

Attitudes of Pharmacists toward Their Role in Community-Based Clinical Services in Jordan

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Abstract

This study aimed to explore the attitudes of community pharmacists concerning the issues related to community pharmacy services in Jordan. The quantitative method was employed, through a self-administered questionnaire, for the purposes of collecting the data. The sample of the study consisted of 582 pharmacists from the governorates of Jordan, who were selected randomly, and completed the questionnaire between January and February 2016. The issues proposed by pharmacists were diagnosis (70.6%), therapy (13.4%), physician (2.7%), reproductive health (1.7%), and health in general (11.5%). The results revealed statistically significant differences between the attitudes of the participants of the study due to gender, experience, education and province.

Keywords: Pharmacists, Community Clinical, Clinical Services in Jordan

Clinical pharmacy is the discipline pharmacists through which pharmacists provide patient care, which maximizes medication therapy and improves health, and prevents diseases. The practice of Clinical Pharmacy service is patient-oriented rather than drug product-oriented service (WHO, 1997). Clinical pharmacy service is characterized by patient-orientation rather than drug product-orientation. Dissatisfaction of pharmacists with the traditional product orientation was a factor that contributed to the recent emergence of clinical pharmacy (Alabbadi, 2015). The new orientation reflected in clinical pharmacy improves patient care, because clinical pharmacists provide advice to patients concerning the best course of action they ought to take (Tahaineh, et al, 2009).

In hospital settings in various regions and countries, clinical activities were practiced by pharmacists. In Jordan and the Arab region, the traditional orientation concerning the pharmacist' role dominates the profession, however, the perceptions of the role of pharmacists have been changing recently (Ibrahim & Ibrahim, 2014). Nowadays, Jordanian pharmacists adopt the ideal practices of clinical pharmacy service (Hughes and McCann, 2003).

A high level of interaction between the physicians and the pharmacists results in providing more effective services to patients (Gowen, 1992). However, several challenges and problems are still present in Jordan, such as the shortage of qualified pharmacists and the inefficient standard practice guidelines (Abdelhadi et al, 2014). The shift in the profession from product oriented into patient oriented profession worldwide; had its impact on pharmacy practice in Jordan.

In most developing countries, including Jordan, pharmacists are not considered as part of the integrated healthcare team, and the perceived status of pharmacists still lagging behind their medical peers (Adepu & Nagavi, 2006; Basak et al, 2009). However, "talented" pharmacy graduates are required in order to implement the new concept concerning the role of pharmacists, which can be achieved through the promotion of new curricula at universities in Pharmacy programs, and a clear job description for clinical pharmacists versus pharmacists (Dupotey et al, 2011). Pharmacy accreditation standards in Jordan, already mandate that graduates be able to provide patient centered and population-based care. However, strategies to deliver that care are changing and curriculums must keep pace (Dunlop & Shaw, 2002).

Traditionally, the curricula of bachelor of pharmacy programs in Jordan their curricula are focused on biomedical and pharmaceutical sciences and short in clinical, administrative, and experiential courses. Thus, the current study sought to explore the attitudes of pharmacists in Jordan regarding their clinical pharmacy roles.

Objective of the study: The present study aims to investigate the perceptions and attitudes of community pharmacists concerning issues related to community pharmacy services in Jordan.

Methodology and Statistical Analysis: This study is quantitative descriptive analytical study, which used the survey to determine the perceptions and attitudes of pharmacists towards their clinical pharmacy role. A self-administered questionnaire (Erdogan et al, 2012) was distributed by the researcher to the pharmacists who completed the questionnaire, between January and February 2016. The survey population consisted of randomly selected pharmacists from four Jordanian governorates. The questionnaire consisted of a demographic section, and a section dedicated to the attitudes and perceptions of the pharmacists towards the clinical pharmacy role of the pharmacists.

Participants were asked to indicate the level of their agreement with the content of the items provided, through a five point Likert scale, in which 5 indicates "full agreement" and 1 indicates "very low agreement".

Average score of the perception of community-based clinical services was calculated for each participant in the study, and the scores were included in the statistical analyses (Cronbach's alpha: 0.968). Independent variables of the study included gender, experience and education. Means and standard deviations were calculated, and Mann Whitney U test was applied, due to the inequality in the distribution of the variables. And Scheffe' test was used for post comparisons. SPSS Version 16.0 was used in statistical analysis.

