



Research Article

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A STUDY ON THE PHARMACIST'S ROLE IN HEALTH CARE AND DRUG DISCOVERY

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ABSTRACT

The pharmacist's role as a health caregiver in any society is so important, as the Pharmacists are essential healthcare professionals, who enhance patient care and promote wellness. While responsibilities vary among the different areas of pharmacy practice, pharmacist's role in real practical work (as in most of developing countries) is limited and different from that should be (as in most developed countries), and that because of many reasons as weak education, limited medical information sources data reporting and supplying. The pharmacist's role can be wider and more beneficial. In this research I tried to detect the main reasons and the solutions to these issues using many ways as questionnaires, health caregivers experience, and statics, and I tried to develop the pharmacist's role in real practical life (especially in developing and developed countries), to be more beneficial to the society as a medical caregiver, especially in the issues that related to medical and drug data supplying, safety data reporting, drug discovery, health care policy and disease treatment. The study in this research revealed that pharmacist's role in real practical work (or in most of developing countries) is different from it should be, and we should deal with these issues as an international issues not only as a local issues, and we should educate and encourage the pharmacists, all health caregivers and peoples about medical culture and the importance of the pharmacist's role in many aspects of health care process and drug discovery.

Keywords: Pharmacist's role, Data reporting, Drug discovery, Drug data reporting.

INTRODUCTION

The pharmacist's role as a medical caregiver in society is so important, as Pharmacists are essential healthcare professionals, who enhance patient care and promote wellness. While responsibilities vary among the different areas of pharmacy practice, as: Play an important in the results of medications. outcomes improve and costs in patient care. To evaluate factors that may affect a patient's medications adherence. Help in training and educating of colleges of pharmacy and patients. Provide pharmaceutical care to their patients. Improves patients' quality of life with minimum risk. In providing pharmaceutical care, pharmacists strive to: Cure disease, Eliminate or reduce symptoms, Arrest or slows a disease process^{1,2}.

But pharmacist's role in real practical work (especially in the most of developing countries) is limited, as most of their duties are limited to drug dispensing mainly with some irregular and rare duties as counsel patients. This may be due to many reasons as limited education and limited information sources for medical and drug data reporting and supplying, and this may be due to some reasons as languages, phrases complexity, time¹⁰. But the pharmacist's role can be more beneficial (according to the pharmacist's education, ability and potentials) in many other duties, as in medical and drug data supplying and reporting, drug discovery, health care policy and disease treatment. That will be beneficial to both local and international health care process, too.

In this research I tried to find the main reasons and the solutions to these problems using many ways as questionnaires, the experiences and statics, and I tried to develop the pharmacist's role in real practical work, trying to make the pharmacist's role more beneficial to the society as a medical caregiver, especially in issues related to medical and drug data supplying, safety data

reporting, drug discovery, health care policy and disease treatment, with some examples of my personal efforts (clinical trials and observations) while working as a health care provider for many years.

MATERIALS AND METHODS

In this research and through about 1 years (April 2016 to May 2017), I used a simple Questionnaires Design (face to face and computerized)^{5,6} and I got the most needed answers as (YES or NO) nominal data⁷, and some of the recorded retrospective information⁸ that can be analyzed (by calculating the percent of cases and answers Yes or No) simply and rapidly from random pharmacists aged 23-59 years old, or random adult people (in some surveys) aged 21-65 years old⁹, and I used my experience and the other medical caregiver experiences, too. And I got some information and references from the Internet, too. Present study was carried out in accordance with ethical principles by following International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

The difference between the Pharmacist's role in actual practical work and in an ideal work condition

Pharmacists are essential healthcare professionals, who enhance patient care and promote wellness. While responsibilities vary among the different areas of pharmacy practice, as: Dispense prescriptions. Communicate with prescribers. Ensure patients' safety (Check each patients' medication record every time he or she gets a new or refill prescription filled. This is the best way for a pharmacist to prevent potentially dangerous interactions between drugs). Counsel patients (informing about adverse reactions and interactions with other medications). Work with patients on general health. Deal with insurance companies. Manage staff. Perform administrative tasks. Educate health

provider colleagues (as Doctors, nurses and other health care providers about new medications and drug therapy protocols).^{3,4}(This role in ideal work condition(as it should be), and may be existed in developed countries, mainly more than that in developing countries).

