

## Original Article

## Evaluation of Managerial Skills among Pharmacists in South of Iran

### Running Title: Managerial Skills among Pharmacists

Peivand Bastani<sup>1</sup> Khosro Keshavarz<sup>2</sup> Mahnaz Samadbeik<sup>3</sup> Maryam Mahmoudi Mehr<sup>4</sup>  
Alireza Yousefi<sup>5</sup> Najmeh Bordbar<sup>5\*</sup>

1. Associate Professor, Health Human Resources Research Center, School of Management and Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran
2. Assistant Professor, Health Human Resources Research Center, School of Management & Information Sciences, Shiraz University of Medical Sciences, Shiraz, Iran
3. Associate Professor, School of Allied Medicine, Department of Health Information Technology, Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran.
4. MSc Student, Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran.
5. PhD candidate of Health Services Management, Student Research Committee, School of Management & Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran

\*Correspondence to: Najmeh Bordbar  
nabordbar@gmail.com

(Received: 8 May. 2019; Revised: 22 Jun. 2019; Accepted: 4 Aug. 2019; Published: 18 Sep. 2019)

#### Abstract

**Background and Purpose:** According to the importance of managerial skills in both public and private pharmacies, this study aimed to investigate the managerial skills of technical officers of pharmacies in south of Iran.

**Materials and Methods:** This was a cross-sectional study on 124 technical officers and 113 personnel working in the pharmacies in Shiraz in 2017. A researcher-made questionnaire was developed containing demographic questions (age, sex, and work experience), place of study, pharmacy ownership, and type of pharmacy, and 17 other questions to evaluate the managerial skills of the technical officers from their own self-assessment and their personnel viewpoints. The validity of the questionnaire was verified by experts, and its reliability was confirmed by a Cronbach's alpha coefficient of 0.85. Data was analyzed applying SPSS<sub>23</sub> through descriptive statistics, Mann-Whitney, and Chi-square tests ( $\alpha=5\%$ ).

**Results:** This study showed that from the perspective of the personnel working in pharmacies, the skill of "time management" was in a desirable condition, and the skill of "conflict management" was in an undesirable condition. Based on the results of the self-assessment of technical officers, their managerial skills were significantly related to gender, age, work experience, and pharmacy ownership. Accordingly, the female technical officers under 30 years of age, with a work experience of less than 16 years, who were working in public pharmacies assigned better scores to their managerial skills.

**Conclusion:** Based on the findings, it is necessary to improve the managerial skills of technical officers specially their ability of conflict management through appropriate training, and examine the impact of demographic factors and the characteristic of pharmacies on their managerial skills.

**Keywords:** Pharmacy; Pharmacists; Managerial Skill

**Citation:** Bastani P, Keshavarz K, Samadbeik M, Mahmoudi Mehr M, Yousefi AR, Bordbar N\*. Evaluation of Managerial Skills among Pharmacists in South of Iran. Iran J Health Sci. 2019; 7 (3): 31-41. DOI: 10.18502/jhs.v7i3.1531

## 1. Introduction

Medicine is one of the most important technologies and the final chain of communication between a patient and a health system that plays a vital role in the proper functioning of health systems; the lack of access to medicines has negative effects on the health of the community (1). Therefore, medication management is a crucial issue especially in the public sector, because it is the largest provider of medicines for the community, especially in developing countries, and optimizing the related processes, which can help to save money in the countries and increase people's access to medicines (2). Concerning the importance of medication management and drug policy, there is evidence showing that in order to develop drug policies in developed, developing, and underdeveloped countries, three main goals are considered by policy makers. The most important goal is to facilitate people's access to medicines and related services. Drug accessibility includes several dimensions, such as the availability of medicines in the country, the affordability of the medications for people, geographical availability, and the lack of any barrier to the provision and administration of the prescribed medications (3).

Pharmacies, as the final body in the drug supply chain and as one of the most important institutions involved in the provision of healthcare services for the community, play an important role in facilitating people's access to drugs. The pharmacies in hospitals are in charge of controlling and monitoring drug use, and they assure patients and hospital staff about the timely access to medications, the safety of drugs, and the efficient and cost-effective use of medications (4). Pharmacists, as the main scientific and

