

## Original Article

# A Population-Based Study on Patients Complaining Regarding Community Pharmacies Services

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## INTRODUCTION

One of the most fundamental rights of a consumer is their familiarity with the authorities in charge of settling the complaints from the pharmacies as drugs and pharmaceuticals have a close relationship with people's health and well-being.<sup>[1,2]</sup> For centuries, patients have easily entrusted their body and soul to their physicians because they believed that physicians could relieve their pains and keep their secrets.<sup>[3]</sup> Physicians have long

**ABSTRACT** **Objective:** Patients' complain regarding pharmaceutical services at community pharmacies is a fundamental issue as it can directly affect people's service utilization. For the first time in Iran, this survey aimed to investigate the experience of people regarding declare a complaint against the pharmacy sectors as a community-based study. **Methods:** In this cross-sectional study, over 100 samples based on postal codes were randomly selected from the city of Shiraz in 2017–2018. The data collection instrument was designed in two parts (demographic and social profile which record the complaint experiences against pharmacists, pharmacy services, etc.). The data were analyzed by SPSS. **Findings:** All 1035 eligible participants had a mean age of  $45.54 \pm 15.82$  years (ranged from 14 to 91). Nearly 70% of the participants were female. Around 81.8% had a family physician coverage, whereas 7.4% of them had no medical insurance coverage. The frequency of complaints from the pharmacies was 35.6%. Nearly 55% of the complaints were related to governmental pharmacies. Homemakers were 1.36 times more likely to have experienced complaints in comparison with their employed female counterparts. Health status had an inverse association with complaints. Those participants who had received prescription medication were about two times more likely to have filed a complaint in comparison with those who received medication without a prescription. In addition, females aged 40–59 and above 60 and unemployed participants were more satisfied with respect to complaint follow-up process. **Conclusion:** Low level of satisfaction with respect to the complaint process is a concerning issue; hence, strategies are warranted to improve the quality of services provided in the pharmacies.

**KEYWORDS:** Community pharmacy, complaint, patient, pharmaceutical service, population-based study

played the role of partner in patient's pain and sorrow as well as keeping their secrets, which resulted in enjoying special social respect.<sup>[4,5]</sup> Therefore, anything that would disrupt this bilateral relationship and reduce its strength will be reprehensible. In this regard, the pharmacist is

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also a member of the community health service, given that drugs and pharmaceuticals are merchandises with both side effects and benefits.<sup>[6]</sup> In addition to secrecy, the pharmacist must provide adequate services to patients and clients in accordance with the patients' charter of rights.<sup>[7]</sup> Thus, legislation has also enacted rules and regulations to prevent such situations, according to which any action contrary to the medical professions is considered a criminal offense and has been determined following a complaint of the injured party for its punishment. With regard to the consumers' rights and the crimes related to the pharmacies, there are ways through which the patient or the client can claim for their right, in case of pharmacy's errors or wrongdoing. In Iran, the procedure for filing complaints against the pharmacies is as follows: the first step is to complain and of course, the easiest way is to contact the University of Medical Sciences. To report any violations by the pharmacies in any field, you can contact 1490, and by receiving a follow-up code, you can register your complaint in the system. If necessary, you can refer to the Deputy of Food and Drug of University of Medical Sciences in your own city or province. The second approach mentioned in the rules and regulations, is the Medical Council Organization that addresses the disciplinary and administrative violations of the pharmacists, and the penalties range from written reprimands to nullification of the pharmacy's license. The third approach is filling out the complaint form of pharmacy in the website of the Deputy for Food and Drug of University of Medical Sciences of your city or province.<sup>[8]</sup> Nowadays, filing complaint against health service providers including physicians, pharmacists, etc., is one of the most stressful factors in health professionals' lives.<sup>[9]</sup> Therefore, people's familiarity with authorities in charge and the procedures to register their complaints, assessing the reasons for complaints about the medical staff, and attempts to reduce them can all be effective steps to satisfy patients and the medical staff. On the other hand, we must be fully aware of the positive aspects of patients' complaints.<sup>[10]</sup> This issue can improve the quality of services provided by the health-care system, including doctors and pharmacists, as well as promote their care, attention, knowledge, and new skills. In addition, it can lead to reduced burden of treatment costs, enhancing the sanctity of the medical community, which can be effective in establishing an close relationship with patients.<sup>[11]</sup> With regard to the advancements of science and technology in the recent decades, providing health services has become much more complicated. Therefore, in such a situation, the probability of making a mistake in the provision of health care will increase, leading to patient's dissatisfaction with the care system.<sup>[12]</sup> In this regard, for the first time in Iran, the present survey