But in real and actual practical work the Pharmacists' Responsibilities are limited (especially in the developing countries) on Dispense prescriptions mainly, with some minor (irregular and rare duties) as counsel patients, Communicate with prescribers and manufacture some pharmaceutical preparations. Except for some clinical pharmacists who work in some hospitals, and some pharmacists may do some extra duties about the patients and the diseases as more counseling and treat some diseases.

As well as, I made a survey and asked the pharmacists about their duties in actual practical work, by this question: what are your main duties that you do in your actual practical work?

Question's Answers:

I found that most of the pharmacists 104 from 119 about 87% are concerned about dispensing and with other rare duties that concerned with drug dispensing, as few drug information reporting, Communicate with prescribers and manufacture some drug policy issues, while less than 13% of pharmacists who work in some hospitals as clinical pharmacists have some more duties, especially the pharmacists that work in developed countries (as USA, Canada and UK) or in high-class hospitals, and some pharmacists may do some extra duties about the patients and the diseases as: more counseling, some diagnostic role, sometimes some pharmacists deal with diseases that should be treated by specialists and physicians(especially in some developing countries as Egypt, India, KSA and some rare places in the world, too.).

Table 1: We can summarize these results

Concerned about dispensing and some other duties	Concerned about dispensing with sometimes other rare and few duties	Total
15	104	119

Reasons of these issues

To detect the main reasons of these issues I asked some pharmacists, and I made a survey, questionnaires and simple statics^{5,6}by these question:

-Do you think the pharmacist's role is good enough or as it should be as a health caregiver in actual practical work? And why?

Question's Answers:

I found 116 of 128 (About 90.5%) of caregiver say that role of pharmacists in actual life work conditions is not enough, except a few pharmacists (especially in developing countries) who work in some high-class hospital as a clinical pharmacist.

Table 2: We can summarize these results

Caregiver say that the role of pharmacists is suitable enough	Caregiver say that the role of pharmacists is not suitable enough	Total
12	116	128

And these answers may be due to some reasons as: weak medical and health culture of the pharmacists, some pharmacists do not cared and not love to cooperate with the other stuff,

some physicians do not love to discuss that medical information with the pharmacists, the pharmacists are not trusted about their abilities and their information,

the pharmacists have no time to educate or to learn about medical and drug data for data reporting or for data supplying or for any other duties.

Ways to Solve These Issues

To solve these issues, I asked some pharmacists and I made a survey, questionnaires and simple statics^{5,6}by these question:

-Do you think the pharmacists' role should be developed to be more beneficial? And how?

Question's Answers:

I found 84 of 85 (about 98.5%) pharmacists think that their role could be developed to be more beneficial in some conditions as if the pharmacist has a good education, good medical culture, good communication skills and if the pharmacists themselves want to develop their abilities and duties.

Table 3: We can summarize these results

Pharmacists do not think that their role could be more beneficial	Pharmacists think that their role could be more beneficial	Total
1	84	85

And there are some ways that help to solve these issues, as follows:

Development and update the Pharmacist's medical and health culture and its education before and after the graduation,

Specialization of Pharmacist's role means to direct the Pharmacist's role into more specialized duties.

Given the trust and the experience to the pharmacists and updated regularly,

Education of the pharmacists and the other caregivers about the importance of the pharmacist's roles and other duties besides the drug dispensing duties.

Education and encouragement of the pharmacists about the main and the most rapid and simple sources for drug and disease data reporting and data supplying as MedWatch, drug.com, BNF,

Because a lot of pharmacists (and caregiver, too) have a lot of medical safety drug data and ideas that are so important in healthcare, policy and patient safety but they will need other

more rapid and simple way or programs for medical and drug data reporting and health culture data supplying¹⁰, so I recommend these types of programs that I designed before in

other previous research, as they are rapid, simple, nontime-consuming and suitable for every body in the world with different culture and languages¹¹, as:

Medical Data Reporting International Program (**MDRIP**). And Health Education and Medical Culture International Program (**HEMCIP**).And

Reporting and Supplying Medical Information International Program (**RSMIP**)¹¹.

It is a mistake to waste the pharmacist's potentials and experiences because of some reasons that can be solved, especially pharmacist's role in medical and drug safety data reporting, medical data supplying and drug discovery.

For practical examples, as I got clinical information and I made surveys^{8,9} by only me with no funds from anybody, as well as, I observed many actions and many medical data in my practical work that I could not record it and I had not any chance to tell anyone about it, due to the same reasons as time, language, communications and care of the responsible managers and local institutions¹⁰. These simple information have a good degree of

accuracy and significance, and I used calculations and some of the recorded retrospective information^{8,9}.

