Migration Letters

Volume: 19, No: S5 (2022), pp. 1486-1498

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Attitudes of Community Pharmacists toward Expanding their Prescribing Role and Contributing Factors

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Abstract

Background: Community pharmacists are highly accessible and patients struggling to access a family physician or nurse practitioner may seek care from a community pharmacist. There is a growing international development in community pharmacists' and authority prescribing role. The study aims: To assess the attitudes of community pharmacists toward expanding their prescribing role and to identify any contributing factors. Methods: A cross-sectional study was conducted in KSA. A validated self-administered questionnaire addressing participants' attitudes toward expanding the prescribing role of community pharmacists, the preferred model, barriers and training need was used. Results: In general, 62.3% of community pharmacists exhibited neutral attitudes toward expanding their prescribing role, and 79.4% favored the supplementary prescribing model. The key drivers for expanding prescribing were a better use of community pharmacists' skills (88.7%) and drug knowledge (79.4%). However, the most perceived barriers were inadequate training in patient assessment and monitoring (75%) and diagnosis of disease (73%). Female respondents had higher mean attitude scores (65.5± 6.79) than males (63.1± 7.89),(p= 0.021, t=2.321). Respondents with a Pharm .D degree had higher mean attitude scores (68.0 ±9.19) than those with a postgraduate degree (66.3±7.59) or those with bachelor of pharmacy (63.6±6.88, p= 0.010, F=4.709). Conclusion: Although overall attitudes of community pharmacists toward prescribing role were neutral,

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there were some gaps in their knowledge and skills. Community pharmacists, therefore, require further and urgent training in certain areas together with addressing the identified barriers.

Keywords: *Attitudes; Community pharmacists; Expanding prescribing; Independent prescribing; prescribing models.*

Introduction

The impact has been worse in developing countries, where a delayed public health response led by limited resources and overworked health care force has led to confusion (1). The role of both community and hospital pharmacists has been multifold. Pharmacists have not only served to ensure medication management and patient adherence but have also played an important role in providing essential services, providing frontline health care workers with drug information regarding any treatments, developing remote health care services, and developing awareness of and providing infection control measures (2-4).

Community pharmacists (CPs) have an exceptional position in the healthcare system, and their role is designed by organizational, economic, and regulatory factors that may seem diverse worldwide (5-7). Despite the variances in the pharmacists' responsibilities in different circumstances, their main duties include safeguarding that a patient's drug therapy is managed appropriately and effectively, dispensing of drugs, and patient counseling (8, 9). A significant body of evidence shows that pharmacists are moving from the old-style roles of only dispensing and counseling the medications to more advanced services and pharmaceutical care (10-13).

It is argued that there is a need to shift the pharmacy sector from product- oriented to patient-oriented through the expanding of pharmacists' active role in patient-centered care, collaborative drug therapy management, and comprehensive medication safety systems (8, 14). The reviewed literature demands for expanding the access of healthcare delivery to all people around the world (15). To this end, enabling healthcare professionals (HCPs) groups to prescribe with doctors was seen as a future strategy (16). That is, prescribing authority for these groups including the pharmacists was considered a significant development in the global healthcare system, especially with the growing needs of patients and increased prevalence of chronic and infectious diseases (13, 17).

It has become clear that increasing the pharmacists' roles can benefit patients and pharmacists alike, as it is predictable to improve the quality of care to patients, reduce long-term healthcare costs, optimize drug therapy, and to increase access to healthcare services, thus providing higher quality of patient-centered care (18, 20). For pharmacists, expanding their role is expected to improve their professional status and authority leading to better use of their skills and knowledge, as well as increasing job satisfaction, self-confidence, and a decrease in physicians' workload (13, 21, and 22).