knowledgeable persons in pharmacies, are one of the most accessible bodies in the medical community that provide services, such as drug counseling to physicians, nurses, and patients. In addition, pharmacists are in charge of establishing a drug information system, hence they must actively participate in drug and treatment committee and pharmacopoeia committee of hospitals (5). Pharmaceutical services and related issues are not solely dependent on the performance of the healthcare staff and the field of health; nonetheless, they are also affected by political, economic, financial, and cultural factors, as well (6). However, the role of manager and managerial factors is one of the main pillars for the success in every system. Therefore, extensive studies have been conducted on developed countries to investigate the managerial dimensions in hospital pharmacies. For example, in a study by Berdwell et al., it was found that training the managers of private pharmacies played an important role in enhancing and improving managerial capabilities, addressing the financial issues, and improving the efficiency and productivity of the pharmacy (7). The results of a study showed that all managers working in the studied hospital pharmacies did not perform all their tasks in accordance with the specified job descriptions, and it can lead to management problems (8). In another study, Barati et al. showed that pharmacists, as the technical officers of hospital pharmacies, must be familiar with managerial processes, including planning, and in particular, strategic planning, human resource management, and the rules governing accreditation (6). Given the importance of managerial skills in private pharmacies in cities, as a business and financial enterprise, and in hospital

pharmacies, as an important focal point for the provision and supply of medicines for patients, this study aimed to investigate the managerial skills of pharmacists as technical officers of their pharmacies in Shiraz in 2017.

## 2. Materials and methods

This descriptive analytical study was conducted as a cross-sectional study on all pharmacies of educational, non-educational, and private hospitals in the city of Shiraz in 2017. The population under the study included the technical officers and their personnel of the mentioned pharmacies to evaluate the pharmacists' managerial skills. Using census sampling method, 124 technical officers and 113 personnel working in the pharmacies were enrolled into the study. To collect the required data, a researcher-made questionnaire was developed that was designed through holding expert panel, brain storming sessions, and literature review. After reviewing previous studies, holding two sessions of brain storming, collecting the views of 15 experts who were familiar with the field of research, the factors influencing the managerial skills of technical officers in the pharmacies were extracted, and a questionnaire was designed.

The first part of the questionnaire was used to collect demographic data (age, sex, and work experience), (Islamic Azad University, governmental university or abroad university), pharmacy ownership (public or private), and type of pharmacy (hospital or outpatient). The second part of the questionnaire included 17 questions to evaluate the managerial skills of the technical officers of the studied pharmacies. In this questionnaire, the questions were answered on a three-point

scale: yes (2 points), somewhat (1 point), and no (zero point).

The validity of the questionnaire was verified by experts and specialists in the field of health services management. To determine the reliability of the questionnaire, 40 questionnaires were completed, and the internal reliability was confirmed by a Cronbach's alpha coefficient of 0.85.

The enrollment into the study was completely voluntary, and the questionnaire was filled out only after obtaining consent. After briefing the participants about the objectives of the research, they were assured about the confidentiality of their responses, then, the questionnaires were distributed among them, and they were asked to complete them without writing their family names. Using the questionnaire, the pharmacy personnel assessed the managerial skills of the technical officers, and also the technical officers of the pharmacies assessed their own technical skills. The collected data were entered into SPSS Software version 23 and analyzed using descriptive statistics, Mann-Whitney, and Chi-square tests at a significance level of  $\alpha \leq 5\%$ .

(Ethical Code: IR.SUMS.REC.1396.S415)

## 3. Result

Based on the results of the study, most of the personnel and technical officers who participated in the study were female (75.2% and 52.4%, respectively), and graduated from state universities (69.92% and 79.84%, respectively). On the other hand, the majority of the personnel and technical officers involved in the research were in the age groups of 20-35 years (78.76%) and 20-45 years (56.45%), respectively, and had a work experience of 1-15 years (86.73%) and 1-20 years

(68.55%), respectively. Moreover, 81.88% of the studied personnel were working in

private pharmacies and 64.6% were working in outpatient pharmacies (Table 1).

