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Perceptions and expectations of health care providers towards clinical pharmacy services in a mental health hospital in Qatar

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ABSTRACT

Background: With the growing burden of mental disorders, pharmacists are ideally positioned to play an important role in supporting people with a mental illness. However, the value of clinical pharmacists within mental health remains unrecognized by other healthcare professionals.

Aims: The purpose of this study was to explore the perceptions and expectations of mental health professionals on the provision of clinical pharmacy services (CPS) at a psychiatric hospital.

Methods: A cross-sectional, self-administered, online survey was administered to physicians and nurses working at a psychiatric hospital. Five-point likert scales were used to measure participant's perceptions and expectations about the CPS provided. Descriptive and inferential statistical analysis were undertaken.

Results: Both physicians and nurses reported positive perceptions regarding the CPS provided at the hospital, although physicians agreement with positive statements was higher than those reported by nurses (mean likert scale score 4.76 and 4.45, respectively). There was a statistically significant positive association between participants' years of experience and agreeing that clinical pharmacy services are essential for achieving hospital accreditation ($\chi 2 = 13.11$, $\varphi = 0.41$, $p = 0.04$). A statistically significant positive association was noted between the physicians' current position and agreeing that pharmacists assist physicians in selecting more cost effective medication regimens ($\chi 2 = 16.55$, $\varphi = 0.62$, $p = 0.04$).

Conclusion: Physicians and nurses have mostly positive perceptions and expectations from clinical pharmacists at the psychiatric hospital. However, traditional clinical pharmacy services were more favorably viewed than those associated with advanced clinical roles such as prescribing and pharmacist-led medication management clinics.

1. Introduction

Health care provision has changed significantly over the last two decades, from a traditional biomedical model to a more patient-centered model. These changes are initiated and supported by several governmental and non-governmental institutions to promote this practice worldwide (Patient-Centered Outcomes Research Institute (PCORI, 2011). A patient-centered care model refers to the creation of a partnership between the patients and their families with their health care providers. In this model, the patient's needs, values and preferences are considered to adapt care to the patient's context (Gerteis et al., 1993; Robb and Seddon, 2006). There is also a strong movement towards empowering patients in being an active participant in their care and in health decision making (Basset et al., 2010). The establishment of clinical pharmacy facilitated the evolution of the pharmacists' role from the traditional aspects of compounding and distribution of medications to becoming patient-centered by focusing on optimizing medication-related outcomes throughout the medication management process (Ng and Harrison, 2010). Research has shown that positive patient outcomes result of pharmacists professional interactions with patients, including higher patient satisfaction with their care and improved trust in the services that are provided to them (Onda et al., 2009; Worley, 2006).

Clinical pharmacists can offer complementary skills, knowledge and services to those that are provided by other health care professionals within a multidisciplinary team, specifically by preventing, identifying, or resolving drug-related problems; by ensuring the safe and efficacious use of medicines; by providing comprehensive drug information to patients and other health care professionals; and by promoting patient adherence to medications (Rubio-Valera et al., 2014). However, clinical

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pharmacy services, particularly in mental health, still struggle to gain recognition by other healthcare professionals and the public.

Some studies have shown positive effects of the integration of pharmacists into the multidisciplinary team caring for people with mental illness. Canals and colleagues studied the clinical outomes of psychiatric pharmacy services among acute care psychiatric inpatients (Canales et al., 2001). The results of their study showed positive medication-related outcomes such as response to treatment and reduced drug-induced extrapyramidal symptoms in the patient group who received clinical pharmacy services compared to those patients who received only traditional dispensary pharmacy services.