Expanding the role of pharmacists according to their responsibility can be practiced in three key forms. The first form is the independent prescribing (IP), in which the pharmacist, who is the clinical management decision-maker, focuses on assessing conditions of diagnosed or undiagnosed conditions and without previous permission from other medical practitioners (23). The second form is through supplementary prescribing (SP), which includes an agreed partnership between doctors or dentist, a patient and a supplementary prescriber who, in turn, can prescribe within the patient's specific clinical management plan (23).

The third form is the collaborative prescribing model, in which "a collaborative practice agreement between one or more physicians and pharmacists, that the qualified pharmacists

working among the context of a defined protocol are permitted to assume professional responsibility for performing patient assessments; ordering drug therapy related laboratory tests; administering drugs; and selecting, initiating, monitoring, continuing, and adjusting drug regimens (13)." Internationally it seems that there is a disparity in the adoption of these models. One or more of these three models was/were implemented in the United States (USA), Canada, and the United Kingdom (UK) (16, 25).

In the UK, a supplementary prescribing model including pharmacists was adopted in 2003; after that, the independent prescribing model was implemented for the supplementary prescriber within specific criteria such as training, testing, and certification (21, 26). In the USA, pharmacists are involved with doctors in a collaborative drug therapy management model (13). In a less developed context, significant differences in the pharmacy profession appear to present compared to the developed ones. In KSA, as in many Arab countries, pharmacists can prescribe medications listed as Over the Counter (OTC) medications (27). The role of pharmacists in KSA has been expanded over the past 20 years from merely dispensing and marketing of drugs to include more clinically-oriented roles (28).

In support of this transition, KSA has established education programs specific to the pharmacy profession, such as a 6-year Pharmacy Doctor (Pharm. D) program and Masters Programs in clinical pharmacy (28). These programs imply a great emphasis on pharmacists' clinical roles and the expansion of their duties in KSA (8, 29). To date, however, the available data on the expansion of CPs role using models of prescribing have mostly came from the developed countries (30, 31). Moreover, the literature about attitudes toward pharmacists prescribing and related factors in the Arab world is limited.

Thus, decision and policy makers face a dilemma of a shortage data to enhance and expand future community pharmacists' role in prescribing. Given the differences in healthcare system, education, curricula, and population characteristics, the cross applicability to the community pharmacists in KSA might have limitations. Consequently, this study aims to explore community pharmacists' attitudes toward their role in supplementary and independent prescribing as expanded roles of pharmaceutical professional practice in KSA, and to identify the contributing factors for their attitudes.

Methods

A descriptive cross-sectional study was conducted in Makkah, KSA, during the period from January to April 2022 using a self-administered questionnaire. Moreover, ethical approval for the study was obtained from the University. Eligible participants were licensed pharmacists working in community pharmacies in KSA. Participation in the study was voluntary and was no risk involved to the participants.

The questionnaire to measure the attitudes of CPs toward expanding their role was developed based on Hoti et al. (2010) (32). The study explores the pharmacists' attitudes toward expanding their prescribing role in Australia with some modifications to suit the target population and pharmaceutical health system. The questionnaire was administered in Arabic language since Arabic is the mother tongue for the CPs in KSA. The translation from English to Arabic was done using the guideline for the Process of Cross-Cultural Adaptation of Self-Report Measures to ensure the translation equivalency and appropriateness of the questionnaire (33).

To ensure face validity, expert panels consisting of five experts having previous experience in pharmacy practice revised the author's modifications on the questionnaire. Accordingly, some question adjustments were made to the questionnaire to improve the validity and answer the

research questions of the study. Then, the researcher reviewed all the suggestions and integrated them into the pre-final version of the questionnaire. The pre-final research questionnaire was pilot tested with a random selection sample of (n=30) of community pharmacists.

The purpose of the pilot study was to make sure that: the statements were understandable, the language was simple and straightforward, determine the time needed for data collection, length of a questionnaire, and any difficulty faced when completing the survey. All the questionnaires at this stage were excluded from the final analysis of the main study. After piloting modifications were made in the questionnaire, the researcher tested the extent of the paragraphs' internal consistency depending on the pilot sample (n=30). The Cronbach's alpha value for the whole questionnaire was satisfactory (0.81).