Results and Discussion:

The population of the study consisted of (1807) pharmacists (table 1), of which a sample of (582) was selected randomly. Pharmacists working at military hospitals accounted for (79.1%) of the total number of those working at military hospitals, and the participants in the study sample who were selected from governmental and private pharmacies accounted for (55.8%, and 24.3%) respectively.

Table (1)

Number and percentage of the population and Sample of the Study:

Province	Population	Sample	
	Number	Number	Percentage %
Military	43	34	79.1
Governmental	378	211	55.8
Private	1386	337	24.3
Total	1807	582	32.2

Demographic characteristics of respondents are presented in Table (2).

Table (2)

Demographic characteristics of the community pharmacists surveyed at the military, governmental and private pharmacies in Jordan.

Characteristics		Number	Percent%
sex	Female	368	63.2
	Male	214	36.8
	Total	582	100.0
experience	0-11	117	20.1
	12-59	133	22.9
	60-119	90	15.5
	120+	242	41.6
	Total	582	100.0
education	B.Sc. (Pharm)	419	72.0
	B.Sc. (Pharm + M.B.A)	71	12.2
	B.Sc. (Pharm + PhD)	92	15.8
	Total	582	100.0
province	private	211	36.3
	government	337	57.9
	military	34	5.8
	Total	582	100.0

Table (2) shows that:

- 1- The number of female pharmacists in the sample of the study is (368), and a percentage of (63.2%), while males (214) accounted for (36.8%) of the sample of the study.
- 2- The highest percentage for the variable of experience is (41.6%), for (120+), and the lowest percentage is (15.5%), for the experience of (60-119 months).
- 3- The highest percentage for the variable of education is (72.0%), for **B.Sc. (Pharm)**, and the lowest percentage is (12.2%), for **(B.Sc. (Pharm + M.B.A))**.
- 4- The highest percentage for the variable of province is (57.9%), for government, and the lowest percentage is (5.8%), for military hospitals.

Table (3) shows the percentages for the issues discussed by pharmacists. And results show that diagnosis is the most frequently discussed issue (70.6%), followed by therapy (13.4%), and while reproductive health is the least discussed issue.

Table (3)

The issues discussed between pharmacists and patients.

Issues discussed	Number	Percent%
Diagnosis	411	70.6
Therapy	78	13.4
Physician	16	2.7
Reproductive health	10	1.7
Health in general	67	11.5
Total	582	100.0

Table 4

Attitudes of pharmacists towards their role in community- based clinical services.

CLINICAL ASPECTS	Mean	Standard deviation
1. Consulting and informing doctors (e.g. Generically equivalent) and other health personnel	4.03	0.87
2. Taking the drug history of the patient?	4.01	1.01
3. Explaining the biological test results to the patient	3.80	1.09
4. Following and managing the drug therapy of the patient	4.03	1.05
5. Enhance the adherence of the patient	3.95	1.11
6. Consultancy on OTC drugs (self-therapy)	3.97	1.12
7. Providing continuous education for the patient through courses and publications	3.82	1.12
8. Offering drug uses information to the patient or their relatives		
a) Name and features of the drug	4.17	0.98
b) Dose scheme	4.17	0.90
c) Duration of use	4.19	0.88
d) Application form and route	4.27	0.93
e) Adverse effects	4.09	1.07
f) Storage conditions	4.00	0.98
g) Warnings	4.19	0.93
9. Counseling about drug interactions		
a) Preventing or minimizing drug interactions	4.01	0.94
b) Preventing or minimizing drug-illness interaction	3.96	0.96
c) Preventing or minimizing drug-food interactions	4.04	0.88
d) Following, minimizing and reporting drug adverse and unwanted effects.	3.95	1.04
10. Being informed about health risks		
a) Alcohol addiction	3.84	1.20
b) Overeating	3.93	1.02
c) Having a sedentary life	3.91	1.07
d) Smoking	4.03	1.10
11 Prevention of diseases		
a) Immunization program	3.91	0.92
b) Sexually transmitted diseases	3.76	1.07
c) Health risks associated with travel destinations (e.g., malaria)	3.70	1.11
d) Home accidents like poisoning	3.92	1.03
12 Counseling about social education themes		
a) To present the names and address details of institutions treating drug addicts	3.64	1.11
b) To present the names and address details of institutions supporting patients without social insurance	3.79	1.08
c) To present the names and address details of institutions detoxifying alcohol addicts	3.67	1.12

Table (4)

shows that the means for the items related to pharmacists' attitudes towards their community based services ranged between (3.64-4.19), with the highest mean for the choice of application form and route, when offering drug uses information to patients or their relatives, followed by the item related to the duration of use and

providing warnings. The lowest mean was calculated for presenting the names and address details of institutions treating drug addicts.