In order to provide better pharmaceutical care for individuals with mental illness, Hamad Medical Corporation (HMC) incorporated clinical pharmacy services (CPS) at all HMC-related psychiatric settings (inpatient, outpatient and community) as of January 2014. Although the model of practicing clinical pharmacy within the psychiatric hospital in Qatar is still in the early stage of development, the current clinical pharmacists' role is comprehensive and can be summarized as follows:

- Participating in multidisciplinary clinical rounds with the explicit aim of reviewing and optimizing the appropriateness of medications prescribed
- Providing patient/family education and counseling in order to promote adherence to medication
- In collaboration with the multidisciplinary team (MDT), ensuring the safe and efficacious use of medicines
- Providing comprehensive drug information to patients and other health care professionals
- Monitoring patients on high alert psychotropic medications like lithium and clozapine

Research on implementation of CPS has been reported to be contingent upon physicians' attitudes and acceptance, and can foster collaborative practices (Doucette et al., 2005; Zillich et al., 2004). As such, the aim of this study is to examine the healthcare professionals' perceptions and expectations on the provision of CPSs at the psychiatric hospital at HMC. The study will explore areas of strengths and weaknesses in the CPSs, underline physician expectations of clinical pharmacists in order to improve the CPSs in the psychiatric hospital, help define the role of the clinical pharmacists in relation to other healthcare professionals within the psychiatric MDT and assess the factors underlying the MDT's perceptions and attitudes towards CPSs provided in the psychiatric hospital.

2. Methods

Ethics approval for conducting this research project was obtained from HMC Medical Research Center (MRC) Institutional Review Board (Reference number: MRC #16187/16). Permission to administer the questionnaire was also granted by the psychiatric hospital director and board members.

2.1. Study design and participants

The study was designed as a descriptive, quantitative and cross-sectional survey of physicians and nurses working at HMC psychiatric hospital in Doha, Qatar. Physicians and nurses were eligible to participate if they had an interaction with clinical pharmacists and if they were part of the MDT which meets at least once per week. A sample size of 120 was calculated (95% +/- 5%) using the validated online calculator Raosoft® (Raosoft Inc., Seattle,WA, USA). The survey was circulated to a total of 172 eligible participants through their direct supervisors and administered online using SurveyMonkey® (SurveyMonkey, San Mateo, CA, USA).

2.2. Survey tool

The survey tool was adapted from others reported in studies undertaken in the Arab region and China (Ibrahim and Ibrahim, 2014; Abu-Gharbieh et al., 2010; Li et al., 2014). Initial content validation was performed by all researchers by checking the appropriateness of the language, clarity, format, relevance, and readability of the survey tool. In addition, it was pilot tested by three healthcare providers working at the psychiatric hospital (but who were not eligible participants; i.e., were not nurses or physicians). All necessary edits to the survey tool were undertaken based on the pilot feedback. The final version of was divided into the following three sections:

Section 1: Participants' demographic characteristics (nine items)

Section 2: The participants' expectations about the CPSs provided (14 items anchored on a five-point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

Section 3: The participants' perceptions about the CPSs provided (10 items anchored on a five-point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

2.3. Data analysis

The data were computed and analyzed using SPSS® statistical software to perform both descriptive and inferential statistical analysis as needed. The results were reported as frequencies and percentages. The Shapiro-Wilk test was used to examine for normality using p-value as a numerical. Likert (5-point) scales were used to measure participants' expectations and perceptions. Independent *t*-test for ordinal data and Chi-square test for categorical data were used to compare between groups. The level of significance was set a priori at p-value < 0.05. Chi-square test for association was used to determine the relationships between the level of agreements to all the expectation and perception statements and certain participant's characteristics.

3. Results

3.1. Participants' demographic characteristics

A total of 94 participants completed the questionnaire yielding a 47% response rate. As summarized in Table 1, the majority of respondents were female and had been in clinical practice for at least 4 years. Participants were mostly from Egypt (21.3%) and Sudan (11.7%). Out of a total 45 physicians, about 51% were residents, 22% were fellow and specialists and 26% were consultants. As illustrated in Fig. 1, over 90% of physicians frequently contact clinical pharmacists to consult on various aspects of pharmacotherapy. About 18% had more than 10 contacts per month and only 9% indicated to have never or rarely contacted clinical pharmacists.