**Table 1.** Demographic characteristics of the participants in the studied pharmacies

Participants	Variable	Category	N	%
Personnel	Gender	Male	28	24.8
		Female	85	75.2
	<b>Total</b>	-	<b>113</b>	<b>100</b>
	Age	35-20	89	78.76
		50-36	21	18.58
		65-51	3	2.66
		<b>Total</b>	-	<b>113</b>
	Work experience(year)	1-15	98	86.73
		16-30	14	12.39
		45-30	1	0.88
<b>Total</b>		-	<b>113</b>	<b>100</b>
Place of study	State university	79	69.92	
	Azad university	29	25.66	
	Abroad	5	4.42	
	<b>Total</b>	-	<b>113</b>	<b>100</b>
Pharmacists (Technical Officers)	Sex	Male	59	47.6
		Female	65	52.4
	<b>Total</b>	-	<b>124</b>	<b>100</b>
	Age	45-20	70	56.45
		70-46	50	40.33
		95-71	4	3.22
	<b>Total</b>	-	<b>124</b>	<b>100</b>
	Work experience(year)	20-1	85	68.55
		40-21	35	28.23
		60-41	4	3.22
<b>Total</b>	-	<b>124</b>	<b>100</b>	
Place of study	State University	99	79.84	
	Azad University	15	12.10	
	Abroad	10	8.06	
	<b>Total</b>	-	<b>124</b>	<b>100</b>
Pharmacy	Pharmacy ownership	Public	43	18.1
		Private	194	81.9
	<b>Total</b>	-	<b>237</b>	<b>100</b>
	Type of pharmacy	Hospital	84	35.4
Outpatient		153	64.6	
<b>Total</b>	-	<b>237</b>	<b>100</b>	

In addition, the results showed that based on the views of the personnel, the best and the worst managerial skills of the technical officers were, respectively, time management (87.61% answered yes: the highest response was yes and the lowest response was no) and conflict management (7.1% answered no: the lowest response was yes and the highest response was no). On the other hand, based on the views of the technical officers (self-assessment), their

best and worst managerial skills were, respectively, proper planning (90.3% answered yes: the highest response was yes and the lowest response was no) and conflict management (6.5% answered no: the lowest response was yes and the highest response was no) (Tables 2).

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**Table 2.** The Frequency Distribution of Managerial Skills of technical officers in Shiraz Pharmacies

Groups	Managerial Skills	Frequency			%			
		Yes	No	To some extent	Yes	No	To some extent	
Self - assessment of technical officers	Good and perfect planning	95	6	12	84.1	5.3	10.6	
	Time management	99	2	12	87.6	1.8	10.6	
	Perfect budgeting	90	4	19	79.6	3.5	16.8	
	Ability and skill of improving management level	98	4	11	87.6	3.5	8.8	
	Ability and skill of controlling anxiety and anger	87	10	16	77	8.8	14.2	
	Personal accuracy and discipline	92	5	16	81.4	4.4	14.2	
	Ability and skill of Personnel management	84	3	26	74.3	2.7	23	
	Organizing group activities	86	2	25	76.1	1.8	22.1	
	Managing the relationships	91	3	19	80.5	2.7	16.8	
	Crisis management	83	3	27	73.5	2.7	23.9	
	Ability and skill of improving attitudes and insights	89	7	17	78.8	6.2	15	
	Conflict management	80	10	23	70.8	6.2	15	
	Ability and skill of negotiation	86	11	16	76.1	9.7	14.2	
	Ability and skill of communication	91	8	14	80.5	7.1	12.4	
	Ability and skill of goal setting, performance standardizing and giving appropriate feedback	90	4	19	79.6	3.5	16.8	
	Ability and skill of staffing	86	9	18	76.1	8	15.9	
	Ability and skill of recognizing organizational concepts and the environment	92	5	16	81.4	4.4	14.2	
	Assessment of personnel	Good and perfect planning	112	1	11	90.3	0.8	8.9
		Time management	107	3	14	86.3	2.4	11.3
		Perfect budgeting	102	5	17	82.3	4	13.7
Ability and skill of improving management level		103	1	20	83.1	0.8	16.1	
Ability and skill of controlling anxiety and anger		93	8	23	75	6.5	18.5	
Personal accuracy and discipline		99	2	23	79.8	1.6	18.5	
Ability and skill of Personnel management		99	4	21	79.8	3.2	16.9	
Organizing group activities		91	5	28	73.4	4	22.6	
Managing the relationships		97	5	22	78.2	4	17.7	
Crisis management		88	4	32	71	3.2	25.8	
Ability and skill of improving attitudes and insights		93	3	23	79	2.4	18.5	
Conflict management		82	9	33	66.9	6.5	26.6	
Ability and skill of negotiation		101	5	18	81.5	4	14.5	
Ability and skill of communication		103	6	15	83.1	4.8	12.1	
Ability and skill of goal setting, performance standardizing and giving appropriate feedback		94	3	27	75.8	2.4	21.8	
Ability and skill of staffing		83	8	25	74.2	6.5	19.4	
Ability and skill of recognizing organizational concepts and the environment	94	6	24	75.8	4.8	19.4		

The results also showed a statistically significant relationship between views of the personnel and the views of technical officers in terms of the points on the scale (with three options of yes, no, and to some extent) (P=0.000) (Table 3).