The final version of the questionnaire consisted of 10 sections exploring various domains related to CPs' attitudes toward expanding their roles. The participants' responses to these sections used Likert scale answers,i.e. "Agree," "Neutral," "Disagree,"in addition to Yes/no questions. The first section included questions sought to obtain respondents' demographic and job characteristics. The second section covered CPs' attitude toward expanding pharmacy professional services and pharmacists prescribing, while the third section was related the CPs' attitude to their clients' reaction to ward the expansion of their prescribing role. The fourth section was about CPs' attitude to the drivers of expanding the CPs' prescribing role.

The fifth section was about prescribing models the CPs' preferred. The sixth section was about the attitude of CPs' toward the barriers of expanding pharmacist prescribing, with the section also containing two (yes/no) questions; the first to know if they thought CPs should have expanded prescribing rights, and the second one to know if the CPs wished to take an expanding role in prescribing. The seventh section contained two sub-sections for expanding prescribing using the supplementary model and the independent model. Under each subsection, a number of chronic conditions were listed.

The eighth section had one (yes/no) question to know if the CPs would need further training. If answered yes, a further three sub-sections followed, the first regarding six therapeutic topics they might need training in. The second sub- section addressed training areas and the third sub-section addressed training issues such as doctors' supervision, continuing education, specializing in clinical areas, and specialist registration. The ninth section concerned the CPs' attitude toward the implications of pharmacists prescribing on pharmacy infrastructure and, finally, the tenth section focused on the CPs' attitude to expanding their roles in the management of minor ailments.

The sample size was determined using OpenEpi, based on the total number of Pharmaceutical during the time of this study. The minimum sample size needed was 201; this was calculated to achieve 95% level of confidence and 5% marginal error. However, the researcher added 20% (n=44) on the minimum number and distributed randomly a number of 245 questionnaires; 14 pharmacists refused to fill in the questionnaire, with a response rate of 94.3%. Additionally, 27 questionnaires which had missing data were excluded from the statistical analyses. The final number of the analyzed questionnaires without missing data was 204.

Once participants agreed to participate verbally, the questionnaires were distributed to them to be filled out. During data collocation, participants were recruited with the aim of heterogeneity regarding gender, years of work experience, and age. The questionnaire took about 10 to 15 minutes to complete, was collected directly or dropped, and picked up later after being completed by the pharmacists who did not have time to fill it there and then.

Statistical Package for Social Sciences (SPSS) database for Windows version 28 was used for data entry and analysis. Any missing data were excluded from the analysis. Descriptive statistical analysis was used to summarize demographic data and responses to the questionnaires (frequencies and percentage for categorical variables, means and standard deviations were also calculated). The statistical t-test was applied to compare the means of Likert scale variables where the independent variables had two categories (e.g., gender and owner of the pharmacy).

Analysis of Variance (ANOVA) was used to compare the means of Likert scale variables where the independent variables had more than two categories (Age, years of experience, highest degree achieved, and type of graduation country).In addition, the appropriate post hoc test, which is the least significant difference (LSD), was applied. A total attitude score was computed out of 100 to indicate the respondents' attitudes. The attitude scores were interpreted into three categories as follows: from 0 to 33.3 indicates a negative attitude, from 33.4 to 66.6 indicates a neutral attitude and from 66.7 to 100 indicates a positive attitude.

Results

The CPs mean age was 30± 6.95 years. A little more than half of the respondents were females (53.9%). Slightly half of the respondents were registered as pharmacists for less than five years (52.9%). About 78.4% of the respondents held a Bachelor's degree in pharmacy, 12.3% had bachelor's degree of Pharm. D and 9.3% had Masters or PhD.

