

## Evaluation of the Role of Pharmacists in Community Setting in Jeddah, Saudi Arabia

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**Abstract:** Objectives: This study was conducted to evaluate current performance of community pharmacists and provided services in community pharmacies in Jeddah to praise the necessary changes in order to meet international standards. Method: A questionnaire composed of six sections (total of forty-eight questions) centered on the pharmacist and the pharmacy itself was randomly distributed to 99 pharmacies in Jeddah that was divided into four regions (North, South, East, and Middle-West). Results: Ninety-five out of ninety-nine pharmacists have a bachelor degree; all of them were non-Saudi males. The average number of pharmacists in each pharmacy during working hours was 1-2(86%) of pharmacies. Seventy-one percent were aware of the ADR reporting program. Twenty-nine percent dispense prescribed medication without a prescription; 57% deals with trade names. Eighty-seven percent of pharmacists claimed that they provide patient counseling; seventy-eight percent deal with medication errors. Fifty tow percent don't communicate with doctors. Only 37% of pharmacies have a website while 8% of them provide online services and delivery. Twenty-five percent of pharmacists provide educational programs for chronic disease. Sixty for percent of pharmacists claimed to have enough training and supervision from their administrations and only 6% showed no interest in getting more information on current pharmacy practice and new drugs. Conclusion: After evaluating the pharmacists working in community pharmacies and the services provided, this study has proved that many important services were lacking and that development in necessary in order to meet the international standards of pharmacy practice.

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### 1. Introduction

Pharmacists are the health professionals who committed to ensuring the safety and efficiency of medication use.<sup>1</sup> According to World health organization (WHO) and International Pharmaceutical Federation (IPF) stated that a well-rounded pharmacist must be "a compassionate caregiver, decision maker, active communicator, lifelong learner and good manager; and should possess good leadership qualities and the ability to be a teacher and researcher".<sup>2</sup> It is very sensitive and important role that include communicating with patients so they are given enough knowledge about how their medication work, and understanding patients history and important health aspects in order to give the right medication with the least side effect and maximum patient satisfaction.<sup>1</sup>

In order to increase the awareness of the importance and effectiveness of community pharmacists in assisting every particular patient and

providing more services inside the pharmacy for more patient convenient, this study was made to evaluate the performance of pharmacists in community pharmacies and the services provided within the pharmacy to recommend the necessary changes to meet international standards.

The concept of Pharmaceutical care defined as "the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient's quality of life" is not fully implanted in community pharmacies in Saudi Arabia. However, this concept is established in community pharmacies in United States of America, United Kingdom, Canada and 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.<sup>1</sup>

The evaluation of pharmacy quality could follow the model of quality evaluation in healthcare settings, which suggested by Donabedian.<sup>3</sup> This model evaluates the quality by assessment of three types of indicators, input indicators, process indicators and outcome indicators. Input indicators in the pharmacy could be presented by the availability of policies, regulations, organizational structure and human resources. Process indicators could be presented by staff practices and outcome indicators could be presented by services provided by the pharmacy.<sup>4</sup>

Although, there are about 7,000 community pharmacies run by approximately 12,500 pharmacists in Saudi Arabia, there is no previous study conducted a general evaluation of the community pharmacies.<sup>5</sup> This study aimed to evaluate the managerial system, pharmacists' practices, and services provided by the community pharmacies in Jeddah city.

## 2. Methods

This is a cross-sectional questionnaire survey that is composed of 48 questions that centered on the pharmacist and the pharmacy itself.

The questionnaire was divided into 4 parts:

Part 1: Pharmacists' demographics

Part 2: Explored the managerial system applied within the pharmacy

Part 3: Elaborated pharmacists' practices including handling medication orders and questioning pharmacist-patient communication from pharmacist view only

Part 4: Assess services provided by the community pharmacy

A randomized observational prospective study was conducted around Jeddah City. To facilitate of information, Jeddah was divided into four regions (North, South, East and Middle –West). The questionnaires were distributed to 125 pharmacies out of the 954 community pharmacies located in Jeddah.

## 3. Results

Out of 125 distributed questionnaires, only 99 pharmacies were included in the study. Out of 99 pharmacists, 96% have a bachelor degree in pharmaceutical science, 4% had a higher degree, and 2% had a diploma, 2% masters. The majority of pharmacists had their degree from Arabic universities (89%). Only 11% had their degree from non-Arabic universities. In addition, All pharmacists were non-Saudis, 90% were Arabic where Egyptians represented (82%), Jordanian (3%), Yemeni (2%), the remaining were one from Sudan and another from Syria). A percentage of 10% were from non-Arabic countries, with Indian represented (7%), Pakistani (2%), Bangladeshi (1%). It was noticeable that 85% of pharmacists were between the age of (25-45) years

old. Out of 99 pharmacists, 69% had (5-20) years of experience, 21% had less than 5 years and only 10% had more than 20 years of experience. Refer to table 1.

