and returned giving a response rate of 70.46%. By reducing the added drop-out ratio and depending of the actual sample size of 225 questionnaires, the actual response rate was 88%.

### Demographic characteristics of respondents

Demographic characteristics of the respondents are detailed in table 1. Mean age of the respondents was 34.5 years and the SD= 9.59 years. Among the respondents, 67.7% (n=134) were men and 32.3% (n=64) were women. The highest percentage of respondents’ age bracket was in 31-40 years old (42.4%, n=84) followed by 41-50 years old range (27.3%, n=54). Almost three quarters of the community pharmacists participated came from India (73.7%, n=146) with Indian qualification in pharmacy (71.7%, n=142).

Variable	N	%
<b>Position in pharmacy</b>		
Sole proprietor	18	9.1
Partner proprietor	10	5.1
Salaried manager	4	2
Pharmacist in-charge	114	57.6
Second pharmacist	52	26.3
<b>Pharmacy type</b>		
Individual pharmacy	114	57.6
Member of a group	84	42.4
<b>Prescriptions dispensed in one business week</b>		
0 to 10	12	6.1
10 to 50	82	41.4
50 to 100	50	25.3
100+	54	27.3
<b>Availability of dispensary computer in pharmacy</b>		
Not available	34	17.2
Barcode reader	136	68.7
Regular internet use	106	53.5
Regular email use	112	56.6

### Information about the pharmacy

Details about the participating pharmacies are elaborated in table 2. More than half of the participants 57.6% (n=114) were pharmacists in-charge followed by second pharmacists who constituted 26.3% (n=52). Among the respondents, 57.6% (n=114) work in individual pharmacies which are private community pharmacies owned by one or more than one owners and 42.4% (n=84) work in pharmacies which belong to a chain or a group of pharmacies. In one business week which consists 6 working days in the private sector, 41.4% (n=82) of the respondents dispense 10-50 prescriptions to patients and 27.3% (n=54) dispense more than 100 prescriptions. Most of the respondents 68.7% (n=136) used their dispensary computer as barcode reader in addition to regular email use (56.6%, n=112) and general internet use (53.5%, n=106).

### Barriers to enhanced pharmacy services

Pharmacists' perceptions regarding the obstacles which hinder optimized delivery of pharmacy services in Dubai are detailed in Table 3. Opinions were separated among respondents as 43.5% (n=86) strongly disagreed/disagreed when asked whether they face shortage of time to handle consumers or not. However, 41.5% (n=82) of the respondents had different opinion. The value was found statistically significant with respect to age, nationality, and country of qualification respectively (p=0.001, 0.001, 0.028). The division in perceptions continued in the second question when they were asked whether there are shortage of licensed pharmacists in Dubai or not as almost half of the respondents (49.5%, n=98) agreed/strongly agreed but 37.4% (n=74) strongly disagreed/disagreed. The value was found statistically significant with respect to age, gender, nationality, and country of qualification respectively (p=0.028, 0.001, 0.001, 0.016). Among the respondents, 45.4% (n=90) agreed/strongly agreed that customers underestimate them but 39.4% (n=78) did not feel the problem. The value was found statistically significant with respect to nationality, country of qualification, and highest qualification respectively (p=0.001, 0.001, 0.003). Majority of the pharmacists screened (62.7%, n=124) strongly disagreed/disagreed that they lack appropriate knowledge needed to serve community. The value was found statistically highly significant with respect to age, nationality, and country of qualification respectively and similar p-value (p=0.001). Most of the respondents (67.7%, n=134) strongly disagreed/disagreed that pharmacy staff lack confidence when treating consumers. The value was found statistically highly significant (p=0.001 for all variables) with respect to most of the independent variables namely age, nationality,