Table (1) shows the results showed that 34.4% of the CPs agreed that the pharmacy profession needs to expand its scope of professional services. Furthermore, 42.7% of the CPs viewed themselves in the future as having more expanded prescribing responsibilities. However, the results also revealed that 44.6% are satisfied with the limited current prescribing role. With regard to customer reaction for pharmacists prescribing, almost two thirds of CPs reported that the customers would accept pharmacists with an expanded prescribing role (68.6%). CPs also perceived that the customers would have safer access to their medications if pharmacists were prescribers (65.2%), and believed that customers may find it easier to access pharmacists than GPs and, therefore, would prefer CPs to have an expanded role (67.6%). Additionally, 81.9% agreed that the customers would trust pharmacists as prescribers (Table 1).

Table (2) shows the way CPs believe pharmacists should assume the expanded prescribing role was examined and about 79.4% of the CPs agreed on the supplementary model as the most suitable model for expanding the prescribing role. The second most agreed-upon model was to expand the prescribing based on the current OTC drug list and additional limited drug list (63.2%), whereas36.8% of CPs supported the independent prescribing model. More than half of all respondents (53.4%) did not agree that expanding the prescribing role should be limited only to the hospital pharmacists (Table 2).

Table (3) shows the analysis revealed the driving factors that would encourage pharmacists' prescribing. More than two thirds of CPs, 77.0%, perceived expanded prescribing responsibilities to be a direction that the pharmacy profession should adopt to ensure an advanced role in healthcare. Respondents also highly agreed (79.4%) that they had the required drug knowledge that qualifies them to assume more prescribing responsibilities. Furthermore, 88.7% of CPs felt that prescribing will enable better use of pharmacists' professional skills, while 78.4% of the CPs demonstrated that expanding prescribing will increase the pharmacy profit, (Table 3).

Table (4) shows that inadequate training in diseases' diagnosis (if this was the pharmacist's responsibility) was the highest reported barrier to expanded prescribing amongst the CPs

(73%). Similarly, 75% of the respondents agreed that pharmacists have inadequate training to assess and monitor patients. More than half of the CPs (52%) believed that expanding prescribing can lead to confusion regarding the GPs and pharmacists' roles from the public side, while 44.1% agreed that CPs may have a commercial interest in prescribing. Inadequate facilities in pharmacies could be a barrier for prescribing as reported by 46% of CPs, while 65.2% viewed the increased potential of litigation as another barrier for expanding prescribing for pharmacists (Table 4). In relation to the above, when respondents were asked, "Do you think pharmacists should have expanded prescribing rights?" almost all of them answered "yes", 97.1%.

Table (1): The attitudes of study participants towards customers' reaction to expanding their prescribing role (n=204)

Item	Disagree	Neutral	Agree
	%	%	%
Customers would accept pharmacists with an expanded prescribing role.	4.4	27.0	68.6
Customers would trust pharmacists as prescribers.	2.5	15.6	81.9
Customers would have safer access to their medications if pharmacists were prescribers.	5.9	28.9	65.2
Customers find accessing their GP too difficult and may prefer pharmacists to have an expanded prescribing.	7.8	24.6	67.6
Customers appreciate pharmacists' advice and prefer CP as prescribers.	3.4	14.7	81.9

Table (2): The attitudes of study participants to the way they believe pharmacists should assume expanded the prescribing role (n=204)

Item	Disagree %	Neutral %	Agree %
Independent prescribing model.	35.3	27.9	36.8
Supplementary prescribing model.	13.2	7.4	79.4
Pharmacists should be able to prescribe from a limited drug formulary, which would include the current OTC list and additional limited drugs list.	12.3	24.5	63.2
I believe any possible future expanded prescribing should be done by Hospital Pharmacists only.	53.4	20.1	26.5

Table (3): The attitude of study participants towards the drivers for expanding pharmacists prescribing (n=204)

Item	Disagree	Neutral	Agree
	%	%	%
I believe customers would have better access to their medications if pharmacists were prescribers.	5.9	26.5	67.6
Expanded pharmacist prescribing would ease the burden from overloaded GP's and hence improve the functioning of our health system.	2.9	25.0	72.1
An expanded prescribing responsibility is a direction that the Pharmacy profession should be headed to secure a more important role in health care.	3.4	19.6	77.0

