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LEBANESE COMMUNITY PHARMACY: THE ROLE OF THE PHARMACIST IN THE HEALTH CARE

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ABSTRACT

Objectives*:** The primary objective of this study was to investigate and to analyze the role of the pharmacists in different aspects of community pharmacy practice including counseling, dispensing and prescribing of medications. Additional purposes included pharmacists' perception of themselves in the healthcare system, and their evaluation of offered services at their pharmacies in terms of types and importance. ***Study Design*:** A cross sectional study was conducted in all districts of Lebanon between June and September 2016. ***Settings and Participants*:** Questionnaires were distributed to pharmacy students during their-summer training of year 2016 in community pharmacies across all regions of Lebanon. The study population consisted randomly of community pharmacists, or assistant pharmacists, or technicians within these pharmacies. Questionnaires were filled by the owners or employees working at community pharmacies. The questionnaire was divided into three major sections with whether open-ended or close-ended questions. These sections included pharmacists' understanding of their role as professional counselors and prescribers, pharmacists' understanding of pharmaceutical care, frequency of these services, pharmacists' understanding of their role as prescription dispensers, and finally the major obstacles and concerns at their pharmacies. ***Results: A total of 207 participants were included in this study. Our results showed that 26.6% of the pharmacists perceived themselves as medicine experts and only 18.4 % as patient counselors. Moreover, 95.7% of pharmacists gave advice about smoking cessation while only 0.3% of them prescribed nicotine replacement therapy. It was noted that 97.6 and 93.2% gave advice about healthy eating and physical activity respectively, however, only 1% prescribed weight loss products. Different unpaid services were offered at the pharmacies such as measurement of blood pressure, blood glucose, lab values interpretation, weight measurement, and wound care procedures. The major constraint in offering services was large workload (63.3%). As prescription dispensers, 67.1% of the pharmacists kept personal non--shared medical record for their chronic patients. Furthermore, 58% of the participants found that prescription illegible handwriting was the major cause of dispensing errors, for that 54.6% called the prescriber immediately for clarification. In general, 56% of the pharmacists found that lack or no information about co-prescribed medications was the major cause of medication errors. Additionally, 84.5% of pharmacists explained to their patients about expected side effects but only 61.4% of them have explained about the most common side effects. ***Conclusion:*** When community pharmacists fully understand their role in the healthcare system particularly as patient counselors and when inter-professional coordination between the different components of this system is achieved, a better patient care is attained.

KEYWORDS: Community pharmacy, pharmacy services, Lebanon, counseling, prescription error, medication error.

INTRODUCTION

The pharmacist's role is being expanded beyond the traditional product-oriented functions of dispensing and distributing medicines and health supplies. The pharmacist's services of today include more patient-oriented, administrative and public health functions.[1]

In the community settings, pharmacists should be acknowledged as health-care professionals whom patients can consult for health-related problems. Many pharmacists provide advanced patient-centered services as coordinators of medications during care transitions, medication management, comprehensive medication reviews with ongoing medication monitoring, chronic disease management, patient education, prevention and wellness services.[2]

According to the International Federation of Pharmacists (FIP), counseling is defined as an approach that focuses on enhancing individual problem-solving skills for the purpose of improving or maintaining quality of health and quality of life.[3] The process emphasizes that

healthcare professionals provide and discuss medication information with their patients to achieve this goal.[3] Effective patient counseling will lead to patient's safe and proper use of the medications, in order to achieve the required therapeutic outcomes.[4] The counseling session relies on different tools such as strong communication skills, knowledge of prescribed medicines in terms of therapeutic action, dosages, side effects, drug-drug interactions and storage.

In Lebanon, the pharmacists are holding either a five year degree program with the title of Bachelor of Pharmacy (B.Ph.), or a six year degree program with the title of Doctor of Pharmacy (Pharm.D).