Statistically significant differences were found ($\alpha \leq 0.05$) in the attitudes of community based pharmacists, due to the variable of gender, table (5) present the results. Results suggests that most differences were on behalf of female pharmacists,

Table (5) : attitudes of community-based pharmacists towards their clinical pharmacy service role according to the variable of gender.

CLINICAL ASPECTS	Mean		Sig.
	Female	Male	
1. Consulting and informing doctors (e.g. Generically equivalent) and other health personnel	3.97	4.12	.043
2. Taking the drug history of the patient?	4.17	3.72	.000
3. Explaining the biological test results to the patient	4.00	3.45	.000
4. Following and managing the drug therapy of the patient	4.19	3.74	.000
5. Enhance the adherence of the patient	4.19	3.53	.000
6. Consultancy on OTC drugs (self therapy)	4.12	3.72	.000
7. Providing continuous education for the patient through courses and publications	4.24	3.09	.000
8. Offering drug uses information to the patient or their relatives			
h) Name and features of the drug	4.45	3.68	.000
i) Dose scheme	4.33	3.90	.000
j) Duration of use	4.35	3.91	.000
k) Application form and route	4.47	3.91	.000
l) Adverse effects	4.45	3.48	.000
m) Storage conditions	4.18	3.69	.000
n) Warnings	4.43	3.78	.000
9. Counseling about drug interactions			
e) Preventing or minimizing drug interactions	4.13	3.81	.000
f) Preventing or minimizing drug-illness interaction	4.07	3.78	.000
g) Preventing or minimizing drug-food interactions	4.12	3.91	.005
h) Following, minimizing and reporting drug adverse and unwanted effects.	3.96	3.93	.698
10. Being informed about health risks			
e) Alcohol addiction	3.78	3.93	.147
f) Overeating	3.93	3.91	.788
g) Having a sedentary life	3.93	3.87	.474
h) Smoking	3.93	4.20	.004
11 Prevention of diseases			
e) Immunization program	4.00	3.76	.002
f) Sexually transmitted diseases	3.80	3.68	.170
g) Health risks associated with travel destinations (e.g., malaria)	3.76	3.60	.099
h) Home accidents like poisoning	3.96	3.85	.188
12 Counseling about social education themes			
d) To present the names and address details of institutions treating drug addicts	3.73	3.48	.008
e) To present the names and address details of institutions supporting patients without social insurance	3.88	3.64	.011
f) To present the names and address details of institutions detoxifying alcohol addicts	3.78	3.48	.002

Table (6)

Shows the differences in the attitudes of community based pharmacists Concerning their role, according to the variable of experience. Results revealed that there are statistical differences ascribed to experience, and on behalf of (12-59 months) for the items related to diagnosis, therapy and drug uses information, and counseling about drug interactions. Concerning the prevention of diseases and counseling about social education themes, the differences were on behalf of the pharmacists with (120+ months) of experience.

Table 6

The interaction between the attitudes of community based pharmacists towards their role in clinical service, and their experience:

