

A Survey on Pharmacist Opinion about Pharmaceutical Care in Saudi Arabia

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Abstract

To explore opinions of pharmacist toward pharmaceutical care (PC) in Riyadh, the capital of Saudi Arabia. A descriptive, cross-sectional survey was conducted over a 3 months period (November 2012 to January 2013) in National Guard Primary Health Center, Riyadh the capital of Saudi Arabia. A 20-item questionnaire was adopted, validated and given to 100 pharmacists. The response rate was 80% where 100 respondents were approached, and 80 of them responded to our survey questionnaire. Overall Pharmacists expressed positive attitudes toward PC. A total of 73 (91%) respondents indicated that common situation regarding appropriateness of prescribing was receiving an error in prescription with incomplete information. A majority of the respondents (78.6%) disagreed or strongly disagree with the statement, that pharmacist of primary healthcare centers have insufficient knowledge/skills to provide PC. The finding of this study revealed that pharmacists have positive attitudes toward PC overall. More attention should be given to improve pharmacists' actual PC capabilities to extend their professional role. However, new development in Saudi hospitals would be recommended to improve health care systems.

Key words: Pharmaceutical care, pharmacist, pharmacy practice, Saudi Arabia

INTRODUCTION

The practice of pharmacy has been modified into a broader term, that is, pharmaceutical care (PC).^[1] PC means "a philosophy and standard of provision of care for patients."^[2] The International Pharmaceutical Federation 1998 statement describes PC as the responsible provision of pharmacotherapy for the purpose of achieving definite outcomes that improve a patient's quality of life.^[3] To provide PC, pharmacists should be fully equipped with the knowledge of clinical pharmacy and best communication skills.^[4] In countries like Saudi Arabia where PC practice is still developing, it is very important to promote positive PC attitudes among the pharmacists of tomorrow in order to achieve acceptance and implementation of PC in the region.

In an effort to improve pharmacy practice the formal education of pharmacy in Saudi Arabia initiated in 1959 by the establishment of the College of Pharmacy at King Saud University (COP-KSU). A 4-year pharmacy curriculum was adopted^[5] the name of the degree was Bachelor of Pharmacy and Medicinal Chemistry. In 1964, the curriculum was modified to be

5 years degree with the name of Bachelor of Pharmaceutical Science (B.Sc. Pharm). In 2005, the college started offering a Doctor of Pharmacy (Pharm.D) degree program, by September 2008; the COP-KSU adopted a new curriculum for both degrees. It is the first time for the COP-KSU in its 50 years history to offer a Pharm.D degree.^[6] Whereas there is a growing body of literature describing PC and research in developed countries^[7,8] few studies have evaluated the status of PC in developing countries.^[9,20]

The healthcare system in Saudi Arabia is well developed and structured, where PC is gradually implemented. The health care facilities are predominantly Governmental, offering their services to all citizens. Changes in the healthcare system affect all aspects including pharmacy services, pharmacists' role, and expectations and patients' behavior^[9] there has been few published study examining the attitudes of Saudi pharmacists.^[10] In 2008, a study was carried out in

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Saudi Arabia, to describe the current pharmacists practice in primary health centers. The sample size of this study included all pharmacists working in Primary health care (PHC) centers in Riyadh city. However, this study involved 34 pharmacists from 32 PHC centers with response rate of 53%. Hence, its finding does not reflect the situation in SA due to small sample size.^[11] Therefore, this study designed to determine opinions of pharmacist and practice toward PC.

METHODS

A descriptive, cross-sectional study was conducted over a 3 a month period from November 2012 to January 2013 at National Guard Primary Health Center (PHC) in Riyadh the capital of Saudi Arabia. The sample size included were all pharmacist working in National Guard Primary Health Center Riyadh.

Sample size

The target population for this study included all pharmacists working in National Guard Primary Health Center Riyadh.

A total of 100 pharmacists are working in the pharmacy sector of National Guard Primary Health Center (PHC). Therefore, the target population for this study was 100 pharmacists.