aimed to investigate the level of people's familiarity with authorities in charge of pharmaceutical complaint, the stages for filing a complaint sheet, as well as any previous experience, and the degree of satisfaction with the handling of their complaint filed in the pharmacy sector, as a community-based study.

## METHODS

This investigation is the continuation of our publication which is under review (that was submitted with a Grant Number 95-01-62-11926). The project was a population-based study of Shiraz Citizens' home in 2017–2018. (The local Ethics Committee of Health Policy Research Center of Shiraz University of Medical Sciences, with the code number of EC-HP-01-62-11926, approved this project.)

One hundred postal codes were randomly selected from ten districts of Shiraz, Iran. The participants were included if they were older than 18 years, lived in Shiraz for at least 2 years, and were willing to participate by answering the questions thoroughly. They were excluded if they were reluctant to participate in the study, had a lack of understanding of the questions, and gave up in the middle of data collection or failed to complete the data collection sheet. Residential areas such as dormitories, hotels, stores, agencies, companies, and places except residential homes were also excluded from the study. Additional details about the study design are available in Appendix 1.

Participants' information was recorded in a two-part data-gathering sheet. The first part included demographic and social profile (age, gender, education, occupation, insurance coverage, family physician coverage, and health and medication status). The second part of the data sheet was about any complaint records against pharmacists, pharmacy services, and technicians in either private or governmental pharmacies. In addition, the participants were asked about "where" they had referred to register their last complaint (familiarity to related authority) and their level of satisfaction regarding the handling of complaint.

Content validity of the data collection sheet was confirmed by five experts in pharmacy, social medicine, and biostatistics.

Mean  $\pm$  standard deviation and frequency (percent) were used for the description of quantitative and qualitative data, respectively. Qualitative data were compared between the groups by Chi-square test. The Mann–Whitney test was used for the comparison of quantitative data. Based on our previous survey, a two-step clustering method was employed to categorize anatomical therapeutic chemical classification

(ATC) codes of medications in the last prescription of the participants, in order to enhance the comparison of medication used among the groups and to provide a simplified interpretation. Three classes (cold, gastrointestinal [GI] disorder, and diabetes) were determined based on the lowest value of the Bayesian Information Criterion and clinical interpretability. In addition, using a logistic regression model with backward elimination method for variable selection, significant subsets of the factors associated with the complaint and satisfaction of complaint management were extracted. All statistical analyses were done through statistical package for social sciences (SPSS) software (version 22, Co Ltd, Tokyo, Japan).  $P < 0.05$  was considered statistically significant.

## RESULTS

The mean age of all eligible participants was  $45.54 \pm 15.82$  years, ranging 14–91 years. Nearly 70% of the participants were female, 35.7% had an income, 38.3% had a supplementary insurance coverage, and 81.8% had a family physician coverage. Only 7.4% of the participants had no insurance coverage.

The frequency of complaints from the pharmacies was 35.6%. The rate of satisfaction with the complaint management was 32.1%. Nearly 55% of the complaints were related to the governmental pharmacies. There was no statistically significant relationship between the pharmacy type and having complaints ( $P = 0.42$ ). There was a statistically significant relationship between

**Table 1: Comparison of socioeconomic and demographic variables of participants in terms of complaints and satisfaction with complaint management**