S. No.	Responses *					p-value **				
	SD n (%)	D n (%)	NS n (%)	A n (%)	SA n (%)	Age	Gender	Country of		Highest qualification
								Nationality	qualification	
1	12 (6.1)	74 (37.4)	30 (15.2)	72 (36.4)	10 (5.1)	0.001	0.336	0.001	0.028	0.445
2	14 (7.1)	60 (30.3)	26 (13.1)	84 (42.4)	14 (7.1)	0.028	0.001	0.001	0.016	0.790
3	4 [2]	74 (37.4)	30 (15.2)	62 (31.3)	28 (14.1)	0.101	0.232	0.001	0.001	0.003
4	30 (15.2)	94 (47.5)	36 (18.2)	34 (17.2)	4 [2]	0.001	0.484	0.001	0.001	0.085
5	24 (12.1)	110 (55.6)	30 (15.2)	32 (16.2)	2 [1]	0.001	0.771	0.001	0.001	0.001
6	30 (15.2)	82 (41.4)	32 (16.2)	46 (23.2)	8 (4)	0.002	0.067	0.001	0.001	0.231
7	4 [2]	46 (23.2)	28 (14.1)	74 (37.4)	46 (23.2)	0.156	0.883	0.001	0.001	0.002
8	8 (4)	52 (26.3)	44 (22.2)	78 (39.4)	16 (8.1)	0.016	0.382	0.045	0.020	0.004
9	8 (4)	34 (17.2)	52 (26.3)	84 (42.4)	20 (10.1)	0.005	0.100	0.001	0.020	0.008
10	8 (4)	48 (24.2)	46 (23.2)	66 (33.3)	30 (15.2)	0.001	0.001	0.001	0.048	0.007
11	6 (3)	34 (17.2)	54 (27.3)	74 (37.4)	30 (15.2)	0.055	0.337	0.001	0.001	0.004
12	14 (7.1)	62 (31.3)	46 (23.2)	62 (31.3)	14 (7.1)	0.003	0.065	0.003	0.001	0.215
13	18 (9.1)	80 (40.4)	48 (24.2)	40 (20.2)	12 (6.1)	0.001	0.121	0.001	0.001	0.013
14	6 (3)	32 (16.2)	32 (16.2)	92 (46.5)	36 (18.2)	0.029	0.126	0.004	0.063	0.001
15	2 [1]	14 (7.1)	30 (15.2)	100 (50.5)	52 (26.3)	0.042	0.018	0.004	0.001	0.237
1= Shortage of time for pharmacist 2= Shortage of pharmacists and/or employees 3= Customers do not recognize pharmacists' importance 4= Lack of appropriate knowledge by pharmacists 5= Lack of confidence by pharmacy staff 6= It is not felt by pharmacists to be part of their job 7= The salary level is not appropriate for pharmacists 8= There is no right protection for pharmacists' malpractice						9= Under-estimation by other healthcare professionals 10= High pressure on pharmacists to generate sales 11= Lack of financial rewards from enhanced pharmacy services 12= Pharmacy colleges do not offer significant practical training before graduation 13= Lack of interpersonal and management skills by pharmacists 14= Pharmacy practice turned to be a business 15= High running cost expenses in addition to sales bonus stoppage				

\* Responses included all respondents \*\* Chi Square  
SD= strongly disagree, D= disagree, NS= not sure, A= agree, SA= strongly agree

country of qualification, and highest qualification respectively. More than half of the respondents (56.6%, n=112) strongly disagreed/disagreed that they are separated from their profession. The value was found statistically significant with respect to age, nationality, and country of qualification respectively (p=0.002, 0.001, 0.001). About 60.6% (n=120) of the respondents agreed/strongly agreed that they are receiving lesser compensation packages than they deserve but almost a quarter (24.2%, n=50) strongly disagreed/disagreed. The value was found statistically highly significant with respect to nationality, country of qualification, and highest qualification (p=0.001, 0.001, 0.002). Majority of the respondents (47.5%, n=94) felt that they are legally unprotected against profession's malpractice. However, about a third of the respondents did not feel that. The value was found statistically significant with respect to age, nationality, country of qualification, and highest qualification respectively (p=0.016, 0.045, 0.020, 0.004). Among the respondents, 52.5% (n=104) agreed/strongly agreed that other healthcare professionals under-estimate them. The value was found statistically significant with respect to age, nationality, country of qualification, and highest qualification respectively (p=0.005, 0.001, 0.020, 0.008). About half of the respondents (48.5%, n=96) agreed/strongly agreed that there is a rising pressure on them to reach high sales targets but 28.2% (n=56) strongly disagreed/disagreed. The value was found statistically significant with respect to all independent variables namely age, gender, nationality, country of qualification, and highest qualification respectively (p=0.001, 0.001, 0.001, 0.048, 0.007). Among the respondents, 52.6% (n=104) agreed/strongly agreed that they are unappreciated financially for the enhanced pharmacy services they offer. The value was found statistically significant with respect to nationality, country of qualification, and highest qualification respectively (p=0.001, 0.001, 0.004). When respondents were asked about whether pharmacy colleges in the United Arab Emirates (UAE) effectively contribute in training undergraduate pharmacy students and preparing them to professional lives or not, the answer was equally divided into agreement and disagreement (38.4%, n=76) and the rest (23.2%, n=46) were not very sure. The value was found statistically significant with respect to age, nationality, and country of qualification respectively (p=0.003, 0.003, 0.001). Almost half of the respondents refused that they lack inter-personal and management skills in their pharmacies. The value was found statistically significant with respect to age, nationality, country of qualification, and highest qualification respectively (p=0.001, 0.001, 0.001, 0.013). Majority of the respondents (64.7%, n=128) agreed/strongly agreed that pharmacy practice in Dubai turned to be business-focused. The value was found statistically significant with respect to age, nationality, and highest qualification respectively (p=0.029, 0.004, 0.001). Finally, more than three quarters of the respondents (76.8%, n=252) found that one of the major barriers to enhanced pharmacy services is the high business running cost in addition to

