



Original article

Clinical pharmacy in Kuwait: Services provided, perceptions and barriers

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ABSTRACT

Introduction: Pharmacy practice has considerably evolved from a dispensing role to a patient-centered profession. Kuwait has minimal clinical pharmacy services established in its healthcare settings.

Objectives: The objectives of this study were to document existing clinical pharmacy services in public hospitals, identify barriers to their implementation and assess perceptions regarding pharmacists providing clinical services.

Material & Method: A cross sectional study using self-administered questionnaires among a total of 166 pharmacists and 284 physicians across 6 public hospitals in Kuwait was conducted.

Results: Over half of pharmacists (54%) provided clinical services, with the most common service being education and drug information (86%). Forty percent (40%) of the pharmacists reported that clinical services offered were of their own initiative but most of them (71%) were not sure whether they would offer additional services in the future. The majority of physicians were receptive to an expanded patient-centered role of the pharmacist (97%), believed pharmacists add to patient clinical care (92%) and considered pharmacists members of the healthcare team (96%). Major barriers reported by pharmacists to implement clinical pharmacy services included lack of policy (49%), time (36%) and clinical skills (28%), which is similar to barriers reported by physicians.

Conclusion: Although clinical pharmacy is in its infancy in Kuwait, it is well perceived and requested by physicians. Major barriers must be addressed and in this context, having a national framework for pharmacy practice from Ministry of Health, supported by cutting edge education and a pro-active professional association would be key assets to evolve the practice in Kuwait.

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1. Introduction

Clinical pharmacy introduces a great change from what was once a drug-oriented profession to a patient-centered pharmaceutical care approach. It involves the responsible provision of drug therapy to achieve optimal outcomes that improve the patients' quality of life (Hepler and Strand, 1990). The aim of clinical pharmacy in practice is to deliver a systematic, comprehensive and consistent quality of service to each individual patient. Clinical

pharmacists are trained to provide medication therapy management (MTM) and adapt medicines to address individual patient's needs during their hospital stay (Odedina et al., 1997) and at every point of transition in care, including the community setting (ASHP, 2013). Pharmacists face challenges when implementing MTM, such as lack of adequate pharmaceutical care training, therapeutic knowledge and lack of appropriate areas for counselling (Aburuz et al., 2012; Al-Arifi et al., 2007; Al-Taweel et al., 2014; Awad et al., 2006; Dunlop and Shaw, 2002; Ngorsuraches and Li, 2006). Identifying those factors is critical to facilitate the implementation of an expanded scope of pharmacy practice.

Kuwait is a small country (4.2 million population) of the Arabian Peninsula where 97% of the population live in developed urban areas. The public healthcare system is divided into primary, secondary and tertiary care. Primary care is delivered through general and specialized polyclinics, spread throughout five healthcare regions. Secondary care is provided through six general hospitals, and tertiary care is provided through more than fifteen specialized centers distributed throughout all the healthcare regions

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(MOH, 2013). Kuwait has one Faculty of pharmacy, established in 1997, providing a 5-year baccalaureate degree and a 2-year add-on PharmD program. Approximately 30–40 students graduate annually since 2002. Clinical pharmacy represents a significant part of the curriculum, with a focus on MTM in different disease states. Despite that, clinical pharmacy activities are limited in practice, and only based on individual initiatives from motivated pharmacists with suboptimal support from the hospital administrations and Ministry of Health (MoH). This is consistent with a review published on pharmacy education in 13 Middle East countries (Kheir et al., 2008), which showed that pharmacy practice falling behind the improvements in pharmacy education in this region of the world.

Pharmacists in Kuwait, in contrast to North America (Tannenbaum and Tsuyuki, 2013), are not automatically included in the multidisciplinary patient circle of care. The extent of their involvement in patient care depends largely on improving the partnership with other healthcare professionals, including physicians and nurses, and with that, the ability to target individual patients who might best benefit from extended pharmaceutical services. The current situation in Kuwait, particularly for chronic disease management, represents a significant opportunity for improvement. It is difficult to determine how far clinical pharmacy has been implemented in Kuwait due to lack of research. Thus, the study objective is to document current clinical pharmacy services and existing barriers to implement such services in public hospitals, and to assess perceptions of healthcare professional towards the patient-centered pharmacist roles.

2. Methods

2.1. Questionnaire to pharmacists: Clinical pharmacy services available in Kuwait

2.1.1. Study design

A descriptive, cross-sectional study was carried out from January to May 2017 among pharmacists in government hospitals across Kuwait. All pharmacists working in these hospitals were eligible. Ethical approval was obtained from the Standing Committee for Coordination of Health and Medical Research, MoH.