In order to develop pharmacists' education and update their information, the Lebanese Order of Pharmacists has applied by law in 2013, continuing education (CE) program to pharmacists with active license, living in Lebanon, even if not working. The pharmacist should achieve a mandatory of fifteen credits annually counted every 3 years.[5]

In March 2014, the community pharmacists' number in Lebanon was around 3000 from a total of 7000 registered pharmacists.[6] Lebanese pharmacists encountered many challenges to play fully their role as effective members in the health care system besides being medicine dispensers. Till now, regulations of the ministry of public health forbid the community pharmacists from initiating drug therapy in emergency cases, administering drugs by injection, ordering laboratory tests or making decisions in other aspects of therapy management.[7]

It is important in order to achieve progress, to collaborate between the Lebanese Order of Pharmacists and the Ministry Of Public Health to establish plans that support the pharmacists' drug therapy management for chronic patients in a national system including all other health care personnel. The cooperation must also include systems that allow the pharmacists to be part of a person-centered care.

These actions cannot be completed unless the pharmacist meets specific requirements and mandatory special training and courses established by the Lebanese Order of Pharmacists.

Exploring pharmacists' perceptions on their role within the community pharmacies is a challenging task because pharmacists face many constraints in many countries.[8] This study is the first in Lebanon that investigates the practices of Lebanese community pharmacists in all its aspects: counseling, dispensing, and prescribing. It also highlights how they perceive their role in the health care system.

METHODS

Study design and procedure

This was a cross sectional study conducted between June 2016 and September 2016 at community pharmacies in all districts of Lebanon. Pharmacy students invited the owner or the employee at the pharmacy to fill-in a questionnaire during their summer training.

Data Collection

The questionnaire was divided into four parts. The first part included the demographic characteristics of the participants including age, gender, practice experience, education level, pharmacy location and work position.

The second part included questions related to the pharmacists' perception as self-prescribing professionals. The pharmacists answered six close-ended questions related to the availability of consultation area in the pharmacy, the approach to a patient who comes for a consultation, rates of most prescribed medicines, importance of counseling, time spent and frequency of counseling and how pharmacists perceived themselves in the healthcare system. The pharmacists also answered two open-ended questions concerning definition of counseling and the ways to improve it.

The third part included questions related to the services offered in the pharmacy. The pharmacist answered seven close-ended questions related to the types of service offered in the pharmacy, monitoring of blood pressure and blood glucose, laboratory values interpretation, other services offered in the pharmacy and major constrains to offer pharmacy services. The pharmacists answered one open-ended question concerning monitoring of blood pressure in special conditions.

The fourth part included questions related to the pharmacist as prescription dispenser. The pharmacists answered five questions related to the storage of record for chronic patients, major cause of dispensing errors, actions to be taken in case of an error, causes of medication errors and explanation of side effects to the patients.

Study outcomes

Primary outcome was to investigate and evaluate the role of the pharmacists in different aspects of the community pharmacy practice including counseling, dispensing and prescribing of medications.

Secondary outcomes were to explore the perception of pharmacists in the healthcare system and offered services at their pharmacies in terms of types and to rate the importance of counseling in pharmacy practice by asking them to give a score from one (least important) to ten (most important).

Statistical analysis

Data was entered and analyzed on SPSS (Statistical Package for Social Sciences), version 23. Descriptive

statistics were used to describe patient characteristics (frequencies and percentages for categorical variables), and mean (±SD) for continuous variables. Because of non-normal distribution, we used the non-parametric Kruskal-Wallis test to determine if there were statistically significant differences between two or more groups of an independent variables such as region, level of education and pharmacy job position on the continuous dependent variable that is the importance of counseling score (out of 10).

A P value < 0.05 was considered statistically significant for bi-variate analysis.

RESULTS

Pharmacists and pharmacies characteristics

A total of 207 participants were involved in the study. Fifty- point twenty four per cent were male. Mean age was 38.5 years. The demographic characteristics of the participants were described in Table 1.

Table 1: Pharmacists and pharmacies characteristics.

