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Original article

OPINION AND KNOWLEDGE TOWARDS PHARMACEUTICAL CARE OF THE PHARMACISTS PARTICIPATED IN CLINICAL PHARMACY AND PHARMACEUTICAL CARE CONTINUING EDUCATION PROGRAM

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Abstract

The aim of this study is to assess Turkish community pharmacists' points of view about pharmaceutical care practice in Turkey. A self-administered questionnaire was conducted to community pharmacists who attended "clinical pharmacy and pharmaceutical care continuing education programs" organized by Turkish Pharmacists' Association Academy (n=385) between 2003 and 2005. Majority of the pharmacists (86.8%) were willing to provide pharmaceutical care services and 78.9% considered these services as pharmacists' duty. Participants listed the major barriers to conduct pharmaceutical care practice as follows: "lack of knowledge of drugs and disease states; lack of technical knowledge of how to provide pharmaceutical care practice; lack of communication with physicians and stationary workload". Our study indicated that pharmacists were willing to provide pharmaceutical care services and most of them considered lack of clinical knowledge as the major obstruct for providing the services.

Key words: *Community pharmacists, Pharmaceutical care services, Clinical pharmacy.*

Klinik Eczacılık ve Farmasötik Bakım Meslek İçi Programına Katılan Eczacıların Farmasötik Bakım Hakkındaki Bilgi Düzeyleri ve Görüşleri

Bu çalışmanın amacı, Türkiye'deki serbest eczacıların farmasötik bakım uygulamalarına bakış açılarını değerlendirmektir. Türkiye Eczacıları Birliği Akademisi tarafından 2003 ila 2005 yılları arasında düzenlenen 'klinik eczacılık ve farmasötik bakım sürekli eğitim programı'na katılan serbest eczacılara (n=385) anket uygulanmıştır. Eczacıların çoğu (%97.3) farmasötik bakım hizmetlerini vermek istediklerini ve %83.5'i bu hizmetin eczacının bir görevi olduğunu düşündüklerini belirtmişlerdir. Katılımcılar farmasötik bakım hizmetleri için en büyük engellerin ilaç ve hastalık durumu ile ilgili bilgilerin eksikliği, farmasötik bakım hizmetini nasıl sağlayacakları konusundaki teknik bilgi eksikliği, klinisyenlerle iletişim eksikliği ve devlet iş yükü olduğunu sıralamışlardır. Çalışmamız eczacıların farmasötik bakım hizmeti vermek istediklerini ve çoğunun klinik bilgi eksikliğini bu hizmeti sağlamakta önemli bir engel olarak düşündüklerini göstermiştir.

Anahtar kelimeler: *Eczane, Farmasötik bakım hizmetleri, Klinik eczacılık.*

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INTRODUCTION

In 1990, Hepler and Strand defined pharmaceutical care as the responsible provision of the drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life (1). Pharmaceutical care involves the process through which a pharmacist develops a therapeutic plan that will produce specific therapeutic outcomes for the patient. The concept of "pharmaceutical care" term has been accepted and implemented in many countries (2).

Although the definition of pharmaceutical care has been described long time ago; the term was interpreted inaccurately by most of the pharmacists. This concern was mentioned before by Hutchinson and Schumock who stated that, "pharmaceutical care will fail if each pharmacy organization or individual pharmacists are allowed to define pharmaceutical care for their own agenda" (3).

Pharmaceutical care is a relatively new concept in Turkey. A stepwise process has been followed in implementing the concept and education of clinical pharmacy and pharmaceutical care in Turkey. Recently the duration of undergraduate pharmacy education has been increased to five years, consisting more clinical content (ie. courses of pharmaceutical care, clinical pharmacy, pharmacotherapy, professional communication skills, etc) making a good opportunity for further implementation of these concepts (4, 5). The "Society of Clinical Pharmacy" which was established in 1998 with the purpose of promoting clinical pharmacy in Turkey, and The Turkish Pharmacists' Association Academy of Pharmacy has been organizing various continuing education programs on clinical pharmacy and pharmaceutical care since 2003. More than 1300 pharmacists have participated to these programs. Considering there are approximately 25000 community pharmacists in Turkey, it can be said that majority of pharmacists have not yet taken basic education on pharmaceutical care and clinical pharmacy. Moreover in Turkey, research studies have been done in the field of clinical pharmacy and pharmaceutical care (6, 7).