In regards to system indicators, a percentage of 88 % of community pharmacies had 1-2 pharmacists working over 24 hours. While 12% of community pharmacies had more than two pharmacists working over the day. Another system indicator found that 71 pharmacies (72%) declared that they have policies and procedure manual within the pharmacy. Eighty pharmacies (81%) declared that they had a job description, 60% claimed to have refill system. Only 37% of pharmacies have a website, and only 12% of pharmacies have an extemporaneous preparation area. About staff training and development, 64% of pharmacists claimed they are getting enough training and supervision from their administration and 86% found it easy to access their supervisors when a problem emerges. The indicators of pharmacy structure and organization were demonstrated in table 2.

Table 3 showed the indicators of pharmacists' practices, which included handling of medication orders and patients-pharmacists communication. Non-prescribed medications were the majority (65%) of all dispense medications within the community pharmacies in Jeddah city. The majority, about 71% of pharmacies dispensed prescribed medications with prescriptions, while 29% claimed to refuse to dispense prescribed drugs without a prescription. Only 32% of pharmacies claimed to use computerized documentation systems for patient's medications. Approximately, 74% of pharmacies verified the authenticity of prescription as common practice. About 67% of pharmacists reported that they review patient's medicine to assure proper use of medication and 33% reported ignorance of this review as a routine activity while on duty. Dealing with medical errors were made by 78% of pharmacists and more than half of pharmacists usually deal with these errors by asking the patients to contact their physicians. Some pharmacists 43% try to reach the patient's doctor and only a few give prescribed medication. About 57% of pharmacists deal with trade names while on duty, however, 69% prefer to deal with generic names of medications. If a sensitive question was asked only 20% of pharmacists would answer it openly while 70% prefer to answer it professionally, some 2 % try to avoid the question. On the other hand, if the pharmacist faced a question that he doesn't know its answer 50% of them refer to reference while 7% answer with the most familiar and only 41% say I don't know. Dealing with patient's frustration by showing more care and attention was done by 64% of pharmacists while the remaining 31% prefer to inform

the patient about their medication and keep distance. About 6% of pharmacists showed no interest in getting more information on current pharmacy practice and new drugs (table 3).

In regards to services provided by the community pharmacy, the majority of pharmacists 85% claimed that 50-200 clients visit the pharmacy daily. In regards to a number of prescriptions, 47% of community pharmacies had the range of 30-100 prescriptions per day. Concerning counseling services, 87% of pharmacists provided patient counseling, although the majority of pharmacies (80%) do not have a counseling area. Among those with counseling area, 65% of them use that area properly. About 66% of pharmacists believe that patients do not have enough knowledge about their treatment and about a third of pharmacists believe patient consultation is not required.

Pharmacists thought that several factors affect patient counseling, the most important factor was patient education, which reported by 62% of pharmacists. The pharmacists believed that time management, communication difficulty, and then physical barriers followed the educational barrier. On the other hand, about half of pharmacists communicate with medical doctors for clarification.

In regards to complementary services, only 8% of them provide delivery and online services, 25% provide educational programs for chronically ill patients and only 18% provide blood pressure monitoring, 3% provide cholesterol testing, 16 % provide blood glucose testing while only 22% provide body weight measuring services. A 25% of pharmacies claimed they provide services for the handicapped (table 4).

**Table (1): Demographic characteristics of the pharmacists who interviewed during survey**

Demographic factor		Frequency	Percentage
Educational level	Bachelor	95	96%
	Diploma	2	2%
	Master	2	2%
Nationality	Saudi	0	0%
	Arabic	89	90%
	Non Arabic	10	10%
Age	< 25 years old	4	4%
	25-45 years old	84	85%
	>45 years old	11	11%
Years of experience	<5 years	21	21%
	5_20 years	68	69%
	>20 years	10	10%