Item	Disagree	Neutral	Agree
	%	%	%
Pharmacists are highly regarded by the community, and therefore, they should assume more prescribing.	6.9	22.5	70.6
Pharmacists have the necessary drug knowledge to assume more prescribing	5.4	15.2	79.4
Pharmacists have the necessary patient assessment skills to assume more prescribing responsibilities.	6.8	27.0	66.2
Pharmacist prescribing enables better use of pharmacist's professional skills.	1.5	9.8	88.7
Expanded prescribing will contribute to increased Pharmacy profits.	6.4	15.2	78.4

Table (4): The attitudes of study participants to the barriers that could limit expanded prescribing (n=204)

Item	Disagree	Neutral	Agree
	%	%	%
Inadequate training in the diagnosis of disease (if this were the pharmacist's responsibility).	2.5	24.5	73.0
Inadequate training in patient assessment and patient monitoring.	5.9	19.1	75.0
Potential for a reduction in the quality of patient care.	27.0	29.4	43.6
Potential for increased patient costs.	39.2	30.8	30.0
Potential for increased hospital admissions.	27.5	41.1	31.4
Conflict of interest with pharmacists acting both as prescribers and dispensers.	26.0	25.0	49.0
Pharmacists' lack of time.	38.2	30.4	31.4
Increased confusion amongst the public as to the role of GP's and pharmacists.	20.1	27.9	52.0
Potential decrease in the quality of current services offered by pharmacists.	32.4	29.9	37.7
Pharmacists having a commercial interest in prescribing.	24.0	31.9	44.1
Inadequate facilities within pharmacies to allow pharmacist prescribing.	27.0	27.0	46.0
Increased likelihood of litigation.	9.3	25.5	65.2

The over whelming number of respondents (97.1%), who answered yes to expanding pharmacists' prescribing, reported "Pain management" as the most chronic condition in which pharmacists should have an expanded prescribing role in the form of supplementary prescribing (83.3%). Most CPs (79.2%) mainly believed that pharmacists can prescribe a limited range of antibiotics using a supplementary prescribing model. Asthma and other respiratory conditions were the third common condition reported by respondents. In the form of an independent prescribing role, CPs showed a moderate agreement on expanding prescribing for conditions of pain management and antibiotics (61.6%, 52.5%), respectively.

The majority of CPs (91.7%) highlighted the need for more training to expand their prescribing role. Three areas were highly ranked as top training needs for expanding the prescribing role by the respondents: clinical pharmacology, the pathophysiology of conditions, physiological changes and drug response in different age groups. Additionally, the CPs agreed the need to be trained in the following areas: principles of diagnosis (72.1%), evidence-based practice (72.7%), principles and methods of patient monitoring (78.0%), and public health issues (70.5%). More than a third of CPs reported no need for a specialist registration at regulation

bodies (43.3%) and no need for supervision by a medical practitioner (42.7%). Moreover, only 19.7% of CPs agreed with the need for training on "Demonstration of relevant Continuing Education that ensures their prescribing skills are kept to date".

Table (5) shows the majority of CPs (84.3%) believed that the current staff arrangements in the pharmacy can support expanded pharmacist prescribing. But 81.4% of them agreed on the need to create a separate quiet consulting area for pharmacist prescribing. Furthermore, 75% focused on pharmacists' need for an additional IT resource in the pharmacy to support pharmacist prescribing. On the other hand, only 40.7% of the respondents believed that pharmacists' independent prescribing should not occur in a community pharmacy (Table 5).The results revealed that 62.3 % (n=127) of the respondents' total attitudes scores were higher than 33.4 and less than 66.6, which represents neutral attitudes, whereas 37.7 % (n=77) of the respondents' total scores were higher than 66.7 and less than 100, which is interpreted as a positive attitude.