Previous studies showed that difficulties encountered in providing pharmaceutical care were lack of material, equipment, pharmacotherapy/ therapeutics information and motivation, and also difficulties in accessing medical history, clinical and laboratory data of the patients (8-10).

In the literature there are no published studies reflecting the Turkish community pharmacists' point of view regarding pharmaceutical care practices. Therefore, in this study, it was aimed to determine opinion and knowledge towards pharmaceutical care of pharmacists participated in clinical pharmacy and pharmaceutical care continuing education program.

EXPERIMENTAL

This study consisted of community pharmacists who attended the "clinical pharmacy and pharmaceutical care continuing education programs" organized periodically by the Turkish Pharmacists' Association. Throughout the two years period (2003-2005), first 500 attendees were invited to participate in this study at the beginning of each continuing education program. Those who accepted to participate were handled the questionnaires and were requested to fill them in.

The questionnaire was developed according to principles of pharmaceutical care in the literature (1, 11). The survey tool was a self-administered questionnaire designed in seven sections. In the first section of questionnaire, data regarding demographic characteristics of the pharmacists as well as the equipment and staff related characteristics of the community pharmacy were collected. The second section consisted of items questioning the pharmacists' general opinions on pharmaceutical care and utilized a 5-point Likert type scale (1=strongly disagree, 5= strongly agree). The third section consisted of two questions asking the present situation regarding the pharmacists' pharmaceutical care practices and the duration of patient counseling performed per each prescription. The fourth section consisting the questions evaluating the pharmaceutical care services in community pharmacy utilized a 5-point Likert

type scale (1=never, 5=always). The fifth section consisted of questions to assess barriers in providing pharmaceutical care practice and again used a 5-point Likert type scale (1=strongly disagree, 5=strongly agree). The sixth section questioned the pharmacists' ideas on patient groups requiring provision of pharmaceutical care services, using a 5-point Likert type scale (1=very necessary, 5=very unnecessary). The final section consisted of an item questioning the will of the pharmacists regarding pharmaceutical care provision in their pharmacies.

Categorical variables were expressed as numbers (n) and percentages (%), while the continuous variables were expressed as mean (standard error of the mean (SEM)).

RESULTS

The response rate of questionnaire was 77%. Of the total number 500 pharmacists invited, 385 accepted to involve in the study and filled-in questionnaires.

The mean (SEM) age of the pharmacists was 38.1 (0.50) years and 55.6% (n=214) were female. The mean (SEM) years of professional experience was 16.8 (0.46). The equipment and staff related characteristics of the community pharmacies were as presented in Table 1.

Table 1. Equipment and staff related characteristic of community pharmacy (n= 385).

Characteristic		n	(%)
Number of computers			
	1	212	55.1
	>1	173	44.9
Number of reference books			
	1	54	14.0
	2	93	24.2
	3	82	21.3
	>3	156	40.5
Number of professional periodicals			
	0	51	13.2
	1	90	23.4
	2	153	39.7
	>2	91	23.6
Number of pharmacy technicians			
	0	13	3.4
	1	105	27.3
	2	156	40.5
	3	79	20.5
	>3	32	8.3
Employment of at least a second pharmacist			
		30	7.8

In the present study, pharmacists were not employed as auxiliary staff in the pharmacies of 92.2% of the respondents; while, about 70% reported to employ ≤2 pharmacy technicians in their pharmacies.

Of the all pharmacists, 60.5% were aware of pharmaceutical care and 86.8% were willing to have a say when establishing the standards of pharmaceutical care in Turkey. Of the 385 pharmacists, 78.9% considered pharmaceutical care as their professional responsibility; while, 21.0% thought that it cannot be feasibly practiced in the pharmacy. The participants' opinions on pharmaceutical care were as shown in Table 2. The reasons stated by the pharmacists not willing to provide pharmaceutical care services were belief of pharmaceutical care as loss of time/ work, thought of inadequate professional satisfaction and lack of reimbursement.