Questionnaire design

Data collection were carried out using a structured self-administered questionnaire to a single group of pharmacist. The questionnaire was adapted from the previous study and has validated. The face validity of the questionnaire was tested by senior pharmacists with experiences in survey research. The questionnaire was then validated using five experienced pharmacists in a pilot study conducted at Riyadh. The reliability test was done, and Cronbach's alpha was found to be 0.66. The pharmacists involved in the pilot study were not involved in the final research or had no contact with the participants of the study.

The questionnaire consisted of four sections. The first section included demographic information, including age, years of practicing pharmacy. The second section comprised of statements including the types of drug-related problem (DRP) identified by pharmacists at PHC during dispensing. The third section included statements about services provided by a pharmacist. This section consisted of four statements that might be used to describe the PC services. The last section explore the pharmacist opinions on different pharmaceutical services and contains 11 statements, also this section explored the barriers that might limit the implementation of PC services.

Ethical considerations

A written consent was obtained from the respondents for their participation; furthermore, formal permission to conduct this study was requested from the associate deputy executive director, community medicine family medicine and PHC National Guard Riyadh. Any questions that might disclose the identity of any respondents were avoided.

Data analysis

The data from each of the returned questionnaires were coded and entered into Statistical Package for the Social Sciences (SPSS) version 21 software (SPSS Inc., Chicago, IL, USA) which was used for statistical analysis. Descriptive statistics include percentages, and frequency distribution was calculated for each of the variables.

RESULTS

Of 100 pharmacists, 80 of the pharmacist responded to the questionnaire (response rate of 80%) with completely answered questionnaire. The demographic characteristics of the respondents are summarized in Table 1. More than half of survey respondents were Saudis (87.5%) while others were non-Saudis pharmacist (12.5%). Whereas 37.5% of the respondents having <5 years of experience in pharmacy practice only 30% of pharmacist having more than 10 years of experience.

The study results show that - The most common situation regarding appropriateness of prescribing was receiving an error in prescription with incomplete information 73 (91%) wrong dose 63 (78.5%) [Table 2]. Whereas other DRPs were wrong drug therapy 47 (58.7%), drug-drug interaction 40 (50%) this kind of situations was resolved by consulting the prescribing doctor.

Table 1: Respondent's age group and years in practice by nationality

Characteristics of respondents	Nationality (%)		Total (%)
	Saudi	Non-Saudi	
Age group			
23-30	28 (35)	3 (3.75)	31 (38.75)
31-40	32 (40)	4 (5)	36 (45)
41-50	9 (11.25)	3 (3.75)	12 (15)
51-60	1 (1.25)	0 (0)	1 (1.25)
Years in practice			
<5	28 (35)	3 (3.75)	30 (37.5)
5-10	22 (27.5)	4 (5)	24 (30)
>10	20 (25)	3 (3.75)	24 (30)

Pharmaceutical care services

Pharmacists are “front line” healthcare professionals and are involved in dispensing life-saving medication and giving health advice about medicines and the treatment of minor ailments to members of the public. The majority of respondents (86.3%) stated that they always provide the counseling of patients on their medications regarding indication, dose, and duration. Sixty percent of respondent claimed to monitor compliance of patients with chronic diseases by checking the frequency of re-fill. However, respondents (56.2%) “sometimes” monitored drug adverse reactions [Table 3].

Pharmacists’ opinion toward pharmaceutical care

Statements used in this part were intended to determine the opinion of the pharmacists toward PC. The proportions of pharmacists who agreed with statements related to the opinion toward PC are listed in Table 4. The majority of respondents (78.6%) disagree or strongly disagree with the statement of pharmacist of PHC centers have insufficient knowledge/skills to provide PC. In response to the statements on Pharmacist of PHC centers lack confidence to provide PC

(92.5%) reported disagreed or strongly disagreed. More than half of respondents (52.5%) implied that they strongly agreed to provide PC requires a special area to interview patients and advise them. Sixty percent of the respondents agreed with the statement that pharmacists should be given more permission in the process of treating patients to be able to provide PC. Providing PC requires increasing the number of pharmacists in PHCs with (51%) of respondents agreeing. Most of the respondents (52.2%) were disagreed that providing PC would negatively affect the relationship between the pharmacist and the physician in the center.