Parameters	Complaint (1035)			Satisfaction with complaint management (368)		
	Yes (368)	No (667)	<i>P</i>	Yes (118)	No (250)	<i>P</i>
Sex						0.03 <sup>€</sup>
Female	252 (68.5)	453 (67.9)	0.85 <sup>€</sup>	90 (76.3)	162 (64.8)	
Male	116 (31.5)	214 (32.1)		28 (23.7)	88 (35.2)	
Age						0.69 <sup>€</sup>
≥39	154 (41.8)	261 (39.1)	0.56 <sup>€</sup>	46 (39)	108 (43.2)	
59-40	133 (36.1)	263 (39.4)		46 (39)	87 (34.8)	
≤60	81 (22.1)	143 (21.4)		26 (22)	55 (22)	
Education level						0.76 <sup>€</sup>
≤ diploma	275 (74.7)	507 (76)	0.64 <sup>€</sup>	87 (73.7)	188 (75.2)	
> diploma	93 (25.3)	160 (24)		31 (26.3)	62 (24.8)	
Insurance coverage						0.66 <sup>€</sup>
Yes	343 (93.2)	615 (92.2)	0.55 <sup>€</sup>	109 (92.4)	234 (93.6)	
No	25 (6.8)	52 (7.8)		9 (7.6)	16 (6.4)	
Supplementary insurance coverage						0.74 <sup>€</sup>
Yes	139 (37.8)	257 (38.5)	0.81 <sup>€</sup>	46 (39)	93 (37.2)	
No	229 (62.2)	410 (61.5)		72 (61)	157 (62.8)	
Family physician coverage						0.68 <sup>€</sup>
Yes	298 (81)	549 (82.3)	0.59 <sup>€</sup>	97 (82.2)	201 (80.4)	
No	70 (19)	118 (17.7)		21 (17.8)	49 (19.6)	
Occupation statuses						0.09 <sup>€</sup>
Service	120 (32.6)	250 (37.5)	0.14 <sup>€</sup>	32 (27.1)	88 (35.2)	
Retired	67 (18.2)	112 (16.8)		17 (14.4)	50 (20)	
Homemaker	158 (42.9)	248 (37.2)		59 (50)	99 (39.6)	
No service	23 (6.3)	57 (8.5)		10 (8.5)	13 (5.2)	
Health status (self-reported)						0.32 <sup>€</sup>
Excellent, very good, or good	211 (57.3)	333 (50.1)	0.02 <sup>€</sup>	72 (61)	139 (55.6)	
Fair or poor	157 (42.7)	332 (49.9)		46 (39)	111 (44.4)	
Taking medication						0.91 <sup>€</sup>
Prescribed medication	253 (95.9)	615 (92.2)	0.02 <sup>€</sup>	113 (95.8)	240 (96)	
Nonprescribed medication	15 (4.1)	52 (7.8)		5 (0.2)	10 (0.4)	
Medication classification based on the last prescription						0.21 <sup>€</sup>
Cold	120 (52.9)	178 (43.2)	0.05 <sup>€</sup>	42 (61.8)	78 (49.1)	
GI disorder	49 (21.6)	114 (27.7)		12 (17.6)	37 (23.3)	
Diabetes	58 (25.6)	120 (29.1)		14 (20.6)	44 (27.7)	

<sup>€</sup>Chi-square test

the pharmacy type and inspectors' awareness of complaint handling manager ( $P = 0.001$ ). None of the nongovernmental pharmacies had any information about the inspector who handled the complaint. Table 1 shows the status of the complaint (having vs. not having) and satisfaction with complaints' management (yes vs. no). Table 2 shows the predictors of complaints and satisfaction with their management with respect to the participants' socioeconomic and demographic characteristics. Homemakers were 1.36 times more likely to file complaint in comparison with the participants who were employed (odds ratio [OR] = 1.36, 95% confidence interval [CI]: 1.01–1.84,  $P = 0.04$ ). Health status was inversely associated with filing a complaint (OR = 0.69, 95% CI: 0.53–0.90,  $P = 0.01$ ). Those participants who had received prescription medication were about two times more likely to file a complaint in comparison with those receiving medication without prescription (OR = 1.94, 95% CI: 1.07–3.51,  $P = 0.03$ ). Class of GI disorder was correlated by lower odds of complaint (OR = 0.63, 95% CI: 0.42–0.95,  $P = 0.03$ ).