**Table (2): Distribution of factors related to organizational system of community pharmacy**

Pharmacy system factor		Frequency	Percentage	
Number of regular staff	Pharmacists	0	0%	
		1-2	87	88%
		>2	12	12%
	Technicians	0	47	47%
		1-2	38	38%
		>2	14	14%
	Others	0	32	32%
		1-2	55	56%
		>2	13	13%
Presence of policies & procedures manual	Yes	71	72%	
	No	28	28%	
Presence of Job descriptions	Yes	80	81%	
	No	19	19%	
Presence of refill system	Yes	59	60%	
	No	40	40%	
Presence of section for controlled drug	Yes	9	9%	
	No	90	91%	
Presence of computerized documentation system for patient medications	Yes	32	32%	
	No	67	68%	
Extemporaneous preparation area	Yes	12	12%	
	No	87	88%	
Presence of a counselling area	Yes	20	20%	
	No	79	80%	
Presence of a proper counselling area among pharmacies which already have counselling area	Yes	13	65%	
	No	7	35%	
Website for the pharmacy	Yes	37	37%	
	No	62	63%	
Getting enough training, supervision and support from the administration	Yes	63	64%	
	No	36	36%	
Easy to access your supervisor when problems emerge	Yes	85	86%	
	No	14	14%	

**Table (3): Distribution of factors related to concepts, believes and practices of community pharmacists**

Practices of community pharmacists		Frequency	Percentage
Awareness of ADR reporting program	Yes	70	71%
	No	29	29%
Conduction of ADR reporting program among pharmacists who already aware	Yes	54	77%
	No	16	23%
Dispensing a prescribed drug without prescription	Yes	29	29%
	No	70	71%
Ensure that prescription is complete & authentic	Yes	73	74%
	No	26	26%
Ensure that different treatments are compatible	Yes	83	84%
	No	16	16%
Check the medications dosage safety	Yes	92	93%
	No	7	7%
Use dosette and cassette	Yes		
	No		
Use medicine reviews	Yes	66	67%
	No	33	33%
Dealing with medication errors	Yes	77	78%
	No	22	22%
How do you deal with these errors if happen	Give the correct medication	17	17%
	Ask patient to review physician	53	54%
	Give prescribed medication as it is	3	3%
	Try to reach the doctor myself	43	43%
	Other	3	3%
	No answer	4	4%
Deal with generic or trade names	Generic	22	22%
	Trade	56	57%
	Both	21	21%
Prefer to deal with generic or trade names	Generic	68	69%
	Trade	22	22%
	Both	9	9%
Believe that patient have enough knowledge about their treatment	Yes	15	15%
	No	84	85%
Believe Patient-pharmacist consultation required for each prescription	Yes	69	70%
	No	30	30%
Obstacles of counselling (more than one options were allowed)	Time management	40	40%
	Physical barrier	9	9%
	Patient culture and education	59	60%
	Shortage of staff	15	15%
	Language barriers	15	15%
	Other	10	10%
Communication with doctors	Yes	47	47%
	No	52	53%
Dealing with sensitive questions (more than one options were allowed)	Reply openly	20	20%
	Reply professionally	69	70%
	Avoid the question	2	2%
	Others	12	12%
Dealing with unknown questions (more than one options were allowed)	Answer with most familiar	7	7%
	Refer to reference	49	50%
	Say I don't know	41	41%
	Others	11	11%
Dealing with patients frustration (more than one options were allowed)	Show more care and attention	63	64%
	Keep distance	31	31%
	Other	10	10%
Keep up to date by	Symposium	16	16%
	Conference	27	27%
	Journals	13	13%
	Online	63	63%
	Not interested	6	6%
	Others	14	14%
Are you content with your job	Yes	84	85%
	No	15	15%

**Table (4): Distribution of factors related to services provided by community pharmacists**

Services of community pharmacists		Frequency	Percentage
Estimated number of clients per day	<50	14	14%
	50-200	57	58%
	>200	28	28%
Estimated number of prescriptions per day	< 30	43	43%
	30-100	46	47%
	>100	10	10%
Types of medications mostly dispensed	Prescribed	35	35%
	Non prescribed	64	65%
Provision of patient counselling	Yes	86	87%
	No	13	13%
Delivery or online services	Yes	8	8%
	No	91	92%
Educational programs for chronic patients	Yes	25	25%
	No	74	75%
Provision of blood pressure monitoring	Yes	18	18%
	No	81	82%
Provision of blood cholesterol testing	Yes	3	3%
	No	96	97%
Presence of blood glucose testing	Yes	16	16%
	No	83	84%
Provision of body weight measuring	Yes	22	22%
	No	77	78%
Services for the handicap	Yes	25	25%
	No	74	75%
Provide excusive products	Yes	24	24%
	No	75	76%