2.1.2. Study tool

The study tool was a self-administered questionnaire to pharmacists consisting of 40 questions structured in 3 different sections assessing the clinical pharmacy services, as defined by American College of Clinical Pharmacy (ACCP) (ACCP, 2014), currently offered (8 questions), the characterization of those services (21 questions) and demographics (11 questions), and was distributed in English aligned with Arabic translation. This questionnaire was developed by the study investigators with the objective of documenting the current status of available clinical pharmacy services and major barriers to their further implementation. The intent was to create a tailor-made questionnaire to identify key information that would enable key stakeholders (e.g.: Faculty of Pharmacy, Ministry of Health, hospital heads/pharmacy heads) to refine their approach towards further developing pharmacy practice in Kuwait.

To test the content and face validity of the questionnaire and the feasibility of data collection methods, a pilot study was conducted among 17 pharmacists and after agreeing to participate, they were asked to answer an on-line survey in English. Results indicated that the online format was not easy to handle, some questions were unclear or redundant and some pharmacists suggested to have the survey available in Arabic. The questionnaire was then simplified, changed to a paper-based questionnaire and

translated to Arabic. This modified questionnaire was piloted with 6 additional pharmacists and minor adjustments were made based on the feedback. Due to the nature of those changes, the questionnaire was resubmitted to the Ethics Committee and received approval from the above-mentioned committee. Pilot study data were excluded from the study results.

2.1.3. Sample recruitment, data collection procedures and data analysis

Pharmacists working in a governmental hospital in Kuwait were invited to participate. The questionnaires were distributed to all available pharmacists at the time of the study by the Pharmacy Directors of each hospitals, assisted by a pharmacy student. This represented a total of 246 available pharmacists at the time of study conduct. Consequently, questionnaires were distributed to 246 pharmacists. Only those who agreed to take part in the study by signing the informed consent were included. Pharmacy students distributed the questionnaires and followed-up on weekly during the data collection period. Data analysis was done using the Statistical Package for Social Sciences, (IBM SPSS Statistics 23, IBM Corporation, Armonk, NY, USA 2014). Descriptive statistics were used to calculate the mean, median, standard deviation and percentage of the results. Categorical variables were summarized as frequencies (%). Cross tabulation with chi-square test was used to identify any significant difference among pharmacists' responses. P value of <0.05 was considered as significant.

2.2. Questionnaire to physician: Perception of the expanded pharmacist scope of practice

2.2.1. Study design

A descriptive, cross-sectional study was carried out from January to May 2017 among physicians working in secondary and tertiary care government hospitals across Kuwait. All physicians working in these hospitals were considered eligible. Ethical approval was obtained from the Standing Committee for Coordination of Health and Medical Research, MoH and the Health Sciences Center (HSC) Ethics Committee for Student Research.

2.2.2. Study tool

The study tool was a self-administered questionnaire adapted from a previously published study (Cruthirds et al., 2013) consisting of 18 questions structured in 4 different sections assessing the physicians source of medication information (2 questions), the frequency of interactions with pharmacists and acceptance of their recommendations (3 questions), physician perception of pharmacists (8 questions) and demographics (5 questions), and was distributed in English. A pilot study was conducted with 10 physicians across 2 hospitals to test the content and face validity of the questionnaire. Minor formatting changes were made to improve clarity of some questions without changing their essence. Pilot study data were excluded from the study results.

2.2.3. Sample recruitment, data collection procedures and data analysis

Only physicians who agreed to take part in the study by signing the informed consent were included. Pharmacy students distributed the questionnaires and followed-up on weekly during the data collection period. The sample size was calculated using Raosoft Sample Size Calculator (Raosoft, 2004). A total of 3477 physicians work in the government hospitals in Kuwait; assuming a margin of error of 5% and a confidence interval of 90%, a sample of 252 physicians was required. To achieve this goal and assuming a response rate of 50%, a larger sample size of approximately 460 physicians will be approached. Descriptive statistics were used to calculate the mean, median, standard deviation and percentage

of the results. The categorical variables were summarized as frequencies (%). Responses to the open-ended questions were then grouped in relevant issues and presented based on the frequencies of reporting.