First Example:

I select 3741 cases (randomly selected sample), and I found 2259 of 3741 cases (about 60.4%) of cases in KSA public hospitals and public health care centres (there are similar results in other similar free health care services countries as Qatar, Kuwait, United Emirate, etc) are diseased by diseases that related to or because of bad habits, as due to the exposure to the coldness of air conditions or unhealthy food habit (like cold ice-cream and sweets). That types of diseases that we can avoid most of these diseases if we arranged and educate the peoples about these issues, so I recommend more health education for people in media and the internet, too.

As I found 1594 of 2259 case (about 70%) diseased with Upper and lower respiratory tract diseases as: common cold, tonsillitis, pharyngitis, otitis media, while 665 of 2259 cases (about 30%) due to food habit and diseased with GIT(gastrointestinal tract) disturbance or diseases: as stomach pain, diarrhea and acidity.

Table 4: We can summarize these results

Diseases not due to unhealthy habits	Diseases due to unhealthy habits	Total
1482	2259 cases 665 of them GIT diseases 1594 of them Upper and lower respiratory tract diseases	3741

Second Example:

I asked 93 adults (randomly selected sample) persons, by asked this question to them:

Do you have an extra (or unused) unneeded drugs or do you got an extra unneeded medical service, before? and why?

Question's Answers:

I found that 87 of 93 about (93.5%)of the persons in free health care service countries (as in KSA public hospitals) have a lot of drugs they do not need it or do not use it, and they mostly return to hospitals for unnecessary and unneeded medical services and drugs again and again, because of many reasons as:

they used the drug one or two times only, but if no observed benefit appeared, they come again with no waiting for the actual drug effect,

the drugs and the health services are free, so they will not lose any money or anything if they take more and more drugs and services,

they do not care about wasting the drugs or time of the health caregiver services,

they may not educate about drug and disease cultures.

Table 5: We can summarize these results

People have not extra drugs and extra unneeded medical services(i.e say No)	People have extra drugs and extra unneeded medical services(i.e say Yes)	Total
6	87	93

So, to solve this issue, I recommend to make the medical services in any country by money and not free, even if with a few money, and I recommend an electronic medical registered file to each patient to record every drug and every service in it, too. Because this will make a lot of people think before come again to the hospitals for unnecessary and unneeded services, this is better for the economy, pharmacoeconomics, people health and for all society,too^{12,13}.

Examples of some of my medical data observations

Most of these observations (that I observed these medical notices from more than 10 years ago) are not accurate, as they depend on my recorded and observed retrospective information with not accurate calculations^{8,9}, but may be beneficial, and it does not cost a lot of money, too.

-Echinacea herb (*Echinacea purpurea*): not cause benefit with people with some types of severe chronic disease as male nutrition, liver damage and hepatitis disease, as I found in some cases with these diseases take Echinacea herb for 8 weeks but with no benefit.

But may be beneficial if taken with multi vitamins and good nutrition in some good healthy cases, they take Echinacea herb for 4 weeks, that effect on their immunity and causing some low duration of acute symptoms of some diseases as common cold, tonsillitis, pharyngitis and otitis media. *Echinacea purpurea* may cause some dermatic allergy, too.

-*Ginkgo biloba* herb (260 mg): does not affect alone in any mental activity as some persons take it for about 1 month with no observed improvements, but may cause some benefit in concentration and mental activity if used with Sulbutiamine 200mg (brand name: Arcalion) or with some exercise, as some persons used it with exercise or with Sulbutiamine 200 mg (brand name: Arcalion) and they got some improvements in mental activity. But Ginkgo biloba herb may sometimes cause a headache and dizziness.

-Salbutamol 2 mg tablets or syrups may cause more chance of tachycardia with anxiety people.

-Yogurt may be taken with or after some drugs as some types of antibiotics to decrease its side effects concerned to stomach or GIT, as nausea, vomiting, GIT(GastrointestinalTract) disturbances. Some persons take these medications (as some types of antibiotics) withsome healthy nonspicy food (during eating) instead of Yoghurt and it was beneficial to decrease these side effects,too. And that may be at the same or more effective than H2R blockers as Ranitidine tablets for the prophylaxis or treatment of these problems.