Characteristic	Value
Number of Pharmacies: no. (%)	207 (100%)
Gender	
Male: no. (%)	104 (50.24%)
Pharmacist Age: Mean ± SD year	38.5 ± 10.28
• 20 to 29.9 years: no. (%)	49 (23.7%)
• 30 to 30.9 years: no. (%)	67 (32.4%)
• 40 to 49.9 years: no. (%)	55 (26.6%)
• 50 to 59.9 years: no. (%)	30 (14.5%)
• 60 to 69.9 years: no. (%)	6 (2.9%)
Years of experience: Mean ± SD year	13.04 ± 10.28
• 1 – 4: no. (%)	32 (15.5%)
• 5 – 9: no. (%)	55 (26.6%)
• 10 – 20: no. (%)	82 (39.6%)
• 20 – 40: no. (%)	38 (18.4%)
Education	
• BPhm: no. (%)	114 (55.1%)
• PhamD: no. (%)	45 (21.7%)
• Master: no. (%)	27 (13%)
• PhD: no. (%)	8 (3.9%)
• BN: no. (%)	1(0.5%)
• BSBC: no. (%)	1(0.5%)
• Student: no. (%)	1(0.5%)
• No degree: no. (%)	10 (4.8%)
Pharmacy Region	
• Mount Lebanon: no. (%)	102 (49.3%)
• Beirut: no. (%)	41 (19.8%)
• South: no. (%)	34 (16.4%)
• North: no. (%)	25 (12.1%)
• Nabatiye: no. (%)	2 (1%)
• Unknown: no. (%)	3 (1.4%)
Pharmacy Job Position	
• Owner: no. (%)	131 (63.3%)
• Manager: no. (%)	34 (16.4%)
• Pharmacy assistant: no. (%)	24 (11.6%)
• Dispensary Manager: no. (%)	11 (5.3%)
• Stock and orders Manager: no. (%)	5 (2.4%)
• Unknown: no. (%)	2 (1%)

SD: standard deviation; BPhm: Bachelor of Pharmacy; PharmD: Doctor of Pharmacy; PhD: Doctor of Philosophy; BN: Bachelor of Nursing, BSBC: Bachelor of Science Biochemistry.

Pharmacists as self-prescribing professional's role

The availability of consultation area was reported in 80.2 % of the pharmacies. Upon patient's consultation, 46.6% of pharmacists asked first about the current medicine before prescribing any new one related to this consultation.

Figure 1 showed that, 48.3% of the prescribed medicines by pharmacists were NSAIDs, 20.5% antibiotics and only 0.3% nicotine replacement therapy.

Even though pharmacists rated counseling importance score on average of 9.09 out of 10, only 18.4% of the pharmacists perceived themselves as patient counselors; and most of the participants (26.6%) perceived themselves as medicine experts. Additionally, 60.7% of pharmacists spent between five and ten minutes on counseling and 70.5% of them practiced counseling more than seven times per day as shown in table 2.

Analysis of the importance of counseling score showed minimal non-significant variations between different Lebanese regions, level of participant's education and the job position at the pharmacy with P values of 0.218, 0.592 and 0589 respectively. The highest scores were noted in the North area and in the capital Beirut. One student and PhD holders scored the highest scores of 10 and 9.87 respectively. Community pharmacists' managers and dispenser managers recognized well this importance by scoring 9.58 and 9.54 respectively; in contrast to the stock and order managers who scored the least (score =8.2) as presented in table 3.

Table 2: Pharmacists as self-prescribing professional role.

Variable	Value
Consultation area: no. (%)	166 (80.2%)
First thing to do when a patient comes for consultation	
• Ask about current medicines: no. (%)	96 (46.6%)
• Ask about other present conditions: no. (%)	37 (17.9%)
• Directly treat the condition: no. (%)	6 (2.9%)
• Others: no. (%)	6 (2.9%)
• More than one: no. (%)	62 (30%)
Importance of counseling score (out of 10): Mean ± SD points	9.09 ± 1.80
Time spent on counseling	
• Less than 5 minutes: no. (%)	65 (31.6%)
• Between 5-10 minutes: no. (%)	125 (60.7%)
• More than 10 minutes: no. (%)	16 (7.8%)
Frequency of counseling	
• More than 7 counseling per day: no. (%)	146 (70.5%)
• Between 1-5 counseling per day: no. (%)	57 (27.5%)
• Once per day: no. (%)	4 (1.9%)
Pharmacist self-perceived first as	
• Medicine expert: no. (%)	55 (26.6%)
• Patient-centered practitioner: no. (%)	42 (20.3%)
• Patient counselor: no. (%)	38 (18.4%)
• More than one: no. (%)	38 (18.4%)
• Health promote: no. (%)	20 (9.7%)
• Dispenser of medication: no. (%)	11 (5.3%)
• Medicine supplier: no. (%)	1 (0.5%)
• Medicines monitor use: no. (%)	1 (0.5%)
• Medicine maker: no. (%)	1 (0.5%)

The importance of counseling score is out of 10, it ranges from one (least important) to ten (most important).

