

The role of community pharmacists in public health and public health related problems which they encounter

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ABSTRACT

Background and Aims: This study was conducted in order to identify the role of community pharmacists in public health and the public health related problems which are encountered.

Methods: In this cross-sectional study, 87 community pharmacists answered a questionnaire form about sociodemographic characteristics, public health counseling roles and barriers. The data was summarized as mean \pm standard deviation and percentage. Chi-square test was used to compare the categorical data.

Results: 93.1% of the community pharmacists considered that they had an active role in the protection of public health, while the percentage of those who thought they were able to realized it was 78.2%. Limited authority (63.2%), insufficient time and workload (52.6%) were the leading causes of ineffectivity of the pharmacists in public health. The causes that prevented receiving consultancy services were shame (64.4%), the education level of the client (51.7%) and gender difference between the pharmacist and client (48.3%). The pharmacists thought that their professional reputation should be improved in order to improve their consulting role (35%).

Conclusion: Although there are many occupational problems of pharmacists in Turkey, pharmacists voluntarily provide a consultancy service about many subjects for the protection of public health. Legal arrangements are needed to make pharmacies public health counseling centers.

Keywords: Pharmacists, Public health, Turkey, Pharmacy, Health promotion

INTRODUCTION

Pharmacists are the most accessible healthcare professionals in the society (World Health Organization, 1998; Eades, Ferguson, & O'Carroll, 2011; Beshir & Bt Hamzah, 2014). Community pharmacies are continuously in communication with the society, and there is no need to make an appointment for receiving consultancy. Healthy individuals meet with health professionals as well as patients in pharmacies, so pharmacies have an important potential for public health (Anderson, Blenkinsopp, & Armstrong, 2003; Erku et al., 2017). Due to these characteristics of them, they can provide solutions to the problems related to health protection and health improvement in public health services (Erku et al., 2017).

In addition to their pharmacological services, pharmacists also have consultancy and health education roles in health promotion programs. From this point of view, pharmacists play an active role in the provision of public health services (World Health Organization, 1998; Eades et al., 2011). Pharmaceutical public health has been defined as: "The application of pharmaceutical knowledge, skills and resources to the science and art of preventing disease, prolonging life, promoting, protecting and improving health for all through the organised efforts of society" (Walker, 2000). In many countries, such as England, America, Canada

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and Sweden, community pharmacists are active in public health issues, such as smoking cessation, diabetes monitoring, following up on cholesterol and blood pressure, folic acid and pregnancy, asthma, immunization, oral health, emergency hormonal contraception (Anderson et al., 2003; Saramunee et al., 2015; Agomo, Udoh, Kpokiri, & Osuku-Opio, 2018).

Turkey ranks first and France second in terms of the number of pharmacies. According to the number of registered pharmacies in the country, the top five countries are Italy, France, Spain, Germany and Turkey. There were 34,870 pharmacists in Turkey and 25,896 of them were community pharmacists according to the data of 2018 (Turkish Pharmacists Association, 2018). Turkish Pharmacists' Association defined pharmaceutical public health competencies of pharmacists. These competences include providing information and advice on medications and other health products, health promotion and improvement, as well as identifying basic health needs, prevention and control of diseases, advising on promoting a healthy lifestyle (Turkish Pharmacists Association, 2015).

Emergency contraception was provided in community pharmacies in Turkey while diabetes and asthma management services were provided within the scope of My Counsellor Pharmacy Project. The public health services, such as blood pressure measurement, cholesterol measurement, glucose measurement, weight measurement, pregnancy testing, treatment of smoking cessation, hypertension management and vaccination services are not officially provided in pharmacies. The My Counsellor Pharmacy Project was launched in December 2014 by the Turkish Pharmacists Association. This project supports the continuous professional development of pharmacists. This project has been developed for pharmacists to receive health training regularly and train their counselees. At the present time the project is carried out as a pilot application in Turkey and it is aimed to spread the project across the nation in the future. The project is a step taken for the continuous training of pharmacists. Continuing education and professional development are not compulsory in Turkey while they are compulsory in many European countries. Therefore, this project is important for the professional development of pharmacists (Turkish Pharmacists Association, 2018).

This study was carried out to determine the current roles of community pharmacists in public health and their problems.