Table (6) shows the overall mean of respondents' attitude toward their expanding role in prescribing was 64.4 ±7.39. The attitudes of community pharmacists toward the drivers for expanding prescribing had the highest mean domain score by respondents (72.99±11.54). This was followed by the domain of pharmacists' attitude toward customer reaction to expand pharmacists prescribing (71.32±13.36). The results showed that the neutral attitudes of CPs were expressed toward the domain of the reasons they believe pharmacists should not have expanded prescribing rights (58.30±14.66). Finally, among the neutral attitudes, the least score was for the domain of the way they see the future of the pharmacy profession (53.92±22.7) (Table 6).

Table (5): The attitudes of study participants towards implications of pharmacist prescribing on pharmacy infrastructure (n=204)

Item	Disagree	Neutral	Agree
	%	%	%
I believe additional IT resources in the Pharmacy would be needed to support pharmacist prescribing.	4.9	20.1	75.0
I believe I have access to sufficient patient information in order to make prescribing decisions for them.	7.4	21.6	71.1
I believe prescribing and dispensing should be carried out in separate areas in the Pharmacy.	6.9	26.5	66.7
I believe a separate quiet consulting area for pharmacist prescribing should be created in the Pharmacy.	6.4	12.3	81.4
I believe current staff arrangements in the Pharmacy can support expanded pharmacist prescribing.	2.9	12.7	84.3
I believe independent prescribing by a pharmacist should NOT occur in community pharmacy (excluding OTC drugs).	28.9	30.4	40.7

Table (6): The overall scores of attitude domains of community pharmacists towards expanding their role (n=204)

No.	Domains	Negative %	Neutral %	Positive %	Mean	SD
1	Attitude of CP to the way they see the future of the Pharmacy profession.	21.1	47.1	31.9	53.92	22.77

No.	Domains	Negative %	Neutral %	Positive %	Mean	SD
2	Attitude of CP based on their experience in Pharmacy towards customer reaction to expand pharmacists prescribing.	1	35.3	63.7	71.32	13.36
3	Attitude of CP to reasons for pharmacist prescribing.	0	29.4	70.6	72.99	11.54
4	Attitude of CP to the way they believe pharmacists should assume expanded prescribing responsibilities.	12.3	54.9	32.8	58.03	16.56
5	Attitude of CP to the reasons they believe pharmacists should not have expanded prescribing rights.	8.3	67.6	0.24	58.30	14.66
8	Attitude of CP to the implications of pharmacist prescribing on pharmacy infrastructure.	2	36.3	61.8	69.37	12.25
9	Attitude of CP to the extension of pharmacists' current roles in the management of minor ailments.	2.9	35.3	61.8	66.97	15.54
	Total attitude of CP	0	64.7	35.3	64.41	7.394

The analyses of the relationship between community pharmacists' attitudes toward expanding their prescribing roles and socio-demographic factors show that female respondents had higher mean attitude scores (65.5± 6.79) than males (63.1±7.89). This difference was statistically significant (p= 0.021, t=2.321). Respondents with a Pharm. D degree had higher mean attitude scores (68.0 ±9.19) than those with a postgraduate degree (66.3±7.59) or those with Bachelor of Pharmacy (63.6±6.88). This difference was statistically significant using ANOVA test (p= 0.010, F=4.709). LSD test showed that respondents with a Pharm. D degree had a more positive attitude than counterparts having a Bachelor of Pharmacy degree (P=0.005).

Discussion

The aim of this cross-sectional study was to explore the attitudes of community pharmacists toward the potential implementation of pharmacist prescribing in KSA. Our results find that the overall attitudes of CPs toward expanding their potential role in prescribing were neutral (62.3%). These results are largely inconsistent with the existing body of literature and, thus, need to be interpreted carefully within the national and international context. The results are in particular incongruent with a recent study where it was found that the majority of pharmacists (92.5%) had positive attitudes toward the expanded prescribing role (34).