**Table 3.** The relationship between the orders of managerial skills of technical officers in Shiraz pharmacies from the participants' viewpoints

Variable		Participants		P value (Sig)
		Technical officer N (%)	Personnel N (%)	
Gender	Female	59(66)	28 (53)	0.000
	Male	65 (59)	85 (58.02)	
	Total	124	113	

In addition, the results showed that the variables of age, gender, and work experience in both groups had a statistically significant relationship with the scores of the dimensions of managerial skills of technical officers in pharmacies ( $p=0.000$ ). The participants under 30 years of age, females, and technical officers with a work experience of less than 14 years, and the personnel with a work experience of less than 7 years gave higher scores to the dimensions of managerial skills.

On the other hand, there was no statistically significant relationship between the technical officers' place of education and the scores of managerial skills ( $p=0.074$ ), while there was a significant relationship between the personnel's place of education and the scores ( $p=0.000$ ) and the personnel who studied in state universities assigned better managerial skills to the technical officers.

We also studied the relationship between pharmacy ownership and the scores of managerial skills of the technical officers in Shiraz pharmacies. The results of the current study showed that technical officers working in public pharmacies gave better scores to their own managerial skills ( $p=0.000$ ). However, the personnel working in private pharmacies gave better scores to the dimensions of managerial skills of technical officers ( $p=0.049$ ). Finally, from the view of technical officers of the pharmacies, there was found no significant relationship between the type of pharmacy and the dimensions of their managerial skills ( $p=0.074$ ). However, from the view of the personnel, there was a significant relationship between the type of pharmacy and the dimensions of managerial skills ( $p=0.000$ ) (Table 4).

**Table 4.** The relationship between demographic variables and the average scores of managerial skills of pharmacists

Variable	Participant type		N	%	P-Value
Sex	Technical officer	Female	59	66	0.000
		Male	65	59	
		Total	124		
	Personnel	Female	28	53	
		Male	85	58.02	
		Total	113		
Age	Technical officer	>30	97	64	0.000
		30-50	27	55.07	
		Total	124		
	Personnel	>30	69	59	
		≤30	44	53.2	
		Total	113		
Work experience (year)	Technical officer	>14	62	63	0.000
		≤14	62	61.09	
		Total	124		
	Personnel	>7	64	58	
		7-40	49	54	
		Total	113		
place of study	Technical officer	State University	99	59	0.074
		Azad University	15	43	
		Total	114		
	Personnel	State University	79	51	
		Azad University	29	61	
		Total	113		
Pharmacy ownership	Technical officer	Public	102	60	0.000
		Private	22	70	
		Total	124		
	Personnel	Public	92	59	
		Private	21	44	
		Total	113		
Type of pharmacy	Technical officer	Hospital	46	69	0.074
		Outpatient	78	58	
		Total	124		
	Personnel	Hospital	38	51	
		Outpatient	75	59	
		Total	113		

It should be noted that using chi-square test, the relationships between all demographic variables and the 17 questions were investigated separately, but there was found no significant relationship between this variables and the dimensions of managerial skills ( $p>0.05$ ).

#### 4. Discussion

The findings of the current study showed that from the perspective of the personnel

working in pharmacies, among the managerial skills, the skill of “time management” was in a desirable condition and the skill of “conflict management” was in an undesirable condition. Time management in fact refers to the design, deployment, and thoughtful control of time, and it is considered as one of the requirements for the management of organizations (including pharmacies) (9). Technical officers of the pharmacies must manage time optimally to achieve the

highest level of effectiveness and efficiency via the proper and timely use of available resources, especially human resources. However, in a study by Augustine et al. in the United States, communication was the most prominent skill and subsequently decision-making and business knowledge were the most important skills needed by pharmacy managers (10). The findings of this study also showed that from the point of view (self-assessment) of the technical officers employed in pharmacies, the skill of “appropriate and good planning” had a desirable condition among all managerial skills, while the skill of “conflict management” had an undesirable condition. At the same time, in a study conducted by Faris et al., based on the point of view of U.S and Canadian pharmacy managers, ethical behavior was rated as the most important skill, and organization as the weakest one (11). Among all management tasks, planning is the most basic task that acts as a bridge from the present to the future. Since resources, both material and human resources, are scarce and environmental factors, such as economic, political, scientific, and technological conditions are unpredictable and unstable, planning is of particular importance (12). Yousefi et al. studied the educational needs of managers of public and private hospitals in Shiraz, and found that one of the most important educational needs of managers was related to education on “planning” skills (13). On the other hand, conflict was an integral part of organizations. The presence of different individuals with different personality traits, needs, beliefs, expectations, and perceptions results in the inevitable incidence of conflicts in organizations (14). The distinct differences and various motivations of personnel working in

