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Original Research Article

Attitudes and Perceptions of Healthcare Providers towards Clinical Pharmacy Services at a Tertiary Care Hospital in Riyadh, Saudi Arabia

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Abstract

Purpose: To evaluate the attitudes and perceptions of health care providers towards clinical pharmacy services at King Khalid University Hospital Riyadh Saudi Arabia

Method: A cross-sectional survey of healthcare providers was conducted in King Khalid University Hospital, Riyadh, Saudi Arabia from September to November 2013. A self-administered questionnaire was delivered to health care professionals (HCPs) who included physicians, pharmacists and nurses.

Results: The response rate was 78 % (457/600). The majority of the respondents (92.4 %) knew that the clinical pharmacist is an integral part of the medical team while 86.5 % of the participants expressed confidence in the ability of clinical pharmacists to improve the quality of patient care through their practice. Despite the relative lack of awareness of the increasing interest in clinical pharmacy practice (59.6 % were not aware of such a trend), pharmacists were less appreciative ($p < 0.05$) of the positive role of clinical pharmacists in direct patient care compared to both physicians and nurses (67.4, 74.3 and 72.3 %, respectively).

Conclusion: The findings of this study reveal that health care professionals HCPs have positive attitude towards the role of the clinical pharmacist in the health care setting studied. However, there is a need for Saudi hospitals to adopt full clinical pharmacy service including drug monitoring, drug information and pharmacotherapy for enhanced health care.

Keywords: Saudi Arabia, Clinical pharmacy services, Healthcare professionals, Attitude, Patient care

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INTRODUCTION

Clinical pharmacy is a health science discipline in which pharmacists provide patient care that optimizes medication therapy and promotes health, wellness, and disease prevention [1]. This field of pharmacy practice focuses on patient-oriented rather than drug product-oriented service [2]. The typical role of clinical pharmacists involves ensuring appropriate

prescription and administration of the correct medicine to the right patient in the appropriate dose through the proper route of administration. In addition clinical pharmacist are to monitor patient adherence to therapy, provide drug information, monitor patient responses and laboratory values, and provide patient and provider education. Other responsibilities carried out by clinical pharmacists may include but are not limited to: prevention of medication errors,

improvement of therapeutic outcomes, performing patient counseling, and maximization of cost-effectiveness of drug therapy. However, in order to perform these tasks efficiently an advanced level of collaboration must exist between clinical pharmacists and other healthcare providers which will not only improve the patients' pharmacotherapeutic outcomes but also will enhance the efficiency of the healthcare system as a whole [3].

Clinical pharmacists are a principal source of evidence-based drug information for improved safe and appropriate use of medications [1]. Several studies have been conducted in some Arab countries to assess physicians' acceptance of the clinical pharmacists' role in the healthcare system. In Jordan, 63 % of physicians expect the pharmacist to educate their patients with regard to the safe and appropriate use of drugs [4].

In addition, approximately half of the physicians agreed that pharmacists were always a reliable source of drug information [4]. In a similar study conducted in Sudan, physicians were found to be 'uncomfortable' with pharmacists suggesting or recommending medications to their patients [5], especially as collaboration between the physician and pharmacist has been described as a 'difficult one' [5]. Other studies have reported the existence of communication gap between pharmacists and physicians [6,7]

The current health system in the Middle East still falls short of expectations, as some studies have found that although physicians are comfortable with the role of pharmacist in patient counseling, they are, however, uncomfortable with pharmacists participating in direct patient care and clinical rounds [8,9]. One study suggested that low acceptance by physicians of the role of the pharmacist in direct patient care is due to poor collaboration between physicians and pharmacists [10].

The aim of this study was to evaluate the attitudes and perceptions of health care providers towards clinical pharmacy services at King Khalid University Hospital (KKUH), Riyadh, Saudi Arabia, and to proffer solutions to overcome the challenges.

EXPERIMENTAL

A cross-sectional survey of healthcare providers was conducted in King Khalid University Hospital KKUH Saudi Arabia between September and

November 2013. Data collection was carried out using a structured self-administered questionnaire. The study was approved by institutional review board (IRB) from King Saud University College of Medicine (approval ref no. 12/3260/IRB). A total of 600 questionnaires were distributed by convenience sampling; sample size was estimated from a previous published study [8].