#### 4. Discussions

After interviewing 99 pharmacists in 99 pharmacies we have noticed that 100% of them were male; as the Saudi pharmacy law does not allow women to work in community pharmacies in addition to social constraints and security precautions as community pharmacies usually present in the public streets. However, this may change in the future when the necessary security is provided. Most pharmacists were between the age of 25 and 45 years old, and have a bachelor degree in pharmaceutical science; most of them have no interest in completing their study; some of them claimed that the long experience is more important than having a degree in this field. These results also conform to another study in King Saud University, where they found that all pharmacists are men and the majority with a bachelor degree.<sup>6</sup> Pharmacy law states that the director of Saudi pharmacy must be a Saudi, a full-time pharmacist licensed to practice the profession.<sup>7</sup> However, as it shown in this study there were no Saudi pharmacists in all 99 pharmacies also the Saudi managers were not available during the visit which might indicate that this job is completely occupied by non-Saudis. The

lack of Saudi pharmacists employment at Community pharmacies might be due to low salaries, long working hours, shortage of Saudi pharmacists, the requirement of previous long experience, the rejection.

Table 3. Distribution of factors related to concepts, believes and practices of community pharmacists of companies to hire them or the Saudi pharmacists concerns of the society's perception as most people consider community pharmacists a seller men or it may be the reluctance of them. The unwillingness of Saudi pharmacists to work at community pharmacies could explained by lack of opportunity to exercise their expertise and knowledge as a result of the marginalization of the role of community pharmacists, where we found 27% of patient don't ask for pharmacists counseling and the absence of a system that allows communication between them and the doctors, thus lose the interest in working in community pharmacies and direct the pharmacists to work in factories or hospitals pharmacies.

The number of pharmacists in each pharmacy ranges between 1-2 pharmacists during the regular working hours per day; (47%) of them have no

technicians, so the pharmacies visited by a large number of patients might suffer from weakness providing the desired services to patients such as counseling and verifying the prescription order from drug interactions and accuracy of dosing. In this study, we found the average number of clients a day is mostly 50-200 on 58% of pharmacists depending on the population density in each area; a presence of technicians or increase the number of pharmacists will help pharmacist will help pharmacist to provide the adequate health care to patients with less time.

The study found that the majority of the dispensed items are the non-prescribed medication (65%); this underlines the importance of counseling to avoid the misuse of medicine, since patients do not recognize the serious and dangerous effect of the OTC drugs if used inappropriately.

According to Saudi Pharmacy Law, a section for controlled drugs should be available only in authorized pharmacies.<sup>7</sup> In this study, only 9 pharmacies have a section for controlled drugs, which might be a good indication of the intense security measures from the ministry of health and regulatory bodies on this regard.

The average number of prescriptions a day for most pharmacies is 30-100 prescriptions; The Saudi Pharmacy law prohibits dispensing the prescribed drug without a prescription.<sup>7</sup> Conversely, previous Saudi study<sup>6</sup> showed that 35% of the prescribed medications dispensed without prescriptions; notably that support the findings of this study as 29% of pharmacists are willing to dispense prescribed drugs without prescriptions. That could be explained by the weakness of applying the governmental regulations toward the policy of dispensing prescribed medications. On the other hand, the study found that 71% of pharmacists refuse to dispense prescribed drug without prescription; these answers could lack credibility or reflect the pharmacists' fear of professional mission.

This study reflects the pharmacists deal with brand names including nearly 57%, despite that 69% of them preferred to deal with the generic names. The propagation of brand names usage may be due to the complexity and difficulty to remember the generic names, the unawareness of public or the impact of advertising campaigns for pharmaceutical companies to people in general and pharmacists or doctors in particular. Indeed, the generic name allows the pharmacist to dispense the alternative drug in the absence of the original one or the presence of the alternative with the same effect and reduced cost.

Nowadays, consumers' knowledge of generic medicines and willingness to choose them is currently an important determinant of the success of the generic policy. A study in Malaysia<sup>8</sup> aimed to assess the

awareness of the public of generic medicines showed that the majority of population don't know what generic medicines means, however, they might be aware of the availability of a cheap equivalent alternatives; in German 63% were aware of the difference between generic and trade names and 73% of Brazilian knew the cost advantage of generic medicines.

The use of electronic prescriptions has been introducing among the Canadian and American community pharmacies<sup>9</sup>; that have advantages over paper-based prescriptions for prescribers and pharmacists by authenticating the transmission and providing the security to prevent tampering. In this study, 26% of pharmacists don't ensure the authenticity of paper prescriptions, which make it easier for vendors and other drug abusers to make copies of prescriptions or repeat prescribing an old prescription.