CLINICAL ASPECTS	Experience*				Sig.
	0-11	12-59	60-119	120+	
1. Consulting and informing doctors (e.g. Generically equivalent) and other health personnel	3.73	4.05	4.20	4.09	.000
2. Taking the drug history of the patient?	3.92	4.08	4.34	3.88	.001
3. Explaining the biological test results to the patient	3.95	3.46	3.91	3.87	.001
4. Following and managing the drug therapy of the patient	3.72	3.98	4.43	4.05	.000
5. Enhance the adherence of the patient	4.03	4.07	4.02	3.82	.116
6. Consultancy on OTC drugs (self-therapy)	3.87	4.14	4.21	3.84	.010
7. Providing continuous education for the patient through courses and publications	4.06	3.74	3.91	3.71	.031
8. Offering drug uses information to the patient or their relatives					
o) Name and features of the drug	4.39	3.99	4.62	3.98	.000
p) Dose scheme	4.28	4.00	4.62	4.05	.000
q) Duration of use	4.27	4.54	4.62	3.79	.000
r) Application form and route	4.37	4.59	4.62	3.90	.000
s) Adverse effects	4.26	4.16	4.01	4.00	.124
t) Storage conditions	4.12	4.10	4.07	3.86	.033
u) Warnings	4.46	4.38	4.26	3.92	.000
9. Counseling about drug interactions					
i) Preventing or minimizing drug interactions	4.15	4.08	3.78	3.98	.026
j) Preventing or minimizing drug-illness interaction	4.05	4.06	3.78	3.93	.107
k) Preventing or minimizing drug-food interactions	4.15	4.24	3.62	4.03	.000
l) Following, minimizing and reporting drug adverse and unwanted effects.	4.09	4.08	3.50	3.98	.000
10. Being informed about health risks					
i) Alcohol addiction	3.93	3.80	3.68	3.86	.474
j) Overeating	4.31	3.86	3.66	3.88	.000
k) Having a sedentary life	4.30	3.81	3.66	3.87	.000
l) Smoking	4.11	4.08	4.00	3.97	.617
11 Prevention of diseases					
i) Immunization program	4.09	3.84	3.68	3.94	.009
j) Sexually transmitted diseases	3.82	3.59	3.68	3.85	.106
k) Health risks associated with travel destinations (e.g., malaria)	3.57	3.55	3.52	3.92	.001
l) Home accidents like poisoning	4.11	3.88	3.38	4.05	.000
12 Counseling about social education themes					
g) To present the names and address details of institutions treating drug addicts	3.69	3.71	3.28	3.71	.010
h) To present the names and address details of institutions supporting patients without social insurance	3.85	3.67	3.52	3.93	.010
i) To present the names and address details of institutions detoxifying alcohol addicts	3.79	3.86	3.28	3.65	.001

Table (7)

Below, shows the presence of statistically significant differences among the attitudes of community-based towards their role in clinical pharmacy service, and most differences were on behalf of those with (B.SC. (Pharm+PhD), which is ascribed to the curricula taught at this program. Significant differences were revealed also concerning the provision of information related to drug uses mostly on behalf of (M.B.A) group.

Table (7)

Comparison between the attitudes of community-based pharmacists concerning their clinical role according to education.

CLINICAL ASPECTS	Education*			Sig.
	B.Sc. (Pharm)	B.Sc. (Pharm + M.B.A)	B.Sc. (Pharm + PhD)	
1. Consulting and informing doctors (e.g. Generically equivalent) and other health personnel	3.90	4.30	4.39	.000
2. Taking the drug history of the patient?	4.04	3.83	3.99	.274
3. Explaining the biological test results to the patient	3.78	3.90	3.79	.698
4. Following and managing the drug therapy of the patient	3.93	4.18	4.33	.002
5. Enhance the adherence of the patient	3.89	3.99	4.21	.044
6. Consultancy on OTC drugs (self-therapy)	3.89	3.99	4.33	.003
7. Providing continuous education for the patient through courses and publications	3.78	3.99	3.86	.344
8. Offering drug uses information to the patient or their relatives				
v) Name and features of the drug	4.25	4.30	3.71	.000
w) Dose scheme	4.16	4.44	4.03	.014
x) Duration of use	4.13	4.44	4.24	.021
y) Application form and route	4.20	4.44	4.46	.013
z) Adverse effects	4.05	3.85	4.46	.000
aa) Storage conditions	3.89	4.30	4.24	.000
bb) Warnings	4.13	4.30	4.36	.059
9. Counseling about drug interactions				
m) Preventing or minimizing drug interactions	3.86	4.58	4.24	.000
n) Preventing or minimizing drug-illness interaction	3.79	4.58	4.24	.000
o) Preventing or minimizing drug-food interactions	3.88	4.58	4.35	.000
p) Following, minimizing and reporting drug adverse and unwanted effects.	3.83	4.58	4.02	.000
10. Being informed about health risks				
m) Alcohol addiction	3.69	4.30	4.12	.000
n) Overeating	3.84	4.30	4.01	.002
o) Having a sedentary life	3.78	4.58	4.01	.000
p) Smoking	3.89	4.58	4.23	.000
11 Prevention of diseases				
m) Immunization program	3.84	4.44	3.84	.000
n) Sexually transmitted diseases	3.65	4.44	3.73	.000
o) Health risks associated with travel destinations (e.g., malaria)	3.64	4.38	3.47	.000
p) Home accidents like poisoning	3.84	4.38	3.92	.000
12 Counseling about social education themes				
j) To present the names and address details of institutions treating drug addicts	3.57	3.75	3.87	.048
k) To present the names and address details of institutions supporting patients without social insurance	3.80	3.75	3.76	.891
l) To present the names and address details of institutions detoxifying alcohol addicts	3.69	3.59	3.63	.719