In addition, females (OR = 2.56, 95% CI: 1.25–5.24,  $P = 0.01$ ), those in the age range of 40–59 (OR = 2.28,

95% CI: 1.05–4.91,  $P = 0.03$ ) and above 60 (OR = 2.71, 95% CI: 1.05–7.01,  $P = 0.03$ ), and unemployed participants (OR = 3.97, 95% CI: 1.13–13.91,  $P = 0.03$ ) had more satisfaction with their complaint management. Participants who had diabetic medicines in their last prescription had lower satisfaction with their complaint management (OR = 0.36, 95% CI: 0.15–0.85,  $P = 0.02$ ).

## DISCUSSION

To the best of our knowledge, this is the first study evaluating patients' complaints regarding pharmacy services and pharmacists in governmental as well as nongovernmental pharmacies with respect to their satisfaction regarding its management in Iran. The results indicate that approximately 35% of the patients declared having filed complaint against pharmacies and more than two-thirds of them were dissatisfied with its management.

The results of our study are slightly inconsistent with those of previous studies conducted in other countries regarding patient's satisfaction with the quality of services provided in pharmacies, which might be due to differences in pharmaceutical systems across the world.<sup>[13,14]</sup> It is apparent that a gap exists between what

**Table 2: Factors related to the status of complaints and satisfaction of managing complaint, using a logistic regression method and choosing the backward variables**

Parameters	Complaint (yes/no)			
	Sub parameters	OR	CI	P
Occupation statuses	Service	-	-	-
	Retired	1.31	0.90-1.92	0.15
	Homemaker	1.36	1.01-1.84	0.04
	No service	0.82	0.48-1.40	0.47
Health status (self-reported)	Excellent, very good, or good	-	-	-
	Fair or poor	0.69	0.53-0.90	0.01
Taking medication	Prescribed medication	1.94	1.07-3.51	0.03
	Nonprescribed medication	-	-	-
Medication clustering based on the last prescription	Cold	-	-	-
	GI disorder	0.63	0.42-0.92	0.03
	Diabetes	0.71	0.48-1.05	0.09
Parameters	Satisfaction of managing complaint (yes/no)			
	Sub parameters	OR	CI	P
Sex	Female	2.56	1.25-5.24	0.01
	Male	-	-	-
Age	≤39	-	-	-
	40-59	2.28	1.05-4.91	0.03
	60≤	2.71	1.05-7.01	0.03
Occupation statuses	Service	-	-	-
	Retired	1.19	0.44-3.22	0.72
	Homemaker	1.92	0.92-3.97	0.07
	No service	3.97	1.13-13.91	03.0
Medication clustering based on the last prescription	Cold	-	-	-
	GI disorder	0.5	0.22-1.11	0.09
	Diabetes	0.36	0.15-0.85	0.02

CI=Confidence interval, OR=Odds ratio



the patients expect and what they receive. Therefore, it is necessary to assess patients' expectations and requirements, as well as their level of satisfaction with provided services in order to fill this gap.<sup>[15]</sup> In addition, identification of critical factors that can affect patients' perceptions toward pharmacists' services, including the patients' individual characteristics, can help conduct more efficient interventions to increase their satisfaction.

In our study, no complaints were filed among patients with excellent, very good, or good health condition, and the patients who received prescribed medications filed more complaints in comparison to those taking nonprescribed drugs. Logistic regression analysis turned out that homemakers, patients receiving prescribed drugs, and those taking drugs for GI disorders based on their last prescription were more dissatisfied with the pharmacy services.

Regarding the satisfaction with complaint management, women were significantly more satisfied in comparison to men. Furthermore, regression analysis showed that age, gender, occupation status, and medication history (based on the last prescription) could significantly affect patient's satisfaction with complaint management. Hence, it can be said that females, patients older than 40 years, those who were unemployed, and patients for whom antidiabetic drugs were prescribed in their last prescription were more satisfied with the complaint management.