MATERIALS AND METHODS

This is a cross-sectional study. In Turkey there are 81 provinces and the city Niğde was chosen for the researcher to access easily. The study consisted of community pharmacists ($n=100$) in Niğde province of Turkey. The sample was not selected; it was aimed to reach the whole universe. 87 pharmacists were included in the study. Firstly, all pharmacies were informed about the study via the Chamber of Pharmacists in the Niğde. The pharmacies where pharmacists were not present, were continuously visited by the researcher until the pharmacists were met. A 17-question, questionnaire form was prepared by the researcher according to the literature, for the purpose of determining the characteristics of the pharmacists and pharmacies (age, sex, educational background, duration of pharmacy

business, location of pharmacy, position of pharmacy, number of staff except the pharmacist, daily number of patients), ways of accessing information, characteristics of counselees, service provided by pharmacy, consultancy subjects and problems encountered. Questionnaire questions varied according to question types and they included questions that could be answered as yes/no/I have no idea, multiple-option questions for pharmacists and open-ended questions. The data was collected by using this questionnaire form applied by face to face interviews with the pharmacists who accepted to participate in the study.

The data were analyzed with SPSS 21.0 (version 21.0, SPSS, Inc, Chicago, IL, 2012). The data were transferred to the computer and summarized as mean±standard deviation and percentage. Chi-square test was used to compare categorical data (used to compare qualitative variables such as pharmacists' active role in public health, providing counselling and having adequate information about counselling with qualitative variables such as age, sex, occupational year, expertise, location of pharmacy, number of staff and number of patients). $p<0.05$ was accepted as statistically significant.

Ethical approval: The study was carried out with the approval of Niğde Ömer Halisdemir University Ethics Committee (No:2018/11-05). Permission was also obtained from the Niğde Chamber of Pharmacists.

RESULTS

In this study, 87 of 100 pharmacies in the Niğde province of Turkey were included. 42.5% of the pharmacists were female. According to the Turkish Statistics for the year 2018, the ratio of female pharmacists in Niğde was lower than the ratio of female pharmacists in Turkey (Turkish Pharmacists Association 2018). The mean age was 44.3 ± 16.0 years. 20.7% of the pharmacists were 65 years old or older. 13.8% of them were senior pharmacists. Their mean working year as a pharmacist was 19.0 ± 14.4 years. 55.2% of the pharmacies were located in the city center. 32.2% of the pharmacies were close to a hospital; 33.3% were close to a family health center; 34.5% of them were in the center of province. 56.3% of the pharmacies had 2 or more personnel except pharmacists. 52.9% of the pharmacies had 51-100 patients a day (Table 1).

More than half of the pharmacists (55.2%) thought that the public health course in the University education was not sufficient. The pharmacists reached up-to-date information on health through the Internet (87.4%), journals-books (58.6%) and social media (54%). Nearly half of the pharmacists (49.4%) stated that they obtained information from their colleagues. 75.9% of the pharmacists stated that they could use the internet effectively. While 93.1% of the pharmacists believed that they played an active role in protecting public health, one fifth of them (21.8%) thought that they were not active in protecting public health, considering their present condition. It was determined that there was no significant difference between the pharmacists in the city center and in the countryside in terms of being active in public health ($\chi^2=0.104, p=0.748$). The pharmacists who were near the hospital thought that they were more active ($\chi^2=7.741, p=0.021$).

Table 1. Sociodemographic characteristics of pharmacists and pharmacy locations.

Sociodemographic Characteristics	N	%
Gender		
Female	37	42.5
Male	50	57.5
Age		
25-40	47	54.0
41-55	14	16.1
56-75	26	29.9
Education Level		
Undergraduate	75	86.2
Master	12	13.8
PhD	-	-
Working experience as a pharmacist		
1-10 years	33	37.9
11-20 years	21	24.1
21-30 years	10	11.5
31 years or longer	23	26.4
Location of the Pharmacy		
City Center	48	55.2
District	34	39.1
Town	5	5.7
Location of the Pharmacy		
Near a Hospital	28	32.2
Near a Family Health Center	29	33.3
On a Central Street	30	34.5
Number of Personnel in Pharmacy except pharmacists		
0-2	49	56.3
3 or more	38	43.7
Daily Patient Number		
50 or below	33	37.9
51-100	46	52.9
101 or above	8	9.2

N: Number of respondents

A question was addressed to the pharmacists who thought that they were not active in public health, containing their reasons for not being active, as well as multiple options and open-ended expression. Accordingly the health system, the limitation of authority (63.2%), insufficient time and workload (52.6%) were among the main reasons for the ineffective role of the pharmacists in public health (Table 2).