pharmacies affect the cooperation and coordination between the individuals; thus, the technical officers who are the main managers of pharmacies must strengthen this vital skill, and manage the conflict effectively without frustrating the personnel. In this regard, in a study by Dargahi et al. in Tehran University of Medical Sciences, it was found that cooperation and collaboration were the most effective methods of conflict management (15). Moreover, in a study conducted by Dargahi and Shaham, the highest self-assessment score of hospital managers was observed to be leadership ability, but the scores of organizational teams, employee motivation, and change management were the least ones (16). Based on the results of a study done by Kosari Pour et al., there was a close relationship between time productivity cycle and planning and creativity; furthermore, planning was found as one of the most important factors in time management. Planning of working hours and other affairs plays an effective role in increasing the inclination toward planning, and scheduling the tasks can help to efficiently use the time available (17). Based on the findings, it can be concluded that because of the proper and effective planning of all affairs of the pharmacy and because of the optimal use of time by the technical officers, the studied personnel generally believed that the technical officers of the pharmacies had a good and satisfactory level of time management skills. However, based on the views of both groups, the conflict management skills of technical officers were weak. In Latif's study, management skills for teaching pharmacy students included conflict management, time and stress management, negotiation, financial management and



pharmaco-economic, as well as problem solving skills. In this study, the most important skill was conflict management, so the students lacking that ability were supposed not to be able to manage pharmacy (18). On the other hand, based on the results of the self-assessment of technical officers, their managerial skills were significantly related to gender, age, work experience, and pharmacy ownership. Accordingly, the female technical officers under 30 years of age, with a work experience of less than 16 years who were working in public pharmacies assigned better scores to their managerial skills. However, in this self-assessment, the place of education of technical officers and the type of pharmacies (hospital and outpatient) did not show a significant relationship with the scores of the managerial skills. To justify the results, it might be said that technical officers under 30 years of age with less work experience had recently finished their education and were more knowledgeable than other technical officers who were older and had more work experience. In addition, the variable of gender was effective in self-assessment, and because of the higher levels of idealism among women or, probably, because of bias in the study, women reported better managerial skills, higher than the levels reported by the men participating in the study. However, the issue of the ownership of pharmacies and its effects on the self-assessment of managerial skills of technical officers requires further investigation and research. The better scores of managerial skills in public pharmacies might be attributed to the availability of more facilities or better ground for playing management roles by technical officers in such pharmacies; the better scores might also be attributed to the

academic education of technical officers and the role of the Medical Universities in monitoring these pharmacies. The other findings of the research showed that the variables of gender, age, work experience, personnel's place of education, and the characteristics of the pharmacy, including the ownership and type of the pharmacy had a significant relationship with the way the personnel assessed the managerial skills of the technical officers of the pharmacies. Other findings indicated that female personnel under the age of 30 and with less than 7 years of work experience, who studied at state universities and were working in outpatient private pharmacies assigned higher scores to the managerial skills of the technical officers working in the pharmacies. Furthermore, the personality traits of women could be a factor motivating the personnel to have a better assessment of the managerial skills of the technical officers (19). The relationship between age and lower work experience of the personnel and the better assessment of the managerial skills of the technical officers of the pharmacy can be explained as above, and the same reasons can be presented for this finding, as well. However, in contrast with the technical officers, personnel in outpatient private pharmacies had assigned better managerial skills scores to the technical officers, and believed that their managerial skills were at an acceptable level. It can be argued that better facilities and financial conditions in private pharmacies and greater flexibility in working conditions, as well as less constraints had helped the personnel to have a better attitude toward technical officers. In addition, better working conditions for the personnel was representative of the better managerial skills of the technical officers.

## 5. Conclusion

Based on the findings of the present study, the two studied groups reported that the conflict management skills of the technical officers was not in a desirable condition. In addition, the demographic factors and pharmacies' characteristics had an impact on the assessment of technical skills by technical officers (self-assessment) and by the personnel working in pharmacies. Therefore, it was found necessary to improve the skills of technical officers specially their ability of conflict management through appropriate training, and examine the impact of demographic factors and the characteristic of pharmacies on managerial skills.

## Acknowledgments

This article was extracted from a research project approved by Health and Human Resources Management Research Center of Shiraz University of Medical Sciences, with the proposal number of 95-01-68-13928. The researchers would like to express their thanks to the Research Deputy of Shiraz University of Medical Sciences and the pharmacy technical officers and personnel.

## Conflicts of interest

None declared

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