Table 2. Pharmacists' opinions on pharmaceutical care (PC).

		%			
Opinions	**n**	**Non responders of the questionnaire**	**Strongly disagree/ Disagree**	**Neither agree nor disagree**	**Agree/ Strongly agree**
I am knowledgeable about PC	359	6.8	12.2	20.5	60.5
Pharmacists' opinions must be taken when establishing standards of PC in modification of related law.	364	5.4	3.4	4.4	86.8
PC is not the pharmacists' duty; there is no need for pharmacists' involvement	364	5.4	78.9	6.8	8.9
PC is the pharmacists' duty; but it cannot be practiced feasibly	365	5.2	51.2	22.6	21.0

Pharmaceutical care services in community pharmacy

About 60% of the pharmacist claimed to provide pharmaceutical care services; but, in fact they were mainly providing some kind of patient counseling services. Among those who claimed to provide pharmaceutical care services, only 22.5% counseled patients for more than 6 minutes; 61.9% counseled for 3-6 minutes and 15.6% for less than 3 minutes.

The pharmaceutical care related services reported to be provided by the pharmacists in the community pharmacy were as shown in Table 3. The most frequently provided service was "informing the patients about how to use the medications (98.2%)", followed by "informing the patients why they were prescribed the particular medications (82.3%)". Collecting patient-specific data which is one of the initial steps of pharmaceutical care practice was seen to be inadequate. Only 55.3% of the pharmacists reported to often/always take the patients' medical history; while, this rate was 46.0% for the medication history.

Table 3. Pharmaceutical care related services provided in the community pharmacy.

Pharmaceutical Care Services	n	%			
		Non responders of the questionnaire	Never/ Rarely	Occasionally	Often/ Always
Taking patients' medication history	381	1.0	12.2	40.8	46.0
Taking patients' medical history	381	1.0	8.4	35.3	55.3
Taking patients' allergy history	383	0.5	30.4	36.6	32.5
Taking patients' medication use history (smoking, alcohol consumption, etc)	382	0.8	35.8	40.0	23.4
Asking the patients reasons of consuming their particular non-prescription/OTC* medications	381	1.0	14.3	22.6	62.1
Informing the patients why they were prescribed the particular medications	382	0.8	1.6	15.3	82.3
Informing the patients how to use their medications	383	0.5	0.3	1.0	98.2
Informing about side effects of the medications	383	0.5	13.2	40.3	46.0
Informing about storage of the medications	382	0.8	8.0	20.8	70.4
Informing about drug and/or food interactions	380	1.3	27.2	29.9	41.6
Controlling the appropriateness of the prescribed medication for a particular patient	380	1.3	28.8	33.8	36.1
Monitoring outcomes of therapy	377	2.1	13.7	22.6	61.6

**OTC: over-the-counter*

Barriers in providing pharmaceutical care

Although pharmacists pointed out lack of clinical knowledge of disease states (58.9%), stationary workload (46.7%), lack of technical knowledge on how to provide pharmaceutical care (48.4%), lack of knowledge of drugs (47.5%) and inadequate communication with physicians (41.5%) as barriers in providing pharmaceutical care, communication with patient, the physical condition of the pharmacy and access to drug information were not accepted as barriers of pharmaceutical care by most of the respondents. Also, professional experience was not found to be a factor influencing pharmacists' thoughts on pharmaceutical care. Communication with patients, the physical conditions of the pharmacy and availability of sources of information were not deemed to be barriers for the pharmacist in providing pharmaceutical care (Table 4).

Table 4. Perceived barriers in providing pharmaceutical care practice.