3.2. Participants' expectations of the CPSs provided

As summarized in Table 2, for all the statements regarding participants' expectations about the role of clinical pharmacists in the provision of mental health services, the mean scores were above 4 for both, the nurses' and the physicians' groups, except for one statement. The lowest mean score (4.02) was for the statement *"Managing outpatient clinic for treating selected side effects with the right to prescribe under authorization from physicians"*, where 18% of participants did not agree with the statement. There were no significant differences in the mean scores between the two professional groups in regards to the expectations of the CPSs provided ($p > 0.05$).

3.3. Participants' perceptions towards the CPSs

As summarized in Table 3, both physicians and nurses reported positive perceptions regarding the CPS provided at the hospital (mean

Table 1
Participant demographic characteristics (N = 94).

Demographics		n	Percentage
Age group	*20-30*	*26*	*27.7*
	31-40	*39*	*41.5*
	41-50	*21*	*22.3*
	51-60	*6*	*6.4*
	> 60	*2*	*2.1*
Gender	*Female*	*50*	*53.2*
	Male	*44*	*46.8*
Years of practice	*3 or less*	*12*	*12.8*
	4-10	*45*	*47.9*
	11-20	*28*	*29.8*
	> 20	*9*	*9.6*
Education level	*Bachelor's degree or below*	*68*	*72.3*
	Master's degree	*9*	*9.6*
	Doctoral degree	*17*	*18.1*
Nationality	*Qatari*	*8*	*8.5*
	USA Or Europe	*5*	*5.3*
	Egyptian	*20*	*21.3*
	Sudanese	*11*	*11.7*
	Philippine	*13*	*13.8*
	Jordanian	*8*	*8.5*
	Others	*29*	*30.9*
County of graduation	*Qatar (or GCC)*	*9*	*9.6*
	USA & Europe	*5*	*5.3*
	Egypt	*23*	*24.5*
	Sudan	*13*	*13.8*
	Philippines	*12*	*12.8*
	Jordan	*9*	*9.6*
	Others	*23*	*24.5*
Profession	*Physician*	*45*	*47.9*
	Nurse	*49*	*52.1*

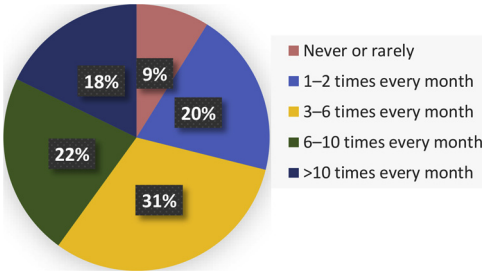

Fig. 1. Physician–clinical pharmacist contacts regarding clinical use of drugs as perceived by physicians.

scores for these statements ranked from 4.09 and 4.60). The difference between the two professional groups was only statistically significant (p = 0.02) for the statement: *"The clinical pharmacist can improve the quality of medical care in a hospital setting"*, where physician participants ranked their agreement higher than nurse participants (mean ± SD: 4.76 ± 0.45, 4.45 ± 0.55, respectively).

3.4. Association between the level of agreement to expectation/perception statements and participants' characteristics

There was a statistically significant positive association between participants' years of experience and agreeing to the statement: *"Clinical pharmacists as part of medical teams are essential for hospital accreditation"* ($\chi 2 = 13.11$, $\varphi = 0.41$, $p = 0.04$). There was also a statistically significant positive association between physicians' current position and agreeing with the statement: *"Assisting physicians in prescribing more cost-effective drugs by providing pharmacoeconomic information"* ($\chi 2 = 16.55$, $\varphi = 0.62$, $p = 0.04$).

4. Discussion

To the best of our knowledge, this survey is the first in Qatar to examine the expectations and perceptions of nurses and physicians in the provision of CPSs to psychiatric patients. The findings of this study showed that physicians and nurses have high expectations from clinical pharmacists, and value their participation in ward rounds and case discussions during MDT meetings, particularly in issues surrounding the management of treatment resistant conditions, medication counselling, as well as in monitoring for efficacy and safety of psychotropic medications. These results are in line with several other surveys on this topic conducted in the area of mental health services (Al-Aqeel et al., 2012; Bell et al., 2007; Tanskanen et al., 2000; Grady and Reichert, 2014).