convicting free-of-charge bonus which was given upon purchasing certain quantity of medicines from vendors and was adding extra profit to pharmacies. The value was found statistically significant with respect to age, gender, nationality, and country of qualification respectively (p=0.042, 0.018, 0.004, 0.001).

## DISCUSSION

The response rate achieved (70.46%) is adequate and found to be within the response rates of similar studies done on community pharmacists where the response rates ranged from 20% to over 90%.<sup>12</sup>

### Information about the pharmacy

Results showed that most of the respondents were salaried, employed pharmacists in charge or second pharmacists (83.9%, n=166). This finding showed that most pharmacists in Dubai are not owners of the pharmacies they work in. According to the UAE's federal law number 8 of 1984 concerning commercial companies, the owner of any business in the UAE must be a UAE national in any 'establishment' and any expatriate investor can only own a maximum share of 49% in a 'limited liability company' inside the cities of the UAE where as there are different rules and regulations for free zone areas.<sup>13</sup>

Most of the pharmacies screened (82.8%, n=164) had dispensary computer with multiple uses like barcode reader (68.7%, n=136), regular internet use (53.5%, n=106), and regular email use (56.6%, n=112). Switching the approvals on dispensing medicines listed in medical insurance claims from phone calls to online tools forced many community pharmacies to regularly use the dispensary computer for other purposes.

### Barriers to enhanced pharmacy services

This part of the questionnaire was represented in a separate table containing 15 statements which required respondents to measure their level of agreement or disagreement using 5-point Likert scale. The statements were intentionally dispersed despite the fact that they were classified into 3 categories which represent the most observed barriers to enhanced pharmacy practice in Dubai:

- Current pharmacy practice situation: Mixed response was extracted when pharmacists were asked whether they face shortage of time to handle patients or not and whether they see a phenomenon of shortage of licensed pharmacists or not. In fact, number of licensed pharmacists in Dubai is still far below the recommended pharmacist-population ratio by WHO which is 1:2000.<sup>14</sup> The current ratio in Dubai is 1:4104 and this means that there is a severe shortage of registered pharmacists in Dubai. Pharmacists agreed that they are currently getting less salary and they are legally unprotected. This finding is consistent with researches that were done elsewhere.<sup>15,16</sup> Community pharmacists in Dubai agreed that they are not financially rewarded for their enhanced pharmacy services and this situation is different in few countries.<sup>17</sup>

- Community pharmacists' traits: Pharmacists in Dubai disagreed that they lack knowledge related to medicines and confidence while handling patients. In addition, pharmacists refused to state that they lack inter-personal and management skills. A research by Axworthy pointed that pharmacy managers with master of business administration degree had a significantly higher overall mean perceived skill level than managers in all other 'education' categories. Managers with a Bachelor of Science degree in pharmacy had a significantly lower overall mean perceived skill level than those with a Bachelor of Science degree in pharmacy plus 'other' degrees.<sup>18</sup>