Table 3: Analysis of the importance of counseling score.

Variable	N	Mean	SD	Minimum	Maximum	P value
Region						
• North	25	9.3750	1.88386	1.00	10.00	0.218
• Beirut	41	9.3000	1.01779	7.00	10.00	
• Mount Lebanon	102	9.1000	1.89896	1.00	10.00	
• Nabatiye	2	8.5000	.70711	8.00	9.00	
• South	34	8.7059	2.16766	1.00	10.00	
• Total	204	9.1100	1.79835	1.00	10.00	
Level of education						
• No degree	10	9.5556	.72648	8.00	10.00	0.592
• B.Phm.	114	9.0973	1.72671	1.00	10.00	
• Pharm D	45	8.8636	2.22659	1.00	10.00	

• Master	27	9.0800	1.93477	1.00	10.00	
• PhD	8	9.8750	.35355	9.00	10.00	
• Student	1	10.0000	.	10.00	10.00	
• BN	1	10.0000	.	10.00	10.00	
• BSBC	1	8.0000	.	8.00	8.00	
• Total	207	9.0990	1.80384	1.00	10.00	
Job Position						
• Owner	131	8.9688	1.99186	1.00	10.00	0.589
• Manager	34	9.5882	.78306	7.00	10.00	
• Dispensary Manager	11	9.5455	.82020	8.00	10.00	
• Stock and orders Manager	5	8.2000	3.03315	3.00	10.00	
• Pharmacy assistant	24	9.0909	1.79706	2.00	10.00	
• Total	205	9.1000	1.81008	1.00	10.00	

SD: standard deviation; B Phm: Bachelor of Pharmacy; Pharm D: Doctor of Pharmacy; PhD: Doctor of Philosophy; BN: Bachelor of Nursing, BSBC: Bachelor of Science Biochemistry.

Kruskal-Wallis test was used to determine if there were statistically significant differences between two or more groups of an independent variables such as region, level of education and pharmacy job position on the continuous dependent variable that is the importance of counseling score (out of 10).

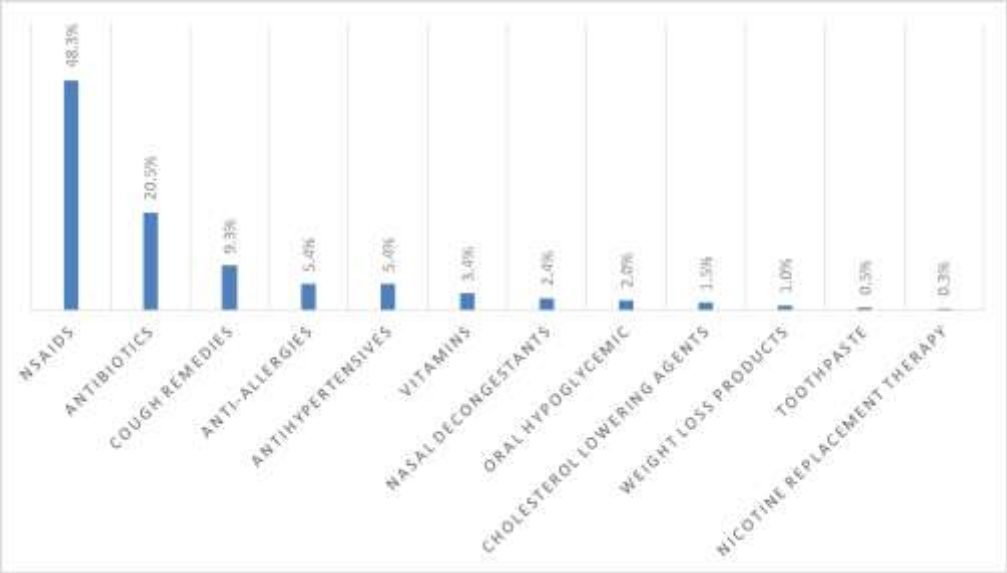

Figure 1: Percentages of prescribed medicines by the pharmacist.