Table 2. Reasons of "Pharmacists' Inactive in Public Health"*

Reason	N	%
Health system	12	63.2
Authority limitation	12	63.2
Insufficient time	10	52.6
High workload	10	52.6
Unsuitable place	6	31.6
Personnel inadequacy	5	26.3
Other	5	26.3

*Multiple choices were marked, N: Number of respondents

77% of the beneficiaries of pharmacy services were the individuals with low educational and socioeconomic status. The question of "In your opinion, what are the first three occupational groups in which the community receives counseling on health-related issues?" was answered as pharmacists (50.6%), physicians (40.2%), and health personnel (55.2%). In pharmacies, prescription medicine (98.9%), counseling (34.5%) and non-prescription medicine (21.8%) services were provided, respectively. 13.8% of the pharmacists stated that consultancy service increased; 54% of them stated that consultancy service had not changed; 14.9% of them stated that it decreased in the last 6 months.

The obstacles for receiving counseling services from pharmacists are presented in Table 3. Feeling ashamed by the clients (64.4%), their educational status (51.7%), gender difference between a pharmacist and a client (48.3%) were the obstacles determined, respectively (Table 3). Nowadays, the internet has an important place in our lives. The rate of pharmacists who thought that the widespread use of the internet affected the pharmacists' counseling roles was 69.4%. The pharmacists thought that most of the clients came to the pharmacy with the wrong information because of increased internet usage (71.2%). While, for the pharmacists, the widespread use of the internet increased their access to health information (35.6%) (Table 4). 47.1% of the pharmacists made open-ended suggestions for the purpose of increasing counselling services. Most of them answered as increasing the professional reputation

Table 3. Obstacles for "Receiving Consultancy Services"*

Obstacle	N	%
Client's educational status	45	51.7
Gender difference	42	48.3
Shame	56	64.4
Being crowded of pharmacy	21	24.1
Inability to communicate appropriately	17	19.5
Busying of the pharmacist	19	21.8
Other	7	8.0

*Multiple choices were marked, N: Number of respondents

Table 4. Effect of internet usage on pharmacists' counseling roles*

Variable	N	%
My counseling role decreased	20	33.9
My counseling role increased	10	16.9
My Access to information increased	21	35.6
Clients came with wrong information	42	71.2
Clients are informed	9	15.3
Other	2	3.4

*Multiple choices were marked, N: Number of respondents

Table 5. Pharmacists' counselling rate and their sufficiency in counselling.

Consultancy Issues	N	%	Knowledge Sufficient	
			N	%
Smoking cessation			70	80.5
Yes	75	86.2		
No	12	13.8		
Alcohol cessation			66	75.9
Yes	33	37.9		
No	54	62.1		
Substance Addiction			62	71.3
Yes	20	23.0		
No	67	77.0		
Healthy Nutrition			69	79.3
Yes	64	73.6		
No	23	26.4		
Weight Control			69	79.3
Yes	57	65.5		
No	30	34.5		
Physical Activity			67	77.0
Yes	50	57.5		
No	37	42.5		
Communicable Diseases			61	70.1
Yes	49	56.3		
No	38	43.7		
Vacines			64	73.6
Yes	55	63.2		
No	32	36.8		
Hypertension			75	86.2
Yes	77	88.5		
No	10	11.5		
Diabetes			73	83.9
Yes	76	87.4		
No	11	12.6		
Hyperlipidemia			75	86.2
Yes	72	82.8		
No	15	17.2		
Asthma-COPD*			75	86.2
Yes	74	85.1		
No	13	14.9		
Rational Drug Use			68	78.2
Yes	71	81.6		
No	16	18.4		
Emergency Contraception			63	72.4
Yes	36	41.4		
No	51	58.6		
Family Planning Methods			68	78.2
Yes	42	48.3		
No	45	51.7		
Sexually Transmissible Diseases			69	79.3
Yes	34	39.1		
No	53	60.9		
Suicide Risk			54	62.1
Yes	11	12.6		
No	76	87.4		
Osteoporosis			68	78.2
Yes	65	74.7		
No	22	25.3		
Total	87	100		

*Chronic Obstructive Pulmonary Disease, N: Number of respondents

Table 6. Issues in which pharmacists provide counselling according to their sex.