- External barriers: Community pharmacists in Dubai were found frustrated from facing a kind of under-estimation from physicians (52.5%, n=104) and sometimes from their own customers (45.4%, n=90). Many factors could be the reasons behind such phenomena. These findings are proportionate with results by other researchers that were done elsewhere.<sup>19,20</sup> Other external factors which were agreed by respondents to be symbolizing major barriers to enhanced pharmacy practice in Dubai are pressure by pharmacy owners imposed on community pharmacists to generate sales and the un-balanced training requirements offered to undergraduate pharmacy students by domestic pharmacy colleges in the UAE. The later barrier was discussed in a review by Hisham in Saudi Arabia and particularly in College of Pharmacy At King Saud University where pharmacy students in their curriculum were required to spend one training semester in a hospital pharmacy. Students were trained in inpatient and outpatient pharmacy, intravenous preparations, and other elective practice experiences.<sup>21</sup> This was found inappropriate for preparing pharmacy students to the up-coming professional lives. For the same reason, special training program was tailored to suit the new market challenging requirements.

#### Limitations of the study

This study only included full-time and licensed community pharmacists operating within the boundaries of Dubai. Exclusion of part-timers and trainee pharmacists might be a study limitation. Moreover, study results cannot be generalized to the whole country as it was restricted to the city of Dubai.

#### CONCLUSIONS

Community pharmacists' profession in Dubai was found to be well established and organized. However, respondents pointed that they are facing several barriers to enhanced pharmacy services which ranged to be minor to severe related to current pharmacy practice situation, community pharmacists' traits, and external factors. Future

studies might be required to explore solutions to the current constrains.

#### CONFLICT OF INTEREST

There are no conflicts of interest.

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#### PERCEPCIÓN DE LOS FARMACÉUTICOS COMUNITARIOS SOBRE LAS BARRERAS A LOS SERVICIOS FARMACÉUTICOS AVANZADOS EN EL SISTEMA DE SALUD DE DUBÁI: UN ABORDAJE CUALITATIVO

##### RESUMEN

**Antecedentes:** En muchos países en desarrollo, los farmacéuticos comunitarios están enfrentándose a retos cuando intentan elevar la calidad de los servicios proporcionados a los pacientes que visitan las farmacias comunitarias.

**Objetivo:** Explorar la percepción de los farmacéuticos comunitarios en Dubái sobre los obstáculos de los servicios farmacéuticos avanzados utilizando parte de los resultados de una encuesta nacional.

**Métodos:** Se distribuyó el cuestionario a 281 farmacéuticos registrados a tiempo entero en farmacias comunitarias de Dubái. El cuestionario tenía 5 secciones inter-ligadas: información demográfica, información sobre la farmacia, interacción con los médicos, actual papel profesional del farmacéutico, y barreras hacia los servicios farmacéuticos avanzados.

**Resultados:** Alrededor de la mitad de los que respondieron (45,4%, n=90) estaba de acuerdo en que los clientes les sub-estimaban y el 52,5% (n=104) sentían lo mismo de los médicos. Sobre el 47,5% (n=94) de los respondentes sentía que están desprotegidos legalmente contra las malas prácticas profesionales. Más, el 64,7% (n=128) afirmó que el ejercicio de la farmacia en Dubái se volvió hacia el negocio. Además, el 76,8% (n=252) encontró que la mayor barrera para los servicios farmacéuticos avanzados es el alto grado de costes de gestión del negocio. Los farmacéuticos encuestados trataron de probar que ellos no son una de las barreras para la optimización de los servicios farmacéuticos, ya que el 62,7% (n=124) estaba en desacuerdo con la falta de conocimientos necesarios para servir a la comunidad, y el 67,7% (n=134) dio la misma respuesta cuando se le preguntó si el personal de la farmacia carecía de confianza cuando trataba a los consumidores.

**Conclusiones:** Aunque están bien establecidos en la comunidad, los farmacéuticos de Dubái percibían negativamente su propio papel profesional. Afirmaron que hay varias barreras que dificultan la provisión óptima de servicios farmacéuticos, como la sub-estimación por los clientes de la farmacia y otros profesionales de la salud, la presión hacia vender, y los altos costes de gestión.

**Palabras clave:** Servicios de Farmacia Comunitaria; Práctica Profesional; Actitud del Personal de Salud; Farmacias; Farmacéuticos; Emiratos Árabes Unidos

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