When pharmacists were asked to define the word "Counseling", one-third replied as follows: "*giving information*" whether about prescribed medications or therapy or treated condition.

One pharmacist stated: "I have to *understand patient's health, social, economic status to transmit the right information to him in order to benefit to the maximum from his medicine*."

The other third replied "*giving advice* about the prescribed medicine-side effects, precautions and warning, drug-drug interactions and storage and/or the patient's condition".

One pharmacist stated: "Counseling is to *listen to patient then provide advice about medicines and their side effects, drug-drug interactions, lifestyle modifications."*

Other replies included statements such as
Counseling is to

- "*Make the patient understand his/her conditions, do necessary lifestyle modifications, pharmacotherapy understanding to enhance patient compliance".*
- "*Collect data from patient to interfere when needed*".
- "*Professional patient guidance using psychological methods*".

Only 2% of pharmacists were not able to define counseling, and didn't answer this question.

When the pharmacists were asked about strategies to improve counseling, suggestions mainly were focused on: establishing a private "counseling zone", improving communication skills of pharmacists, using pictograms, patients' educational materials –flyers and brochures-

and written instructions, adopting patient's medical record, remuneration on services offered in pharmacy, and pharmacists' continuous education.

Some pharmacists suggested strategies to improve counseling by:

- *Showing the patient that the pharmacist is the medicine expert rather than the physician"*
- "*Improving the patient perseverance about the pharmacist good knowledge.*"
- "Establishing *laws to oblige physicians to refer patient to pharmacist for counseling".*

Offered services at the pharmacy

Pharmacists offered their patients services whether in NCDs (Non-Communicable Diseases) or in case of emergency infections. For instance, 95.7% of pharmacists gave advices about smoking cessation, 97.6% about diet recommendations and 93.2% about the importance of physical activity. In case of high blood pressure, the majority (38.6%) of pharmacists referred their patients to the physician. Pharmacists also interpreted some laboratory data but in most cases, they referred patients to physician in case of abnormal values. Other services that were reported to be offered at the pharmacy included weight measurement (10.6%), wound care (7.2%) and administering- when needed-to patients, intramuscular or subcutaneous injections even it is prohibited by law (8.5%).

The major constraint to offer pharmacy services was the large workloads (63.3%) as reported by the participants in table 4.

Table 4: Services offered at the pharmacy.

Variable	Value
Advise patients about	
• **Smoking cessation: no. (%)**	198 (95.7%)
• **Healthy eating: no. (%)**	202 (97.6%)
• **Physical activity: no. (%)**	193 (93.2%)
Measure blood pressure at the pharmacy: no. (%)	196 (94.7%)
Monitor blood glucose: no. (%)	198 (95.7%)
Recommendations in case of high blood glucose:	
• **Call the Doctor**	80 (38.6%)
• **Advise about treatment and refer to the doctor**	61 (29.4%)
• **Give non-pharmacological tips**	57 (27.5%)
• **Not applicable**	9 (4.3%)
Lab values interpretation: no. (%)	181 (87.4%)
• Examples	
○ **General overview**	77 (37.2%)
○ **CBC**	54 (26%)
○ **Lipid panel**	4 (1.9%)
○ **Urine analysis**	23 (11.1%)
○ **H. pylori**	1 (0.48%)
Other offered services at the pharmacy	
• **None**	128 (61.8%)
• **Weight and height measurement**	22 (10.6%)
• **Wound Care**	15 (7.2%)
• **Injections (IM/SC)**	12 (8.5%)
• **Dermatology and cosmetology**	9 (4.3%)
• **Check TC and TG**	9 (4.3%)
• **Compounding**	7 (3.4%)
• **Piercing**	5 (2.4%)
Major constrains to offer pharmacy services	
• **Large Workload**	131 (63.3%)
• **Lack of Adequate staff**	31 (15%)
• **Others**	42 (20.3%)

CBC: complete blood count; H. pylori: Helicobacter pylori; IM: Intramuscular; SC: Subcutaneous; TC: Total Cholesterol; TG: Triglyceride.