A computerized system, that document the patient information and medication is missing in 68% of pharmacies; such a system is essential in providing an ease in record keeping and allow a direct contact between physician and pharmacists in order to maximum patient compliance and minimize medication error. In addition, a computerized system could help in the process of repeat prescriptions<sup>10</sup>. The problem among prescribed drug interactions, OTC interactions with prescribed drugs and overall drug interactions has been increased; out of 5497 patients visited ER, 235 (4.3%) experienced adverse drug effect, 45 (19.1%) of these were hospitalized; that has been detected in American study.<sup>11</sup>

According to this study, 78% of pharmacists deal with medication errors. A previous study showed that doctors consider pharmacists as expertise in drug information but their expectation of pharmacists as providers of quality clinically focused pharmacy services was low; the doctors were also uncomfortable with pharmacists providing direct care.<sup>12</sup> In this study 52% of pharmacists do not communicate with doctors, this is a large proportion that may affect the quality of care provided by pharmacists and hinder dealing with medication errors. In addition, this study institute that 54% of pharmacists ask the patient to see a doctor when they find medication errors, which put more pressure into patients and consume more of their time.

Moreover, 43% of pharmacists try to reach the doctor by themselves in order to clarify the suspected error. However, that could be much easier when the computerized system mentioned above were available in Saudi community pharmacies.

Pharmacists in organized health care systems should develop comprehensive, ongoing programs for monitoring and report adverse drug reactions (ADRs). It is the pharmacists' responsibility and professional

obligation to report any suspected ADRs.<sup>13</sup> Only 21 pharmacists (13.2%) were aware of the ADR reporting program in Saudi Arabia. Ninety-seven percent of the respondents considered the reporting of ADRs to be an integral part of their professional duties and all respondents acknowledged the importance of reporting.<sup>2</sup>

The finding was reported in Saudi study in 2006, which also discussed the barriers that prevent pharmacists from reporting ADR. In our study that conducted five years apart from the previous study, we found 70 pharmacists (71%) were aware of the ADR reporting program which has a good indication in raising the awareness of pharmacists toward that program; that could be a result of the instructions provided by Ministry Of Health and Saudi FDA or the percent of this program in the job description of each pharmacist, where we found that 81% of pharmacists had a job description.

The pharmacist's role is expanding beyond the traditional product oriented functions of dispensing and distributing medicines and health supplies. The pharmacist's services today include more patient oriented, administrative and public health functions.<sup>14</sup> According to ASHP guidelines, pharmacists should educate and counsel all patients.<sup>15</sup> This study shows a positive attitude of community pharmacists towards providing patient counseling (87%). This finding is consistent with another study in King Saud University.<sup>16</sup> While (13%) of the others do not make it which return to many obstacles facing them, and perhaps the most important are patient culture & education; in addition to time management.

Although the counseling area provides privacy for the patient, 80% of pharmacies do not have it. This may be due to economic reasons, ignorance of community pharmacy standard requirements and absence of control from statutory bodies and regulatory authorities.

Only 37% of pharmacies have an official website for products and services preview, and only 8% of them provide their services through accessing online or delivery. Websites and the Internet are an easy modern way for pharmacies to view its products and services through it. Which sometimes considers illegal and need too many researches about it.

As documented in another study in Singapore; evidence of effectiveness for community pharmacy / community pharmacist interventions exists for lipid, diabetes, and hypertension management and for preventive services such as weight management, osteoporosis prevention, and flu immunization services.<sup>17</sup> Based on government regulations, pharmaceutical care was included in the Saudi legislation emphasizing the need for community pharmacists' involvement in chronic diseases.<sup>3</sup>

However, in this study only 25% of pharmacies provide an educational purpose for chronic disease and so for patients, while they can play a very important role in educating community and society surrounding it, this may return to the lack of clinical pharmacists or shortage of space.

Saudi FDA or MOH is recommended to distribute its brochures or booklets as well as a pharmacist should assist in informing the patient or his relative with his condition. We've found that only 18% of pharmacies provide blood monitoring, 16% provide blood glucose testing, while only 3% test blood cholesterol, it's forbidden by Saudi law to provide these services in community pharmacies, however, one of the pharmacists justified that one of his reasons of measuring blood pressure is to know if the patient symptoms such as a headache are not due to hypertension.