The pharmacy department at King Khalid University Hospital (KKUH) was the first pharmacy department to implement clinical pharmacy program outside the United States of America (USA). This service was established in 1983 with a clinical pharmacist, with 15 clinical pharmacists employed after the initial trial. Subsequently, the service was expanded to cover all hospitals clinical disciplines [11]. Included in the study were all health care providers (physicians, nurses, pharmacists as well as other health care professionals and technicians. Clinical pharmacists were excluded from the study.

The questionnaire was written in English language and developed from review of the literature and previous studies relating to the clinical pharmacy services [12]. The survey questions were pre-tested by health care providers with extensive experience in clinical pharmacy services. A pilot study of 20 participants was carried out to check for readability, understanding, question design and the length of the questionnaire. Based on the result of this pilot study the questionnaire was used with some modifications. The questionnaires were self-administered.

The questionnaire composed of three sections. The first section consisted of six items that mainly focused on the demographic information of the respondents, their experience and current position in the hospital. Section two explored the importance of clinical pharmacist in health care settings, and consisted of ten statements. Respondents were asked to rate their response to these statements using 4 options, "agree", "neutral", "disagree", or "I don't know". The last section consisted of four questions on clinical pharmacist role in health care sector using a four-point Likert-type scale "agree", "neutral", "disagree", or "I don't know".

Data analysis

The data were entered into SPSS version 21 for Windows for analysis. Both descriptive and analytic statistics were applied. For descriptive analysis, results were expressed as numbers

and percentages (95 % CI). Chi-squared and Fisher's exact tests were used to find statistically significant difference among the participants with $p < 0.05$ considered statistically significant.

RESULTS

A total of 422 questionnaires were appropriately filled, giving a response rate of 78 %. The demographic characteristics of the respondents were summarized in Table 1. About 76 % (n = 321) of respondents were under 46 years old. Almost eight-tenth of the respondents were female (78.7 %) and non-Saudis (79.6 %). The majority of respondents are junior healthcare providers (82.7 %) while only 13.7 % senior healthcare providers. With regard to participants' professions, 68.7 % were nurses, 17.5 % were physicians, 10.9 % were pharmacists and 2.8 % other healthcare providers. The majority of the respondents 73.9 % obtained their qualifications from either (North America or Europe) or other countries respectively while 21.3 % of participants obtained their qualification degree from Saudi Arabia.

The results show that healthcare providers' had positive attitude toward the roles of clinical

pharmacists regardless of their profession. The majority of them reported that the clinical pharmacist is an important and integral part of the medical team and that they believe in clinical pharmacists' capacity to improve the quality of patient care in hospital setting (92.4 and 86.5 %, respectively). More than 85 % agreed that the presence of clinical pharmacists in the medical team is essential for hospital accreditation and that they contribute to reduction of medication errors and improvement of therapeutic outcomes. However, majority of respondents (70 %) reported that the clinical pharmacists need training in different medical areas to perform patient counseling less than 50 % of respondents stated that there is an increasing interest in clinical pharmacy as a profession in Saudi Arabia.

There were some statistical differences among different professions in regard to their response to the statements, pharmacists were significantly ($p < 0.05$) less appreciative of the role of clinical pharmacist in direct patient care with 67.4 % agreeing versus 74.3 and 72.3 % for both physicians and nurses respectively.

Table 1: Demographic profile of respondent healthcare providers

Variable	Frequency
Gender	
Male	90 (21.3%)
Female	332 (78.7%)
Age	
<25 years	2 (0.5%)
25-35 years	182 (43.1%)
36-45 years	137 (32.5%)
46-55 years	79 (18.7%)
56 and above	22 (5.2%)
Nationality	
Saudi	86 (20.4%)
Non-Saudi	336 (79.6%)
Professional cadre	
Physician	
Pharmacist	74 (17.5%)
Nurse	46 (10.9%)
Other healthcare providers (Pharmacy & Radiology Technicians, Healthcare Assistant)	290 (68.7%)
12 (2.8%)	
Professional classification	
Senior healthcare providers (consultant, senior registrar, registrar, senior pharmacist, supervisor pharmacist, head nurse)	58 (13.7%)
Junior healthcare providers (residents, intern, junior pharmacist, nurse)	349 (82.7%)
Other healthcare providers (Pharmacy Technician, Radiology Technician, Healthcare Assistant)	15 (3.6%)
Country of qualification	
Saudi Arabia	90 (21.3%)
North America or Europe	9 (2.1%)
Other countries	312 (73.9%)
Saudi Arabia and North America and/or Europe	11 (2.6%)