Pharmacist as prescription dispenser

As shown in table 5, 67.1% of pharmacists kept a record for their chronic patients. Additionally, 58% of the participants reported that illegible handwritten prescription is the major cause of dispensing errors. In the case of prescribing errors, 54.6% of the participants

called the physician as first action. For most of them (56%), the major cause of medication errors was insufficient or missing information about co-prescribed medications. When dispensing medications, 84.5% of pharmacists explained to their patients expected adverse effects, but the majority (61.4%) mentioned only the most common ones.

Table 5: Pharmacist as prescription dispenser.

Variable	Value
Keep record for chronic patients: no. (%)	139 (67.1%)
Major cause of dispensing e2rrors:	
• **Illegible handwritten prescription: no. (%)**	120 (58%)
• **More than one: no. (%)**	46 (22.2%)
• **Spelling mistake: no. (%)**	11 (5.3%)
• **Similar/ Confusing names: no. (%)**	10 (4.8%)
• **Faults in dose selection: no. (%)**	10 (4.8%)
• **Dose or form not mentioned: no. (%)**	6 (2.9%)
• **Pharmacist fatigue: no. (%)**	2 (1%)
• **Interruption: no. (%)**	1 (0.5%)
• **Noise: no. (%)**	1 (0.5%)
First action to take in case of prescription error	
• **Call the physician**	113 (54.6%)
• **Ask more the patient**	68 (32.9%)
• **More than one**	16 (7.7%)
• **Call another colleague**	8 (3.9%)
• **others**	2 (1%)
Major cause of medication errors	
• **Insufficient info about co-prescribed medications**	116 (56%)
• **Duplication of therapy**	39 (18.8%)
• **Allergic sensitivities**	30 (14.5%)
• **More than one**	18 (8.7%)
• **Others**	4 (2%)
Explain to patients about expected side effect	175 (84.5%)
• Approach to explain about medication side effects	
○ **Most common**	127 (61.4%)
○ **Not applicable**	46 (22.2%)
○ **Sometime**	15 (7.2%)
○ **Call the doctor**	10 (4.8%)
○ **Read the leaflet**	4 (2%)
○ **Explain about benefit of treatment**	3 (1.5%)
○ **Percentages**	2 (1%)

DISCUSSION

To our knowledge, this study was the first to evaluate the understanding of Lebanese pharmacists in their counseling procedure in terms of knowledge, skills, duration and frequency. Patient counseling in Lebanon was studied in 2015 by Souheil Hallit et al,[9] from the patients 'point of view; 90% of patients agreed that they needed counseling.

There was an under-estimation of the importance of counseling among staff that were not in direct contact with patients (stock and order managers). Surprisingly, it was also detected with the Pharm-D holders who were supposed to be more aware of the importance of counseling.

There is no ideal amount of time to spend on counseling as it is rather dependent on various factors like patients' condition, patients' interest, as well as the pharmacist's work schedule.[10] In this study, most of the participants spent between five to ten minutes during a counseling session, this could be explained by the fact that participated Lebanese pharmacists perceived themselves first as medicine experts rather than patient counselor.

Taking a Patient-centered "Pharmaceutical Consultation" approach will support pharmacists in their prescribing decisions, this approach suggests that consultation session should start by identifying the reason for consultation and then gathering information.[11] In our study, 46.6% of pharmacists started their consultation session by asking patients about their actual medicines regimen omitting the initiation step.