Martínez-López-de-Castro *et al.* analyzed the factors leading to higher satisfaction with services provided in an outpatient hospital pharmacy, and found out that age, distance to the hospital, type of transportation used for going to the hospital, age, level of education, and employment status did not significantly affect the patient satisfaction. The quality of services provided by the pharmacist, including the information given to patients, his/her attempts to resolve patients' doubts, his/her care for patients, and the amount of time devoted to patients' personal attention and time devoted to patients, was the most important factor predicting patient satisfaction.<sup>[16]</sup> In another study, patients' satisfaction regarding pharmacy services in the medication therapy management clinic was assessed. The results showed that the overall satisfaction did not significantly correlate with age, gender, ethnicity, and number of comorbidities.<sup>[17]</sup> In this study, we found that only a few pharmaceutical services were recognized by the patients. In recent years, incremental changes have occurred in the pharmacists' roles in the community pharmacies, and they have got involved in the clinical aspects of patient care. Thus, it seems that educating people regarding services provided in the pharmacies and utilizing these services by patients

can lead to an improvement in patients' quality of care and subsequently their satisfaction with pharmacies.<sup>[18]</sup> The majority of complaints (nearly 55%) were related to governmental pharmacies, which can be justified by the fact that the workload in these pharmacies is higher than that in private pharmacies. A large number of patients prefer government pharmacies due to economic issues and lower cost of services. On the other hand, high workloads are associated with increasing job-related stress and the possibility of errors.<sup>[19]</sup>

Promising interventions suggest monitoring governmental pharmacies more frequently by authorized body, hiring more pharmacists, and using automated systems for drug dispensing that can monitor governmental pharmacies.

There are some limitations in this study which should be considered when interpreting the results. The reasons for complaints were not identified, and patients were only asked whether they had filed any complaints or not. No validated data collection sheet was used to evaluate patient satisfaction regarding the pharmacy's services. In addition, this study did not provide a detailed insight into the patients' medical history and their diseases.

This study shows that having insight into current patients' level of satisfaction with the services provided by the pharmacies is beneficial. The low level of satisfaction with complaint management is a concerning issue, which should be taken into account. In addition, the results showed that governmental pharmacy services were comparatively poorer than the services offered at nongovernmental pharmacies. Hence, strategies are needed to improve the quality of services provided in the pharmacies. In addition, authorities should focus on improving the process of complaint management. Further studies are required to determine the domains of dissatisfaction and prioritize the aspects of pharmacy services that require promotion.

## AUTHORS' CONTRIBUTION

All the authors have significantly contributed to the work and the involvement of each author was as follows:

Marziyeh Zare, Saba Afifi, and Iman Karimzadeh convinced, designed and collected the data for the study. Mohammad Salehi-Marzijarani and Leila Zarei analyzed the data for the study. Gholamreza Ghazipour and Mahtabalsadat Mirjalili and Marziyeh Zare interpreted the data from the study and drafted the paper. Kamran B.Lankarani, Ali Mohammad Sabzghabae, Fariba Ahmadizar, and Payam Peymani reviewed and approved the final version of the manuscript for publication.

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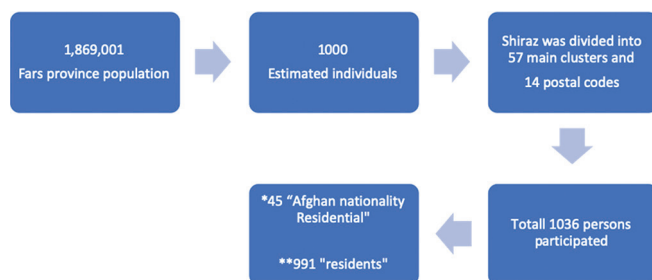
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## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