Majority of respondents (88.8%) either agreeing or strongly agreeing with the statement “PC helps to raise the level of job satisfaction for pharmacists.” There were 52.5% of respondents who agreed that PC requires the access of pharmacist to patient files and (30%) were strongly agree. Fifty-five percent of the respondents disagree with the statement that PHCs pharmacists do not feel that providing PC to be part of their job while (16.3%) of respondents claimed strongly disagree. Response to statement with “providing PC requires increasing the number of pharmacists working at health center statement” was (56.3%) strongly agree and (36.3%) agree.

Table 2: Types of DRPs related to prescribing

DRPs	n (%)	
	Yes	No
Wrong drug therapy*	47 (58.7)	32 (40)
Wrong dose*	63 (78.5)	17 (21.25)
Drug-drug interaction*	40 (50)	39 (48.7)
Contraindication*	42 (52.5)	37 (46.2)
Error prescription	73 (91.2)	7 (8.7)

*Missing responses. DRPs: Drug-related problems

Table 3: Pharmaceutical care provided by pharmacist at PHCs

Type of pharmaceutical care	n (%)		
	Always	Sometimes	Rarely
Patient counseling about dose and duration of therapy	69 (86.3)	9 (11.3)	2 (2.5)
Monitor the compliance of patients with chronic diseases by checking the frequency of re-fill	48 (60)	27 (33.7)	5 (6.2)
Monitor medication adverse reactions by asking patients the appropriate questions	15 (18.8)	45 (56.2)	20 (25.0)
Patient education to increase health awareness of patients	3 (3.8)	29 (36.2)	48 (60)

PHCs: Primary health care

DISCUSSION

Most of the respondents were <50 years old, which is productive age group. It is most important because they are the determinants of the labor force to provide PC services. The older age groups are predominantly for managerial responsibilities. This study described the readiness of Saudi pharmacists at PHCs toward the implementation of PC services in their practice. The number of prescriptions dispensed weekly was 500 prescriptions; encounter at least 60 patients with hypertension, diabetes, or asthma weekly. This would allow the time required for patient counseling and provide PC. Controlled studies showed that pharmacists’ involvement of education, assessment and monitoring of patients with these diseases improves the outcome.^[12-16]

The assessment of practice of PC is important to measure whether the pharmacists at PHCs employ PC in their practice. The assessment was based on the pharmacists identify of DRPs of patients and the counseling of patients. The study was found the many types of DRPs encountered by the pharmacists. These include wrong dose (78.8%), wrong drug therapy (59.5%), contraindications (53.2%) drug-drug interaction (50.6%) as well as prescription error (91.3%). These are the most common DRPs can be identified by pharmacists during their routine dispensing processes. Our findings showed that a large numbers of DRPs related to the logistic of prescription. Al-Aqeel and Abanmy conducted a study in center of Saudi Arabia among pharmacists working in PHCs and found high percent was received a prescription with a Prescription error (79%), inappropriate drug dose

Table 4: Pharmacist's opinion on providing pharmaceutical services

Items	n (%)				
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Pharmacist of PHCs does not have the capabilities and skills necessary to provide such services	1 (1.3)	2 (2.5)	15 (18.8)	31 (38.8)	31 (38.8)
Providing PC requires a special area to interview patients and advise them	42 (52.5)	29 (36.3)	5 (6.3)	4 (5)	-
Pharmacists of PHCs do not have confidence in himself and his ability to provide PC	-	3 (3.8)	3 (3.8)	40 (50.0)	34 (42.5)
Pharmacists should be given more permission in the process of treating patients to be able to provide PC	22 (27.5)	48 (60.0)	6 (7.5)	4 (5.0)	-
Providing PC require work on upgrading pharmacist of PHCs	30 (37.5)	41 (51.3)	7 (8.8)	1 (1.3)	1 (1.3)
Providing PC will negatively affect the relationship between the pharmacist and the physician of the center	-	1 (1.3)	16 (20.0)	42 (52.5)	21 (26.3)
Patients usually in a hurry to get such services	20 (25.0)	25 (31.3)	13 (16.3)	21 (26.3)	1 (1.3)
Providing PC helps to raise the level of job satisfaction for pharmacists	33 (41.3)	38 (47.5)	6 (7.5)	3 (3.8)	-
Providing PC requires the access of pharmacist to patient files	24 (30.0)	42 (52.5)	10 (12.5)	4 (5.0)	-
Pharmacist of PHCs feel that providing such services do not fall within the scope of his work	2 (2.5)	9 (11.3)	12 (15.0)	44 (55.0)	13 (16.3)
Providing PC requires increasing the number of pharmacists working at health centers	45 (56.3)	29 (36.3)	5 (6.3)	1 (1.3)	-