The need for a private consultation area was expressed by our Lebanese pharmacists. These results correlate with a systematic review done by *Al Aqeel et al*, where results showed that private consultation area improved educational meetings,[12] this was supported also by Australian pharmacists.[13] Moreover, a study conducted in Qatari community pharmacies revealed that a lack of private counseling was a significant barrier for the pharmacists practice counseling.[14]

In Lebanon, some of the services that are offered in the community pharmacy are not remunerated as in other countries. The Australian Society of Hospital Pharmacists supports the continuation and scaling up of patient-focused professional services such as community pharmacist-led disease screening and general referral, smoking cessation support programs, and immunization.[15] Pharmacists in all the 50 US states, United Kingdom, Ireland, Portugal, Australia and New Zealand can administer injections after completing training sessions in immunology, aseptic technique and practical injection skills to obtain the certification required to administer injections.[16] In Lebanon, administering injections in pharmacies is prohibited by law; nevertheless, 8.5% of pharmacists in our study practiced this service mainly for influenza vaccination.

In this study, most of the pharmacists advised their patients about smoking cessation (95.7%), however they didn't correlate this with their prescribing of the nicotine replacement therapy products (0.3% only). The same scenario was observed when they advised about healthy eating (97.6%) and prescribing of weight loss products (1%). We can explain this attitude as a result of the large workloads and the lack of adequate training about public health topics and services.

We believe that if the contribution of the Lebanese pharmacists in patient's care is recognized by the health authorities at the national level, they would deliver better patient services. We found that their vital role in screening and referring NCDs patients was under-estimated.

Patient medication record systems facilitate pharmaceutical care and provide alerts about potential drug interactions between previously dispensed and newly prescribed medications.[17] Keeping medical records is especially important to avoid prescription of identical medicines in hospitalized patients. In our study, 67.1% of pharmacists kept the medical record of their chronic patients, but unfortunately, it was not shared between other pharmacies or other health care institutions. For this reason, 56% of the pharmacists found that the major cause of medication errors was insufficient information about co-prescribed medications.

Physician's illegible handwriting has been one of the most important contributing factors to medical errors[18] and Lebanon was not an exception in this study. In fact, 58% of the participants reported this reason as a major cause of dispensing error. *Aline Bou Maroun et al*, found that the major reason for ambiguous prescription was unclear handwriting,[19] this was also correlated with our results. To overcome this problem, computerized prescriptions could be a solution to avoid any reading or misinterpretation.

Prevention of errors at the prescribing stage is one of the important steps towards reducing medication errors.[20] In Lebanon, medication prescribing errors have been studied in the hospital but not in the community pharmacies.[21] In our study, most of the pharmacists reported the prescriptions' error directly to the physician in order to gather the required information; this attitude correlates with the international policies; for example in the United Kingdom, prescribing error must be discussed with the prescriber as soon as it is discovered.[22] There are no Lebanese guidelines to report medication prescribing error as in other countries like Malaysia.[23]

Almost 33% of the participants preferred to take information from the patient rather than from the physician; this could be explained by the poor inter-professional relationship between pharmacists and physicians, which is a worldwide problem. Inter-professional collaboration between physicians and pharmacists must continue to evolve to meet the medication management and healthcare needs of the community now and in the future.[24]

In Lebanon, the assessment of patients' knowledge and practices regarding their medication use and risks was discussed in several studies.[25,26] These studies showed that patient's counseling by the pharmacist can lead to a strong patient-pharmacist relationship and a better medication-related knowledge. The results in these studies showed sub-optimal medication-related knowledge, with a particular deficiency in adverse drug reaction knowledge. The pharmacists we interviewed didn't agree with the result; for instance, 64.4% of the participants explained to their patients about the most expected side effects. Additional studies are needed to find an explanation of this gap; is it because of poor communication between pharmacist and patient? Is it the duty of the prescriber to discuss adverse events with the patient?.

We suggest future studies that take into account all these aspects to further improve the validity of these results.

LIMITATIONS

The survey coverage area depended on the trainees' summer presence and data was mostly collected from Mount Lebanon. Data could not be representative of the entire community pharmacy population. The total sample size is acceptable regarding the coverage area but other sample groups may have other opinions.

CONCLUSION

In our study, community pharmacists perceived themselves as medicine experts although they admitted to know the importance of counseling. Illegible prescribers' handwriting and lack of shared medical record between healthcare providers were the major causes of medication errors. These findings invite the Lebanese pharmacists to better understand their role as patient counselors and to consider more cooperation between different healthcare professionals in Lebanon.

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