Pharmacists were also significantly ($p < 0.05$) less confident in the role of clinical pharmacist in improving the quality of patient care during medical rounds with 83 % of them agreeing to the statement versus 92 % of physicians. In regard to the ability of clinical pharmacist to minimize medication errors and improve therapeutic outcomes, 84.8 % of pharmacists agreed to the statement compare to 92 and 88 % for physicians and nurses, respectively. As for the role of pharmacists in maximization of cost-effectiveness, respondents' opinions regarding the 10 statements are summarized in Table 2.

There was significantly ($p < 0.05$) less awareness about such roles, with 69 % agreeing to

statement on cost-effectiveness versus 81.1 % and 80.4 % of physicians and pharmacist, respectively. Table 3 illustrates the respondents' views on some of the study statements according to their profession.

Table 3 details respondents' views on some of the study statements according to their profession.

Considering professional classification, around 88 % of senior healthcare providers had significantly ($p < 0.05$) more acceptance regarding the role of clinical pharmacist in direct patient care compare to 69.5 % of junior staff and

Table 2: Opinions of healthcare providers on clinical pharmacy services

Statement	Agree N (%)	Neutral N (%)	Disagree N (%)	Idon't know N (%)	Missing N (%)
Previously heard about clinical pharmacy programs	255(61.3%)	65(15.6%)	23(5.5%)	73(17.5%)	6(1.4%)
The clinical pharmacist is an important and integral part of the medical team	389(92.4%)	24(5.7%)	1(0.2%)	7(1.7%)	1(0.2%)
The clinical pharmacist helps to improve the quality of medical care in a hospital setting	360(86.5%)	44(10.6%)	6(1.4%)	6(1.4%)	6(1.4%)
The clinical pharmacist is trained to perform patient counseling	290(70%)	69(16.7%)	27(6.5%)	28(6.8%)	8(1.9%)
The clinical pharmacist as part of medical teams is essential for hospital accreditation	372(88.4%)	35(8.3%)	3(0.7%)	11(2.6%)	1(0.2%)
The clinical pharmacist as part of medical team minimizes medication errors and improve patient therapeutic outcomes	370(88.1%)	35(8.3%)	10(2.4%)	5(1.2%)	2(0.5%)
There is increasing interest in clinical pharmacy as a profession in Saudi Arabia	168(40.4%)	108(26.0%)	13(3.1%)	127(30.5%)	6(1.4%)
Doctors and other healthcare staff accept the involvement of clinical pharmacists in patient management and provide extra service within the framework of clinical pharmacy	302(71.9%)	81(19.3%)	19(4.5%)	18(4.3%)	2(0.5%)
The presence of clinical pharmacist in a clinical ward team improves the quality of patient care in a hospital setting	346(82.2%)	56(13.3%)	7(1.7%)	12(2.9%)	1(0.2%)
I think that the clinical pharmacist is able to maximize cost-effectiveness and improve patient outcomes	301(71.8%)	90(21.5%)	8(1.9%)	20(4.8%)	3(0.7%)