Table (8)

Attitudes of community-based pharmacists towards their clinical role according to province.

CLINICAL ASPECTS	Province *			Sig.
	private	Government	military	
1. Consulting and informing doctors (e.g. Generically equivalent) and other health personnel	4.09	4.01	3.82	.228
2. Taking the drug history of the patient?	4.05	3.99	3.88	.626
3. Explaining the biological test results to the patient	3.76	3.88	3.24	.003
4. Following and managing the drug therapy of the patient	3.95	4.06	4.15	.405
5. Enhance the adherence of the patient	3.95	3.98	3.68	.320
6. Consultancy on OTC drugs (self-therapy)	4.00	3.96	3.88	.851
7. Providing continuous education for the patient through courses and publications	3.85	3.83	3.56	.367
8. Offering drug uses information to the patient or their relatives				
cc) Name and features of the drug	4.29	4.14	3.71	.004
dd) Dose scheme	4.20	4.17	4.03	.566
ee) Duration of use	4.39	4.03	4.44	.000
ff) Application form and route	4.39	4.16	4.56	.003
gg) Adverse effects	4.03	4.10	4.44	.110
hh) Storage conditions	4.19	3.90	3.76	.001
ii) Warnings	4.26	4.15	4.12	.349
9. Counseling about drug interactions				
q) Preventing or minimizing drug interactions	4.01	4.06	3.44	.001
r) Preventing or minimizing drug-illness interaction	3.93	4.02	3.56	.024
s) Preventing or minimizing drug-food interactions	3.93	4.11	4.03	.064
t) Following, minimizing and reporting drug adverse and unwanted effects.	3.94	4.02	3.35	.002
10. Being informed about health risks				
q) Alcohol addiction	4.11	3.76	2.88	.000
r) Overeating	4.09	3.87	3.44	.001
s) Having a sedentary life	4.06	3.88	3.32	.001
t) Smoking	4.21	3.98	3.32	.000
11 Prevention of diseases				
q) Immunization program	4.04	3.89	3.29	.000
r) Sexually transmitted diseases	3.95	3.74	2.74	.000
s) Health risks associated with travel destinations (e.g., malaria)	3.82	3.72	2.82	.000
t) Home accidents like poisoning	3.91	3.99	3.29	.001
12 Counseling about social education themes				
m) To present the names and address details of institutions treating drug addicts	3.92	3.52	3.12	.000
n) To present the names and address details of institutions supporting patients without social insurance	4.03	3.75	2.71	.000
o) To present the names and address details of institutions detoxifying alcohol addicts	3.91	3.55	3.35	.000

***after Scheffe' test**

Results indicate that pharmacists working at governmental and private pharmacies have more clinically-oriented attitudes towards their role, in comparison to the pharmacists working at military pharmacies.

Discussion

Pharmacists' attitudes showed that their most important perceived role is concerned with the provision of diagnosis. This role was followed by therapy, and finally discussing the reproductive health. Results of the study showed also that the attitudes of pharmacists towards there is impacted by their gender, education and experience and the province they work in. female attitudes showed the adoption of more active roles in clinical pharmacy service, and the pharmacists with higher levels of education and more experience have more positive attitudes towards their roles. This result agrees with the results of previous studies (Erdogan et al; Dunlop & Shaw, 2002; Dupotey et al, 2011).

Recommendations:

Based on the results of the study, the researcher recommends focusing on clinical components in the curricula of pharmacy programs at Jordanian universities. It is recommended also that the guidelines related to the profession of pharmacy are reviewed and modified, based on the practices in the developed countries, which give more attention to the clinical aspects of the profession.

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