Only 12% of our survived pharmacies have extemporaneous preparation area. Thus, the patient may experience difficulty in the absence of the desired form of the drug and this may be due to the requirements of extemporaneous preparation area as needed to increase the number of staff and provide space and tools necessary to work.

Medicines must be sold in their original packaging and registered, pharmacist be allowed to sell part of medicine registered to the patient if it in the form of injections or tapes or envelope is calculated unit price split based on the price package registered, with the exception of antibiotics and vital medicines that require the use of full amount as mentioned in the Saudi pharmacy law.<sup>7</sup> In this study, only 12% of pharmacies use dossette and cassette system, although they can play a role in home care for disabled patients and geriatrics and reduce the misuse of drugs or taking someone from the family of the same drug when the identical symptoms appear as well as reduce the material cost. Pharmacies generally do not show enough attention to handicap since only 25% provide services for them. There is no enough competition between pharmacies since pharmacies that have exclusive products are only 24%, it seems that pharmacies depend on its name especially the big strong chains in the city.

Answering of unknown questions may cause a problem in community pharmacy, 7% of pharmacists answering with a most familiar answer. However 41% say I don't know the answer, but not clear if the pharmacists try to find the answer later on. 50% of them refer to reference, which considers professional. Most of them use the Middle East medical index, BNF, Lippincott pharmacology, Martindale and Ministry of Health references. Only 63% admitted having enough trainer and support from their administration, which affects the pharmacist

efficiency and their updated knowledge. 63% of pharmacist update their knowledge through online, it's found as an easy, fast and accessible way to gain information, while only 13% update their knowledge through medical journals, medical journals should be available for pharmacist as provided from their administration to make their access to them easier as to assure that their update knowledge in recent and accurate.

### 5. Limitations

In this randomized prospective study, the standards of community pharmacy practice were not obtained from a specific guideline, and the choice of the standards was completely randomized and not dependent on the standards and regulations of a particular international country.

The questioners were not equally distributed across all regions since the south region had the least involvement in the study. In addition, some questionnaires were not fully answered but they were included in the study.

We did not specify the number of pharmacist staff working during each working hours. During the study, the authenticity of the answers was not confirmed by the interviewers.

For instance, pharmacists might claim that they do not dispense prescribed drugs without prescriptions meanwhile they do dispense prescribed antibiotics and contraceptives without prescriptions at the time of the interview; however, the answers were taken as what they say not as what they do.

### 6. Conclusion

The community pharmacists play an important role in community health care system. Saudi Community pharmacy practice has developed over the years. However, to meet the international standards and higher quality practice. Saudi pharmacy regulations must be updated and applied, as well as Saudi food and drug administration rules by creating a surveillance system to enforce the rules gradually.

The pharmacist must know their job description and specifications by reviewing physician order and used medication compatibilities. In addition, the community pharmacist must be more engaged in the health system by computerizing prescriptions.

Community pharmacies will be restricted not to dispense any medication other than OTC without a prescription as the pharmacist role will be enhanced by reviewing the correct medications which will decrease the incidence of medical errors. The pharmacist must be supported by good environment and solid system to fulfill their job needs as they must be evaluated and educated by proper training and

updating their information about newly approved drugs and modern community pharmacy practice.

### 7. Recommendations

1. Female pharmacists should be given an opportunity to work in community pharmacies inside malls and shopping centers as a start.

2. Saudi pharmacists should start working in community pharmacies and the Saudi managers should be available during working hours.

3. Although pharmacies put signs for drug substitute, public awareness of the availability of cheaper substituents for generic drugs.

4. More than one pharmacist per shift should be available to decrease workload and give proper services and to increase the efficiency of work.

5. Pharmacists should be responsible for checking drug- drug interactions.

6. The intervention of computerized system and electronic prescriptions that allow a direct contact between physician and pharmacists in order to reduce the incidence of fake prescription is highly recommended.

7. The structure of pharmacy layout should help to facilitate patient counseling in a private area.

8. The pharmacist must not do the work of a cashier especially where the workload is high, to make the pharmacist focus on counseling and proper drug dispensing.

9. Every pharmacy must have its own website to show their products and to ease online purchasing for geriatric and disabled patients. A future study to evaluate the online pharmacy services is recommended.

10. Saudi FDA should have an active role in controlling drug use and misuse in the community pharmacy.

11. On job training must be provided for all new pharmacists and evaluation must be done to monitor their efficiency of work before being responsible for direct patient contact.

12. Up-to-date medical references must be readily accessible in every pharmacy to keep up pharmacist with updated information.

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