Issues	Female Pharmacists				Male Pharmacists				X ²	P
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%		
Smoking cessation	32	86.5	5	13.5	43	86.0	7	14.0	0.004	0.948
Alcohol cessation	7	19.0	37	81.0	26	52.0	24	48.0	9.884	0.002
Substance Addiction	6	16.2	31	83.8	14	28.0	36	72.0	1.668	0.197
Healthy Nutrition	32	86.5	5	13.5	32	64.0	18	32.0	5.529	0.019
Weight Control	28	75.7	9	24.3	29	58.0	21	42.0	2.941	0.086
Physical Activity	22	59.5	15	40.5	28	56.0	22	44.0	0.104	0.747
Communicable Diseases	19	51.3	18	48.7	30	60.0	20	40.0	0.647	0.421
Vaccines	21	56.8	16	43.2	34	68.0	16	32.0	1.156	0.282
Hypertension	34	91.9	3	7.1	43	86.0	7	14.0	0.726	0.394
Diabetes	33	89.2	4	10.8	43	86.0	7	14.0	0.196	0.658
Hyperlipidemia	32	86.5	5	13.5	40	80.0	10	20.0	0.627	0.428
Asthma-COPD*	33	89.2	4	10.8	41	82.0	9	18.0	0.865	0.352
Rational Drug Use Emergency	31	83.8	6	16.2	40	80.0	10	20.0	0.203	0.652
Contraception	21	56.8	16	43.2	15	30.0	35	70.0	6.276	0.012
Family Planning Methods	21	56.8	16	43.2	21	42.0	29	58.0	1.854	0.173
Sexually Transmissible Diseases	12	32.4	25	67.6	22	44.0	28	56.0	1.195	0.274
Suicide Risk	4	10.8	33	89.2	7	14.0	43	86.0	0.196	0.658
Osteoporosis	33	89.2	4	10.8	32	64.0	18	32.0	7.141	0.008

*Chronic Obstructive Pulmonary Disease, N: Number of respondents

(35%) and providing informative regular meetings and in-service training (33.3%). In addition, the following recommendations were given: not seeing pharmacies as a commercial establishment, paying hospital admissions in hospitals, reducing commercial concerns of pharmacists, reducing pharmaceutical procedures, introducing pharmacy, increasing professional unity, paying wages for counseling services, availability of a pharmacist in a pharmacy, communication of pharmacists with patients, compliance of pharmacists with the ethical rules, the inspection of internet products, improving pharmacists by themselves, increasing the authorities of pharmacists, establishing an official web site where pharmacists can benefit about counselling issues.

Several consultancy services were given about many public health issues in the pharmacies (Table 5). The main issues were related to hypertension (88.5%), diabetes (87.4%) and smoking cessation (86.2%). The issues in which the pharmacist thought that they had insufficient information, were suicide risk (37.9%), infectious diseases (29.9%) and substance addiction (28.7%).

The state of receiving counseling was compared with variables such as age, gender, occupational year, speciality, location of pharmacy, number of personnel and number of patients. According to the location of pharmacy; the pharmacists in the city center provided more counseling for physical activity ($\chi^2=10.457, p=0.005$) and emergency contraception ($\chi^2=10.009, p=0.007$), compared to the pharmacists in the countryside. Also, significant differences were found in some issues in which counseling was provided according to the pharmacist's gender. Accordingly, the female pharmacists provide more counseling about healthy nutrition, emergency contraception and osteoporosis than the male pharmacists, whereas, the

male pharmacists provide more counseling about alcohol cessation compared to the female pharmacists (Table 6).

The male pharmacists thought that they had more adequate information about smoking cessation ($\chi^2=6.806, p=0.009$), alcohol cessation ($\chi^2=4.252, p=0.039$), drug addiction ($\chi^2=4.381, p=0.036$) and rational drug use ($\chi^2=4.232, p=0.040$) than the female pharmacists.

DISCUSSION

When mean numbers of personnel working in a pharmacy are compared between European countries, the pharmacies in Turkey have the lowest mean number of employees as 3 while the pharmacies in Denmark have the highest mean number of employees as 14 (Turkish Pharmacists Association, 2018). Similarly, more than half of the pharmacists enrolled in our study had 2 or more personnel.

More than three quarters of the pharmacists use the Internet effectively (75.9%). In contrast to our study, a study performed in the United Kingdom in 2017 identified the reluctance of the pharmacists to use technology and social media as one of the obstacles in public health (Agomo, Portlock, & Ogunleye, 2017).