PHCs: Primary health care

(50%) drug-drug interaction (14%). A cross-sectional study in Kuwait^[17] found that percent of pharmacists who contacted physicians about dose adjustment (57%), drug-drug interaction (10%), inappropriate drug (23%).

Pharmaceutical care requires the development of a bond between the pharmacist and patient through effective communication to provide high-quality patient care. Counseling is an essential part of PC that cannot be compromised. It promotes compliance and helps to reduce dispensing errors since drugs and patients are identified individually in the process. It also empowers the patient to take a more active role in the care process. The present study found that the majority of pharmacist at PHCs had good practice in the area of educate patients about dose and duration of therapy and monitor the compliance of patients with chronic diseases by checking the frequency of re-fill. This finding corresponded to previous study.^[15] On the other hand, this study reported more than half of pharmacist only sometimes monitoring medication adverse reactions. This is of great concern, which requires urgent attention include continuing education programs regarding the adverse reaction among pharmacists at PHCs. Monitoring drug therapy prevents problems of adverse drug reactions as well as medication error.^[19]

In this study, small number of pharmacists who provided patients education to increase health awareness. This may be due to not much thought is given to the role pharmacists could play in educating patients. However, pharmacist can provide

educational intervention on chronic illness such as diabetes, asthma.^[9,20] The majority of respondents reported that PC providing is critical of part their job and indeed enhances their job satisfaction. This finding is consistent with the results of other studies carried out in Saudi Arabia,^[10,18] These studies showed that pharmacists have a positive attitude toward PC.

This study revealed that the majority of respondents considered sets of barriers that limit PC implementation, namely, require increasing the number of pharmacists at PHCs, access to medical records, designated closed counseling area. Similar findings reported in other studies examining barriers to the implementation of PC.^[21]

Study participants also reported lack of physicians' trust in pharmacists' abilities as another potential barrier to PC. In this study, pharmacists perceived inadequate teamwork of healthcare professionals and lack of adequate coordination with physicians as major barriers to PC. PC practice requires good communication and collaboration between pharmacists and physicians. Practitioners from each discipline can contribute to patient care by employing their professional expertise and specialized training. Fostering interprofessional education of undergraduate medical, and pharmacy students promotes the development of collaborative working relationships among future healthcare professionals.^[22] This could overcome the current inadequate teamwork among healthcare professionals.

This study highlights a need for more training and education of pharmacist practitioners to undertake expanded professional roles. Organizing special training courses or educational programs for pharmacists would enhance their preparation to practice PC. An even better approach would be the development of interprofessional continuing education programs in therapeutics that target both physicians and pharmacists to enhance their partnership in patient care.^[22]

Limitations of the study

The population of the study was limited to a national guard PHCs in Riyadh city. Self-reported competence may not necessarily reflect respondents' actual competence. Another potential limitation is that pharmacists' responses may be influenced by what is perceived to be the "right" answer. Participants may be biased with an inclination to provide socially desired responses.

CONCLUSIONS

The results of this survey suggest that pharmacists have positive attitudes toward PC overall. The majority of respondents provide the counseling of patients on their medications regarding use, dose, and duration of therapy.

Respondents in general had willingness but expressed major barriers such as access to medical records, designated closed counseling area, insufficient time, inadequate staff and pharmacy layout. Therefore, gradual introduction of PC could be feasible. In addition, Collaborative efforts among health authorities and educational institutions, as well as the integration of innovative approaches in pharmacy management and education could help overcome these barriers and achieve the transition toward PC practice.