Table 2: Respondents views according to profession

Statement	Response	Profession				P-value N (%)
		Physician N (%)	Pharmacist N (%)	Nurse N (%)	Other N (%)	
The clinical pharmacist helps improving the quality of medical care in a hospital setting	Agree	67 (90.5%)	41 (89.1%)	242 (85.2%)	10 (83.3%)	0.034
	neutral	7 (9.5%)	2 (4.3%)	35 (12.3%)	0 (0.0%)	
	disagree	0 (0.0%)	2 (4.3%)	4 (1.4%)	0 (0.0%)	
	I don't know	0 (0.0%)	1 (2.2%)	3 (1.1%)	2 (16.7%)	
Doctors and other healthcare staff accept the involvement of clinical pharmacists in patient management and providing extra service within the framework of clinical pharmacy	Agree	55 (74.3%)	31 (67.4%)	209 (72.3%)	7 (63.6%)	0.017
	neutral	13 (17.6%)	7 (15.2%)	62 (21.1%)	0 (0.0%)	
	disagree	4 (5.4%)	5 (10.9%)	9 (3.1%)	1 (9.1%)	
	I don't know	2 (2.7%)	3 (6.5%)	10 (3.5%)	3 (27.3%)	
Clinical pharmacist as part of medical teams minimizes medication errors and improve patient therapeutic outcomes	Agree	68 (91.9%)	39 (84.8%)	254 (87.9%)	9 (81.8%)	0.027
	neutral	6 (8.1%)	2 (4.3%)	27 (9.3%)	0 (0.0%)	
	disagree	0 (0.0%)	4 (8.7%)	5 (1.7%)	1 (9.1%)	
	I don't know	0 (0.0%)	1 (2.2%)	3 (1.0%)	1 (9.1%)	
I think that clinical pharmacist able to maximize cost-effectiveness and improve patient outcomes	Agree	60 (81.1%)	37 (80.4%)	198 (69.0%)	6 (50.0%)	0.025
	neutral	12 (16.2%)	7 (15.2%)	68 (23.7%)	3 (25.0%)	
	disagree	1 (1.4%)	2 (4.3%)	5 (1.7%)	0 (0.0%)	
	I don't know	1 (1.4%)	0 (0.0%)	16 (5.6%)	3 (25.0%)	

88 % of them also showed significantly ($p < 0.05$) more appreciation than junior healthcare providers (82 %) to the role of clinical pharmacist as a member of clinical ward team.

All of the participants who obtained their qualifications from either North America or Europe and Saudi Arabia accepted the involvement of clinical pharmacist in direct patient management, compared to 60 % of participants who obtained their qualifications from only Saudi Arabia.

DISCUSSION

Pharmacists' scope of practice includes broad areas of professional responsibilities, ranging from the provision of traditional services of producing and distributing drug preparations to the non-traditional provision of pharmaceutical care [1]. Clinical pharmacy services involve optimizing patient outcomes by addressing a patient's medication-related needs in collaboration with the patient and other healthcare professionals.

Some of the studies done in this regard in Middle East suggested that physicians were uncomfortable with the role of clinical pharmacist in direct patient care [8,9]. However, in the current study physicians and other healthcare providers not only welcomed the role of clinical pharmacist in direct patient care but also they accepted the involvement of clinical pharmacists in patient management and, to some extent, the

participation of clinical pharmacist as a member of clinical ward team. Healthcare providers at KKUH showed a good perception of the role of clinical pharmacist in improving patient outcomes.

Surprisingly, the pharmacists were less confident about the ability of clinical pharmacists to minimize medication errors and improve the therapeutic outcomes compare to physicians and nurses and also less appreciative to clinical pharmacist role in direct patient care. This somewhat pessimistic point of view of some pharmacists may be due to the presumption by many pharmacists that physicians are overwhelmingly disapproving the involvement of pharmacists in these aspects of patient care and this in turn may be attributed to lack of direct communication and inter-professional relationship between some pharmacists and physicians.

The results of the current study resemble those of similar study done in this regard at united arab emirates UAE [12]. The results reinforced the fact that clinical pharmacist should communicate positively with physicians and show them their capabilities in direct patient care. Some studies [11] suggested that clinical pharmacists should be encouraged to participate in direct patient care instead of administrative positions so that their impact on the quality of healthcare would be felt and fully appreciated. Focusing on physician-pharmacist relationship, a study conducted in University of Iowa, found three factors to be significantly associated with collaborative care;

trustworthiness, role specification and professional interaction [13].

Limitations of the study

The results of this study should be considered within the context of its limitations. First, sampling was done using convenience sampling and not based on stratification of participants according to their profession. Second, this study was conducted at King Khalid University Hospital and the results of the current study should not be extended to other hospitals where the level of clinical pharmacy implementation varies significantly. Third, the participants in this study included pharmacists who may be biased. Finally the questionnaire used was in English language. Since Arabic is the main language used in Saudi Arabia, the use of the English language might have constituted a barrier to the study's effectiveness.

CONCLUSION

The study shows that generally healthcare providers are willing to cooperate with clinical pharmacists in improving patient quality of care and that clinical pharmacists should increase their collaboration with physicians in order to improve their involvement in direct patient care. Inter-professional relationship between physicians and nurses on the one hand, and pharmacists on the other, should be emphasized in medical, nursing and pharmaceutical curricula. Furthermore, the role of the clinical pharmacist in the hospital healthcare team should be clearly defined and explained.

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