-high percent of cancer cases in KSA and UT (Urinary Tract) is GIT (Gastrointestinal Tract) related cancer as colon cancer and rectum cancer, this may be correlated to (or due to)¹⁴ the nature of the food in these countries, as the peoples in these countries love much spicy food and sometimes unhealthy food, too. As well as, cancers that related to the upper and lower respiratory tract, as lung cancer and larynx cancer and this may be correlated to(due to) smokes, pollution and excessive air conditioners use. As well as, the high percent of Diabetic Mellitus patients (about 10% of KSA population) may be due to bad food habits as ingestion a lot of fatty, more carbohydrates and sweet food.

-As well as, a lot of clinical trials, ideas and researches that I made and published them in the other previous research by only me, as the research that concerned with A new Additional Way For Drug Validity Determination Using PH Indicators, as most of people prefer another additional method to distinguish the valid and the invalid drugs¹⁵, so I designed and tested a design I called it Validity Investigator Spot (VIS)¹⁶to identify the invalid drugs and valid drugs by only identifying the color of this small spot (contains suitable PH indicator layer) that put in a suitable place on the drugs containers, The idea of this method depends on the difference between the PH between valid drug media and invalid one, as when the drug becomes invalid the PH of its chemical constituents and its media may change, too. that may cause changes in PH degree can be detected by suitable PH indicator that will sharply changes in color if only the PH of the drug changes to the PH in which the drug will start to be invalid, to indicate simply the actual validity of the drug¹⁶.

RESULTS AND DISCUSSION

Pharmacist's role in actual or real practical work (or as in most of developing countries) is different from that it should be as in ideal work (or in most developed countries), as most of the Pharmacists' Responsibilities are limited on Dispense prescriptions (mainly) with some related irregular and rare duties as counsel patients, Communicate with prescribers and manufacture some pharmaceutical preparations. That is a waste of pharmacists potentials (especially in developing countries) and this is due to many reasons as weak culture of the pharmacists, some of the pharmacists do not care and not love to cooperate with the other staff, the physicians not love to discuss any information with anyone, the pharmacists have no time to educate or to learn about medical and drug data reporting or supplying or any other medical culture or any other duties. And most of the caregivers think that the role of pharmacists is lower than that it should be, and the pharmacist's role may be increased and developed with some efforts. As, we should care about the pharmacist medical culture and its education before and after the graduation, given the trust and the experience and the medical culture to the pharmacists regularly, educated the pharmacists and the other caregivers about the importance of the pharmacists other roles and other duties besides the drug dispensing duties, educate and encourage the pharmacists about the main and the most rapid and simple sources for drug and disease data reporting and data supplying as MedWatch, drug.com, BNF, or will may need other more rapid and simple way or programs for medical and drug data reporting and health culture data supplying¹⁰, so I recommend these types of programs that are rapid, simple, nontime-consuming and suitable for everybody in the world with different culture and languages¹¹, as:

Medical Data Reporting International Program (MDRIP). and Health Education and Medical Culture International Program (HEMCIP).and

Reporting and Supplying Medical Information International Program (RSMIIP).

Reporting and Supplying Medical Information International Program (RSMIIP)¹¹.

The development of pharmacist's role (and the other health caregivers) by education and medical culture about their duties, health education, drug safety data reporting, their medical notices and experiences reporting is very important in any society and the world as an international important issues, and not as only a local issues, as any medical notices, drug safety data, observations and clinical trials may be beneficial to all the world, as:

I recommend(as in my clinical trials and observation in this research) to make the medical services in any country by money (not free), even if with a little money, and an electronic medical registered file to each patient to record every drug and every service in it. Because this will make a lot of people think before come again to the hospitals for unnecessary and unneeded medical services, and this is better for the economy, pharmacoeconomics, people health and for all society, too^{12,13}. And I recommend giving everybody more care about health education and medical cultures about diseases, drug and general health culture to avoid most of the diseases in any the society. As well as, a lot of observed medical and drug safety data that I recorded at above in this research. However, although I found some previous researches that deal with these issues, too. But did not deal with these issues as an important international issue and not look like in this research, too.

CONCLUSION

The study in this research revealed that pharmacist's role in real practical work (or in most of developing countries) is different from it should be, and we should deal with these issues as an international issues not only as a local issues, and we should educate and encourage the pharmacists, all health caregivers and peoples about medical culture and the importance of the pharmacist's role in many aspects of health care process and drug discovery.

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