Barriers	n	%			
		Non responders of the questionnaire	Strongly disagree/ Disagree	Neither agree nor disagree	Agree/ Strongly agree
Lack of knowledge of drugs	379	1.6	41.8	9.1	47.5
Lack of clinical knowledge of disease states	380	1.3	28.6	11.2	58.9
Lack of technical knowledge on how to provide pharmaceutical care	373	3.1	33.2	15.3	48.4
Lack of communication with physicians	382	0.8	49.4	8.3	41.5
Lack of communication with patients	381	1.0	79.7	4.2	15.1
Lack of patient's time/demand	380	1.3	55.6	15.1	28.0
Stationary workload related to state's regulatory issues	380	1.3	42.1	9.9	46.7
Lack of information sources	379	1.6	63.1	7.8	27.5
Lack of knowledge on how to reach the information	376	2.3	65.2	8.1	24.4
The physical conditions of the pharmacy	377	2.1	77.6	6.5	13.8
Insufficient number of auxiliary staff	376	2.3	71.9	6.0	19.8
Personality characteristics	374	2.9	88.6	3.1	5.4
Overload of responsibilities as a pharmacist	375	2.6	50.9	6.8	39.7

DISCUSSION AND CONCLUSION

In the present study, majority of the pharmacists (86.8%) were willing to provide pharmaceutical care services and 78.9% considered these services as pharmacists' duty. Participants listed the major barriers to conduct pharmaceutical care practice as follows: "lack of knowledge of drugs and disease states; lack of technical knowledge of how to provide pharmaceutical care practice; lack of communication with physicians and stationary workload".

In a study investigating the community pharmacists' attitudes about pharmaceutical care in Malta, 72% of the community pharmacists declared their willingness to provide pharmaceutical care; in that study, reimbursement circumstances (30.9%), lack of time (29.1%), need of qualified support staff (23.6%) and the insufficient communication between physicians and pharmacists were mentioned as barriers of supplying pharmaceutical care by community pharmacists (12).

Lack of time was suggested as the most important barrier to pharmaceutical care by 59% of the pharmacists in different practice settings in Argentina; this was followed by lack of specific training, lack of patient communication skills and limited space in pharmacy (10). In contrast with different studies conducted in European countries (12-13), only 5% of the pharmacists mentioned lack of communication with the other health-care providers as a barrier to pharmaceutical care and reimbursement circumstances was not indicated as a

barrier to pharmaceutical care by the pharmacists in Argentina (10). Different from our study, access to drug information was not seen as an important barrier to pharmaceutical care by pharmacists from Argentina (10).

In another similar study conducted in New Zealand where the pharmacists' attitudes towards pharmaceutical care and barriers to pharmaceutical care were assessed, it was seen that 60% of the respondents accurately understood pharmaceutical care; 55% supported the concept of pharmaceutical care in New Zealand and most (75%) of the respondents stated the requirements of improvement in the clinical knowledge (14). Lack of time (87%), lack of reimbursement (81.9%), inappropriate physical space (54.4%) and limited access to patient medical records (61.3%) were identified as major barriers to pharmaceutical care, which were similar to those mentioned by pharmacists in different countries (14,15).

In the study, as similar to the present study, a 38 item questionnaire was self-completed by the 130 community pharmacists in northwest China to assess the perception of community pharmacists towards pharmaceutical care (16). Generally, it was seen that the community pharmacists in northwest China did not well recognized the definition of the pharmaceutical care. In accordance with the present study, these pharmacists performed only some of the pharmaceutical care services in the community pharmacy. It was determined that the professional time of the community pharmacists in northwest China consumed with traditional pharmaceutical services such as dispensing and counselling (16). The community pharmacists in northwest China reported lack of time, information, skills, and support from other health professionals and economic issue as the barriers to the provision of pharmaceutical care (16). These barriers also reported by the community pharmacists in the Turkey in the present study. The Fang et al offered increasing the number of pharmacists participated in effective continuing education programmes to overcome through these barriers (16).

In the study that evaluated the contribution of the structured continuous professional development module to community pharmacy, 89.58% of the pharmacists did not aware of the screening services that could be provided in community pharmacy (17). An also it was reported that 56.25% of them did not aware of the concept of adverse drug reactions. As similar to present study; the most important barriers that reported for the community pharmacy was found as lack of time, space in the pharmacy to provide community pharmacy services and economic benefits (17).