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REFERENCES

1. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm* 1990;47:533-43.
2. Rovers JP, Currie JD, Hagel HP, McDonough RP, Sobotka JL. *A Practical Guide to Pharmaceutical Care*. Washington, DC: American Pharmaceutical Association; 2003.
3. International Pharmaceutical Federation: Statement on pharmaceutical care. Available from: <http://www.fip.nl/pdf/pharmcare.pdf>. [Last accessed on 2002 July 11].
4. Schommer JC, Cable GL. Current status of pharmaceutical care practice: Strategies for education. *Am J Pharm Educ* 1996;60:36-42.
5. Al-Wazaify M, Matowe L, Albsoul-Younes A, Al-Omran OA. Pharmacy education in Jordan, Saudi Arabia, and Kuwait. *Am J Pharm Educ* 2006;70:18.
6. Asiri YA. Emerging frontiers of pharmacy education in Saudi Arabia: The metamorphosis in the last fifty years. *Saudi Pharm J* 2011;19:1-8.
7. Martín-Calero MJ, Machuca M, Murillo MD, Cansino J, Gastelurrutia MA, Faus MJ. Structural process and implementation programs of pharmaceutical care in different countries. *Curr Pharm Des* 2004;10:3969-85.
8. Berenguer B, La Casa C, de la Matta MJ, Martín-Calero MJ. Pharmaceutical care: Past, present and future. *Curr Pharm Des* 2004;10:3931-46.
9. Al-Arifi MN. Patients' perception, views and satisfaction with pharmacists' role as health care provider in community pharmacy setting at Riyadh, Saudi Arabia. *Saudi Pharm J* 2012;20:323-30.
10. Al Rahbi HA, Al-Sabri RM, Chitme HR. Interventions by pharmacists in out-patient pharmaceutical care. *Saudi Pharm J* 2014;22:101-6.
11. Al-Aqeel S, Abanmy N. A survey on pharmacist working in primary health care centers in Riyadh, Saudi Arabia. *Saudi Pharm J* 2008;16:3-4.
12. Sookaneknun P, Richards RM, Sanguanserm Sri J, Teerasut C. Pharmacist involvement in primary care improves hypertensive patient clinical outcomes. *Ann Pharmacother* 2004;38:2023-8.
13. Vivian EM. Improving blood pressure control in a pharmacist-managed hypertension clinic. *Pharmacotherapy* 2002;22:1533-40.
14. Krass I, Taylor SJ, Smith C, Armour CL. Impact on medication use and adherence of Australian pharmacists' diabetes care services. *J Am Pharm Assoc* 2005;45:33-40.
15. Ramanath K, Balaji D, Nagakishore Ch, Kumar SM, Bhanuprakash M. A study on impact of clinical pharmacist interventions on medication adherence and quality of life in rural hypertensive patients. *J Young Pharm* 2012;4:95-100.
16. Schulz M, Verheyen F, Mühlig S, Müller JM, Mühlbauer K, Knop-Schneickert E, *et al.* Pharmaceutical care services for asthma patients: A controlled intervention study. *J Clin Pharmacol* 2001;41:668-76.
17. Awad A, Al-Ebrahim S, Abahussain E. Pharmaceutical care services in hospitals of Kuwait. *J Pharm Pharm Sci* 2006;9:149-57.
18. Royal S, Smeaton L, Avery AJ, Hurwitz B, Sheikh A. Interventions in primary care to reduce medication related adverse events and hospital admissions: systematic review and meta-analysis. *Qual Saf Health Care* 2006;15:23-31.
19. Chua SS, Kok LC, Yusof FA, Tang GH, Lee SW,

- Efendie B, *et al.* Pharmaceutical care issues identified by pharmacists in patients with diabetes, hypertension or hyperlipidaemia in primary care settings. *BMC Health Serv Res* 2012;12:388.
20. Al-Arifi MN, Al-Dhuwaili AA, Gubara OA, Al-Omar HA, Al-Sultan MS, Saeed MI. Pharmacists' understanding and attitudes towards pharmaceutical care in Saudi Arabia. *Saudi Pharm J* 2007;15:146-59.
21. Oparah AC, Arigbe-Osula EM. Evaluation of community pharmacists' involvement in primary health care. *Trop J Pharm Res* 2002;1:67-74.
22. Gallagher RM, Gallagher HC. Improving the working relationship between doctors and pharmacists: Is inter-professional education the answer? *Adv Health Sci Educ Theory Pract* 2012;17:247-57.

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