More than one-fifth of the pharmacists thought that they did not have an active role in the protection of public health due to the health system, authority limitation, insufficient time and high workload. In a study conducted on pharmacists, similar results to our findings were obtained, such as the inability to allocate adequate time to patients/inability to give satisfactory answers to patients, providing a consultancy service for the Social Security Institution, frustration, lack of time for self-improvement (Gülpınar, Uzun, & Yalim, 2015). In another study

conducted in the United Kingdom, the health system and time limitation were defined as an obstacle for pharmacists to carry out public health roles (Agomo et al., 2017). More than three quarters of the beneficiaries of pharmacy services have low education and income levels. The level of education and health literacy are related concepts (Balçık, Taskaya, & Sahin, 2014). This result shows that the counseling service is necessary on its own and pharmacies are a good opportunity for counseling.

Although the occupational group was asked, the third occupation group which was consulted on health issues was determined as neighbour, friend, television, internet and herbalist by 30% of the pharmacists. In a study, the rate of using traditional medical methods was found to be 65.8% (Oral, Ozturk, Balci, & Sevinc, 2016). This result shows that traditional practices still play an important role in health. The most important factors affecting the counseling situation were shame, education, and gender. This situation can be explained by the cultural characteristics of Turkish society except the lack of education.

As is the case in different areas, especially in the field of health, the internet which is used effectively and widely can cause undesired results when not being used carefully (Gorkemli, 2017). Unhelpful or wrong advices found on the Internet and social media may lead to important health problems (Prasad, 2013). The fact that the clients came to the pharmacy with wrong information showed that they did not use the internet resources rationally.

The pharmacists thought that their professional reputation should be increased. Similarly, the pharmacists thought that their professional reputation decreased in another study conducted with the pharmacists (Gülpınar et al., 2015).

The role of community pharmacists as an active contributor to public health in addition to their traditional role in medication is recognized around the World (Eades et al., 2011). Although it is officially limited, pharmacists consult on numerous public health issues such as hypertension, diabetes, smoking cessation, hyperlipidemia, asthma- Chronic Obstructive Pulmonary Disease (COPD) and weight control. While, the counseling for alcohol abuse, substance abuse and suicide risk were least provided. In contrast to our study, it was found that a small number of pharmacies provided counseling services on issues, such as smoking cessation, weight management, hypertension screening, diabetes, dyslipidemia in a study conducted in Ethiopia. The counseling for screening of infectious diseases, sexually transmitted diseases, emergency contraception methods and alcohol dependence were most provided (Erku & Mersha, 2017). This result shows that each country has different public health problems and needs for counseling.

The subjects in which the pharmacists thought that they had insufficient knowledge were suicide risk, communicable diseases and substance abuse. Professional development is not compulsory for pharmacists in Turkey. In order to meet the educational needs systematically, professional development should be made compulsory.

The fact that the pharmacists in the city center provided more counseling for physical activity than the pharmacists in the

countryside might be associated with the fact that people in cities lead a more sedentary life and thus, need physical activities more. On the other hand, the fact that counseling for emergency contraceptive methods was provided more in the city center might be associated with the fact that urban women want fewer children due to reasons, such as being more aware of the presence of emergency contraceptive methods, greater participation in the labor force and higher educational level. The female pharmacists mainly provided counseling for issues concerning women and affecting their health, such as healthy nutrition, emergency contraception and osteoporosis. On the other hand, the male pharmacists mainly provided counseling for alcohol cessation, which is encountered in men. According to these results, it is possible to conclude that the counselees consult with fellow pharmacists for some issues.

Keeping pharmacists away from bureaucratic obstacles in Turkey, improving their professional reputation, preventing pharmacies from being perceived as trading houses, providing financial support to pharmacies' public health services as in the United States and fulfilling their training needs systematically, are important. According to these findings, it can be suggested for the Turkish Union of Pharmacists to conduct studies in order to determine problems faced by pharmacies across Turkey and to lead in establishing a system for continuous training of pharmacists. Public health services which are provided voluntarily in pharmacies in Turkey should be made formal via laws.

CONCLUSION

In conclusion, there were no studies within this scope in Turkey before this study. In this study, the current situation of the pharmacists in Turkey and their problems in terms of public health were identified. Although pharmacists in Turkey face professional problems (such as bureaucratic obstacles, work load, limitation of authority), it is possible to state that they usually play a voluntarily active role in protecting and developing public health. There is a need for more scientific studies in order to make the active participation of pharmacists in public health seem visible and to enhance it.

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