It was seen that the health professionals in United Arab Emirates willing to collaborate with the clinical pharmacists especially in monitoring drug therapy and improving patient care by reducing drug related problems (18). Abu-Gharbieh et al suggested organising clinically- oriented education program to increase the number of clinical pharmacists in their country (18).

On the other hand the pharmacists did not see the lack of auxiliary staff as a barrier to pharmaceutical care provision. Rossing et al. (19) found that Danish community pharmacists declared the shortage of pharmacist personnel, lack of computer equipment and lack of opportunities for patient counseling as barriers to implement pharmaceutical care. In another research conducted by the same authors in 2001, Danish pharmacists determined the lack of financial resources in pharmacy as the most important barrier to pharmaceutical care (13). Pharmacists in Northern Ireland pointed out the difficulties in providing pharmaceutical care routinely as lack of time, financial issues, and lack of private counseling area and low public expectation of the pharmacy profession (20). The lack of qualified auxiliary staff could be the main factor leading the pharmacists to identify insufficient time as a major barrier to provide pharmaceutical care. This may be solved by employing more pharmacists as the auxiliary staff and providing continuous education to the pharmacy technicians.

In Thailand, pharmacists perceived lack of therapeutic knowledge and clinical problem solving skills (54.8%), lack of role model who provides pharmaceutical care (53.8%), lack of time (54.2%) and limited access to patients' medical information (40.1%) as barriers to pharmaceutical care provision (9). As similar to our study results, the Thai pharmacists did not see lack of communication with patient as a barrier to pharmaceutical care provision (9).

The sufficient and effective patient communication was an important component of pharmaceutical care process and in the studies the pharmacists did not list lack of communication with patients as a barrier to pharmaceutical care (9, 14). When interrogated the length of patient counseling session, in the present study, only 22.5% of respondents counseled patients more than 6 minutes and 77.5% of them counseled less than 6 minutes.

In general, the respondents in this study declared that they did not monitor the outcomes of therapy which is an important part of the responsible provision of pharmacotherapy. They suggested lack of time and skills, as well as technical issues as the reasons for this. These comply with the findings of Thai pharmacists who were also poor at documenting drug therapy monitoring and seldom offered their feedback to the physician about the patient's progress and outcome (9).

According to the pharmaceutical care principles, pharmaceutical care should also be provided to those consuming non-prescription medications. However, in the present study the participants indicated that pharmaceutical care was more necessary for patients using antiasthmatic, antidiabetic, coronary heart disease, antihypertensive medications and antibiotics than those using non-prescription/over-the-counter medications. This may suggest that the pharmacists who claim to provide pharmaceutical care are not to be familiar with pharmaceutical care definition. This also complies with the fact that the pharmacists in this study provided pharmaceutical care related services insufficiently.

There were some limitations to the present study. It must be considered that these pharmacists were willing to participate in clinical pharmacy and pharmaceutical care continuing education program. So, the participants in the present study could not represent in the entire pharmacist in Turkey. The objective of the present study was to determine opinion and knowledge towards pharmaceutical care of pharmacists participated in clinical pharmacy and pharmaceutical care continuing education program; therefore the questionnaire was applied to the pharmacist at the beginning of the education program. Further studies will be designed to assess the impact of this continuing education program on participants' opinion and knowledge towards pharmaceutical care.

Although, most of the pharmacists were willing to provide pharmaceutical care practices, almost half of the respondents seemed they do not to completely know the concept of pharmaceutical care. Lack of clinical knowledge and skills, as well as technical knowledge on how to provide pharmaceutical care were seen as the major barriers to provide pharmaceutical care in Turkey. Continuing education programs would be an important approach for improving pharmacists' knowledge of pharmaceutical care and clinical pharmacy principles and identifying and realizing the role of pharmacists in the management of different diseases. Hence, increasing the availability of patient oriented education programs and promoting graduate degree programs might improve both the knowledge of the pharmacists and the quality of the pharmaceutical care practices and related services.

As a conclusion, our study indicated that pharmacists were willing to provide pharmaceutical care services and most of them considered lack of clinical knowledge as the major obstruct for providing the services.

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