- Jafarian A, Parsapoor A, Hajtarkhani A, Asghari F, Razavi IS, Yalda A. An survey on the complaints registered in Medical Council Organization of Tehran. *Med Ethics Hist Med* 2009;2:67-74.
- Alipour S. Liability Risk and Its Impact on the Price of Medicine and Pharmaceutical Products (Comparative Study of Iran, England and United States). *Medical Law Journal*. 2016;10:23-40. Available from: <http://ijmedicallaw.ir/article-1-614-en.html>. [Last accessed on 2020 May 05].
- Honarvar B, Lankarani KB, Kazemi M, Shaygani F, Sekhavati E, Raoufi A, *et al.* Five years after implementation of urban family physician program in Fars Province of Iran: Are people's knowledge and practice satisfactory? *Int J Prev Med* 2018;9:41.
- Nasiripour AA, Hosseini MA, Rad FH, Kamyabi A. Factors related to the patients complaints against doctors in the hospitals with the verdict of the Medical Council of Kerman 1383-88. *Med Ethics Hist Med* 2011;4:87-96.
- Birkeland S, Christensen RD, Damsbo N, Kragstrup J. Patient complaint cases in primary health care: What are the characteristics of general practitioners involved? *Biomed Res Int* 2013;2013:807204.
- Safdari R, Masouri N. The importance of electronic registration system for referral complaints due to medical malpractice based on the country's forensic medicine organization. *Sci J Forensic Med* 2005;11:99-106.
- Harrison R, Walton M, Healy J, Smith-Merry J, Hobbs C. Patient complaints about hospital services: Applying a complaint taxonomy to analyse and respond to complaints. *Int J Qual Health Care* 2016;28:240-5.
- Karimzadeh I, Vazin A, Talebnia N, Hatami-Mazinani N, Mahi-Birjand M. Performance of Drug and Poison Information Center within a Referral University Hospital in Southwest of Iran. *J Pharm Care* 2017;5:49-55.
- Hemmati Maslakkp M, Baghaie R, Yosefi M, GHavami H. Investigates complaints incoming to the medical council of west azarbaijan province during 1385 to 1389. *Nurs Midwifery J* 2013;11(1). Available from: <http://unmf.umsu.ac.ir/article-1-1210-en.html>. [Last accessed on 2020 May 05].
- Hiivala N, Mussalo-Rauhamaa H, Tefke HL, Murtooma H. An analysis of dental patient safety incidents in a patient complaint and healthcare supervisory database in Finland. *Acta Odontol Scand* 2016;74:81-9.
- Reader TW, Gillespie A, Roberts J. Patient complaints in healthcare systems: A systematic review and coding taxonomy. *BMJ Qual Saf* 2014;23:678-89.
- Honarvar B, Lankarani KB, Ghahramani S, Akbari M, Tabrizi R, Bagheri Z, *et al.* Satisfaction and dissatisfaction toward urban family physician program: A population based study in Shiraz, Southern Iran. *Int J Prev Med* 2016;7:3.
- Pinto AR, Machado A, Gonçalves E, Salsas L, Vicente T, Ribeiro MI, *et al.* Users satisfaction regarding the service provided in community pharmacies. *Adv Pharmacol Pharm* 2014;2:18-29.
- Aziz MM, Ji W, Masood I, Farooq M, Malik MZ, Chang J, *et al.* Patient satisfaction with community pharmacies services: a cross-sectional survey from Punjab; Pakistan. *Int J Environ Res Public Health* 2018;15: pii: E2914.
- Ayalew MB, Taye K, Asfaw D, Lemma B, Dadi F, Solomon H, *et al.* Patients'/clients' expectation toward and satisfaction from pharmacy services. *J Res Pharm Pract* 2017;6:21-6.
- Martínez-López-de-Castro N, Álvarez-Payero M, Martín-Vila A, Samartín-Ucha M, Iglesias-Neiro P, Gayoso-Rey M, *et al.* Factors associated with patient satisfaction in an outpatient hospital pharmacy. *Eur J Hosp Pharm* 2018;25:183-8.
- Kim S, Martin MT, Pierce AL, Zueger P. Satisfaction with medication therapy management services at a university ambulatory care clinic. *J Pharm Pract* 2016;29:199-205.
- Al Aqeel S, Abanmy N, AlShaya H, Almeshari A. Interventions for improving pharmacist-led patient counselling in the community setting: A systematic review. *Syst Rev* 2018;7:71.
- Lea VM, Corlett SA, Rodgers RM. Workload and its impact on community pharmacists' job satisfaction and stress: A review of the literature. *Int J Pharm Pract* 2012;20:259-71.



Appendix 1: Process diagram of participants overview of this study