Our results also suggest that physicians did not favor any prescribing roles for clinical pharmacists, as less than 20% of parcipants agreed that they should be involved in altering prescribed medication regimens, or that they should support physicians in prescribing at outpatient clinics for treating selected side effects, even if previously authorized or under a collaborative agreement. These findings confirm what several other investigators in non-psychiatric settings have reported, that physicians are generally receptive to a wide range of clinical pharmacy services, only if provided in a consultative or supporting role, rather than in an autonomous decision-making role (Smith

Table 2
Participants mean agreement scores with expectation statements about the role of clinical pharmacists in the MDT.

Expectation Statements	*Physicians (N = 43)* *Mean ± SD*	*Nurses (N = 42)* *Mean ± SD*	*All (N = 85)* *Mean ± SD*	*P-value**
Participating in physicians' ward rounds and case discussions to assist the physicians in designing drug-therapy plans for patients	4.60 ± 0.58	4.36 ± 0.58	4.48 ± 0.59	0.05
Participating in the treatment of patients with treatment-resistant conditions	4.49 ± 0.63	4.33 ± 0.72	4.41 ± 0.68	0.29
Participating in monitoring the rational use of psychotropics and making suggestions on treatment adjustment based on monitoring	4.30 ± 0.77	4.40 ± 0.63	4.35 ± 0.70	0.50
Participating in MDT rounds and implementing pharmaceutical care for hospitalized patients	4.60 ± 0.66	4.43 ± 0.59	4.52 ± 0.63	0.20
Detecting and reporting the hospitalized patients' ADRs	4.44 ± 0.67	4.36 ± 0.58	4.40 ± 0.62	0.53
Detecting and reporting the discharged patients' ADRs	4.36 ± 0.75	4.31 ± 0.56	4.32 ± 0.66	0.91
Helping patients improving their adherence to psychotropic regimens in both outpatient and discharged patients	4.28 ± 0.77	4.48 ± 0.55	4.38 ± 0.67	0.18
Providing evidence based drug information for the physicians when requested	4.56 ± 0.59	4.31 ± 0.64	4.44 ± 0.63	0.06
Assisting physicians in prescribing more cost-effective drugs by providing pharmacoeconomic information	4.47 ± 0.77	4.17 ± 0.73	4.32 ± 0.76	0.07
Managing outpatient clinic for Clozapine and Lithium and having the right to continue or revise the prescription under authorization from physicians	4.40 ± 0.76	4.40 ± 0.66	4.40 ± 0.71	0.95
Managing outpatient clinic for treating selected side effects with the right to prescribe under authorization from physicians	3.89 ± 0.98	4.17 ± 0.76	4.02 ± 0.89	0.14
Checking prescriptions to detect and prevent prescription errors	4.49 ± 0.67	4.40 ± 0.66	4.45 ± 0.66	0.57
Counseling patients regarding the safe and appropriate use of their medications in the outpatient clinic	4.37 ± 0.81	4.38 ± 0.62	4.38 ± 0.72	0.96
Counseling patients regarding the safe and appropriate use of their medications in the inpatient stay and up-on discharge	4.32 ± 0.78	4.45 ± 0.55	4.39 ± 0.67	0.39

Legend: MDT = Multidisciplinary team, *Independent *t*-test for testing differences, < 0.05.

Table 3
Participants' mean agreement scores with perception statements about CPS provided the psychiatry hospital.