Similarly, the current results do not resonate with those emerged from a Qatari study which found that the overwhelming majority of pharmacists, 94.4%, reinforced the idea of expanding their prescribing role (35). However, from a wider perspective, international studies from Australia, Scotland, and Nigeria showed more positive attitudes than the current study (83.9%, 97.7% and 97.1%, respectively) (17, 32, 36). This could be due to the fact that the current study focused exclusively on community pharmacists while some of the previous studies did not have

such focus. For instance, in Nusair et al. (2020) (34) study, the results reflected the attitudes of CPs in addition to hospital pharmacists.

Previous research found that hospital pharmacists focus more on knowledge of drugs and areas of laboratory tests than community pharmacists (37). In addition, it was found that hospital pharmacists have attitudinal differences from the community pharmacists regarding drivers, barriers, and models of pharmacists' prescribing (38). Given the differences between hospital and community pharmacists in terms of training and policies, their attitudes toward prescribing roles might be shaped accordingly. Another explanation for such differences might be attributed to the early introduction of the legislation in some countries supporting pharmacist prescribing, along with the training programs for expanding prescribing (16). Therefore, pharmacists' attitudes can vary according to the different settings, legislations of the countries, and the nature of pharmacists' training.

However, it is noteworthy to mention that, while the overall attitudes in this study were neutral, the majority of respondents (97%) answered yes to the specific question "'Do you think pharmacists should have expanded prescribing rights?" This could imply a gap in the understanding of the expansion of roles by the CPs as they agree with expansion in general, but, when attitudes toward these expanded roles in details are examined, neutral attitudes are more shown. Nevertheless, this finding raises questions about what might be carried out in the name of perceived prescribing role of CPs and calls for further research.

The current study showed that the majority of the community pharmacists prefer the adoption of the supplementary model (79.4%). This is similar to many previous studies where pharmacists preferred the supplementary model and in particular over the independent model (17, 34, 39, and 40). However, to some extent, it could be challenging to make comparisons between these studies, in that the available evidence reports attitudes of combined groups of non-medical prescribers such as nurses, pharmacists and allied healthcare professionals, which could have led to different results than our findings.

However, to some extent, the agreement on the supplementary model among the population of this study fits well with the overall neutral attitudes of community pharmacists regarding their prescribing role and the uncertainty they might perceive regarding their ability to be independent prescribers. In other words, community pharmacists in the current study might be more comfortable to work with a supplementary model that still depends on the doctor's shared advice as opposed to the independent prescribing model.

Furthermore, the current study results are consistent with Jebara's (2019) (41) framework for the development of pharmacists prescribing in Qatar. The study found no support to implement an independent pharmacists prescribing model in Qatar due to concerns over pharmacist diagnosis skills and the relative immaturity of pharmacy practice (41). These results could be beneficial to the context due to many similarities in education, culture, and people. Nevertheless, the supplementary model could be a starting point for a more advanced future independent model. For example, the successful UK model for pharmacists prescribing started with supplementary prescribing in 2003 as a foundation stone for implementing an independent model in 2006 (18, 42).

Conclusion

The study provides essential insights into community pharmacists' attitudes toward expanding prescribing role and those contributing factors. Although CPs showed strong agreement for expanding their future prescribing role, the overall attitudes were neutral. CPs was also in favor of a supplementary prescribing model compared to other models, such as an independent

model. Pharmacists' competent skills and knowledge to prescribe, increasing the pharmacy profits, and the perceived trust by their clients were the main drivers for their future expanding prescribing.

However, in reality, the lack of training in the diagnosis and patient assessment, increase in the likelihood of litigation, and the absence of a consultation room might inhibit adopting expanding prescribing role. The data can provide evidence to regulatory bodies such as Stakeholders of healthcare services and policies to reform pharmacies within the community toward an expanded pharmacist prescribing role. This cannot be achieved unless barriers uncovered in this study are well-understood and addressed in the future reform strategy for community pharmacists' expanded role in prescribing.

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