Perceptions Statements	*Physicians (N = 40)* Mean ± SD	*Nurses (N = 40)* Mean ± SD	*All (N = 80)* Mean ± SD	*P-value**
Healthcare professionals' willingness to cooperate with the clinical pharmacist	4.35 ± 0.66	4.35 ± 0.58	4.35 ± 0.62	1.00
The clinical pharmacist is an important and integral part of the medical team	4.68 ± 0.62	4.5 ± 0.55	4.60 ± 0.59	0.26
The clinical pharmacist can improve the quality of medical care in a hospital setting	4.76 ± 0.45	4.45 ± 0.55	4.59 ± 0.52	0.02
Clinical pharmacists as part of medical teams is essential for hospital accreditation	4.58 ± 0.68	4.48 ± 0.55	4.53 ± 0.62	0.47
Clinical pharmacists as part of medical teams will minimize medication errors and improve patient therapeutic outcomes	4.55 ± 0.64	4.48 ± 0.55	4.51 ± 0.60	0.58
There is increasing interest in clinical pharmacy as a profession in Qatar	4.08 ± 0.76	4.10 ± 0.71	4.09 ± 0.73	0.88
Doctors and other healthcare staff will accept the involvement of clinical pharmacists in patient management	4.28 ± 0.64	4.38 ± 0.59	4.33 ± 0.61	0.47
Clinical pharmacy representation in different hospital committees is desirable	4.23 ± 0.86	4.23 ± 0.66	4.23 ± 0.76	1.00
The presence of the clinical pharmacist in a clinical ward team will improve the quality of patient care in a hospital	4.53 ± 0.64	4.40 ± 0.59	4.46 ± 0.62	0.37
The clinical pharmacist is able to minimize medication errors, maximize cost-effectiveness and improve patient outcomes	4.48 ± 0.60	4.38 ± 0.54	4.43 ± 0.57	0.44

Legend: CPS = Clinical pharmacy services; *Independent *t*-test for testing differences, < 0.05.

et al., 2002; Stewart et al., 2009). Although a similar study in Saudi Arabia indicated physicians were receptive of clinical pharmacists' direct patient care roles in mental health (Al-Aqeel et al., 2012), and cited an improvement in the expectations in the part of physicians for CPSs when compared to results in earlier studies (Matowe et al., 2006; Tahaineh et al., 2009), the authors did not specifically explore prescribing roles for pharmacists. As such, our results suggest that within the Middle East, and more specifically in mental health settings, the more traditional roles for clinical pharmacists continue to be favored by physicians. These results are also indicative that adopting innovative CPSs, such as pharmacist-led medication management clinics, remains a challenge in the Middle East, and will demand significant efforts in educating physicians on the added value that more advanced roles for pharmacists can provide to patient care.

Interestingly, physicians were more likely than nurses to perceive that clinical pharmacists can improve the quality of medical care in a hospital setting. It is possible that this may be related to lack of awareness in the part of nurses about pharmacists' training and scope of practice, which may negatively influence their views in regards to the contributions of pharmacists to the overall quality of patient care. Another possible explanation is that clinical pharmacists and physicians tend to interact more regularly in matters of patient medication management, and consequently physicians may place more value to this aspect of patient care than nurses. The strong correlation that was found in this study between the participants' years of experience in mental health practice, as well as the higher level of physicians' education, with positive perceptions about CPSs, may also support this particular difference in opinion between nurses and physicians. It has been reported that health care staff who favorably evaluate other health care sector services, are more likely to maintain good working relationships with those providers, and hence, through good communication provide better care to patients (Lustig et al., 2005).

The study had some limitations that are worth considering when interpreting the results. Although the response rate was not optimal (47%), the participants were almost equally distributed in terms of professionals and gender. We also tried to increase the response rate by expanding the period of the survey. Half of the physician responders were psychiatric residents, who may be more familiar with the role of clinical pharmacists. This may have introduced social response bias which we attempted to reduce by assuring annonimity of the survey and that participation would not affect their current role or work relationships. Also, as the response to this study was voluntary, it is possible that only nurses and physicians who were interested in pharmacists' services participated in the survey. As in any self-completed survey, the results depend on the respondents' interpretation of the questions, we tried to decrease this limitation by pilot testing the survey tool by three healthcare providers working at the psychiatric hospital and editing the questions considering their feedback.

5. Conclusion

The findings of this study showed that physicians and nurses have mostly positive perceptions and expectations from clinical pharmacists at the psychiatric hospital. Traditional clinical pharmacy activities were more favorably viewed than those related to advanced practice roles including prescribing and pharmacist-led medication management clinics. These findings highlight the need for further research to explore in more detail which factors are influencing these opinions. Action research and results of feasibility studies of pharmacist-led clinics, may also support interprofessional roles in mental health practice.

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