3. Results

3.1. Questionnaire to pharmacists: Clinical pharmacy services available in Kuwait

Out of the 246 questionnaires distributed, a total of 166 pharmacists agreed to participate giving a response rate of 67.5%. About 57% were females and 55% were Kuwaitis. A large proportion (n = 119, 72%) of participants were <40 years, holding a bachelor degree in pharmacy (n = 147, 89%) obtained outside Kuwait (n = 108, 65%) and had 7 years of practice experience (Table 1). Of the 166 respondents, 46% responded having offered clinical pharmacy services. Significantly more females compared to males (55% vs 35%; p = 0.013) are likely to offer clinical services. Those with a graduate pharmacy degree are more likely to have offered clinical pharmacy services compared to those with a bachelors' degrees (68% vs 44%; p = 0.041) and Kuwait University graduates were more likely to initiate clinical services than graduates from other countries (59% vs. 40%; p = 0.021).

Of the 77 pharmacists who offered clinical pharmacy services (Table 2), most offered healthcare education and drug information provision (86%). About half reported being members in hospital committees (52%), participating in guidelines/protocols (52%), being involved in medication safety projects (51%), actively participating in multidisciplinary patient care rounds (49%) and develop-

ing/initiating pharmaceutical care plans (49%). About a third (38%) conducted patient interviews to collect and document a complete medication history. The most frequently reported barrier was the lack of formal policy from the MoH (n = 81; 49%), followed by lack of time (n = 59; 36%), clinical skills (n = 46; 28%), access to patient files (n = 41; 25%) and awareness by other healthcare professional of the clinical pharmacy services offering/possibilities (n = 34; 21%).

Clinical services were modestly offered since 1989, with a surge starting in 2015 (Table 3). Most clinical pharmacy services were offered in the medicine (53%), surgery (37%) and pediatrics (34%) departments. A similar proportion of pharmacists offered services of their own initiative (40%) or done upon request of their superior (39%). Only a small proportion (10%) dedicated 75% of their time or more for clinical pharmacy services, with one quarter (26%) spending <5% of their time. Over two third of pharmacists have access to patient data either to the patient medical files (66%) and/or to laboratory values (62%). The pharmacist's recommendations are most often communicated verbally to the physician (66%) or documented elsewhere, eg: pharmacist notes outside the patient file (27%). Only a few pharmacists (19%) document their recommendations directly in the patient file. Few pharmacists expected to expand their current services (21%) or offer new services (30%) in the next 12 months, with most reporting not being sure (71% and 61%, respectively).

Perceived reactions by pharmacists from healthcare professionals (HCPs) towards pharmacist-led clinical services are summarized in Table 3. Pharmacists believed that their services are often/always well perceived by physicians (44%) and nurses (60%), their therapeutic recommendations are often/always accepted by physicians (39%) and their services are rarely/never requested by physicians (27%) and nurses (22%).

Table 1

Demographics and job background characteristics of the pharmacists' sample (N = 166) and a comparison between those reporting providing one or more clinical services (n = 77) with those reporting not providing any clinical service (n = 89).

Variables	Total (n = 166)	Provided clinical service (n = 77; 46%)	Did not provide clinical Service (n = 89; 54%)
Age n (%)			
21–29	64	30 (47%)	34 (53%)
30–39	55	26 (47%)	29 (53%)
40–49	25	11 (44%)	14 (56%)
50+	22	10 (45%)	12 (55%)
Gender, n (%) [*]			
Male	71	25 (35%)	46 (65%)
Female	95	52 (55%)	43 (45%)
Nationality, n (%)			
Kuwaiti	92	43 (47%)	49 (53%)
Non-Kuwaiti	74	34 (46%)	40 (54%)
Pharmacy education, n (%) [*]			
Bachelor's degree	147	64 (44%)	83 (56%)
Other degrees (MPharm, MSc, PharmD)	19	13 (68%)	6 (32%)
Country of first pharmacy degree, n (%) [*]			
Kuwait	58	34 (59%)	24 (41%)
Other countries	108	43 (40%)	65 (60%)
Years of practicing pharmacy, mean ± SD	11.1 ± 9.8	11.3 ± 9.9	10.9 ± 9.9
Hospital, n (%)			
Al-Amiri	23	8 (35%)	15 (65%)
Mubarak Al-Kabeer	39	19 (49%)	20 (51%)
Al-Farwanniya	22	9 (41%)	13 (59%)
Al-Adan	25	13 (52%)	12 (48%)
Al-Jahra	25	15 (60%)	10 (40%)
Al-Sabah	32	13 (41%)	19 (59%)

^{*} Groups are statistically different by Chi square test.

3.2. Questionnaire to physician: perception of the expanded pharmacist scope of practice

Of 460 questionnaires distributed, 284 were collected, giving a 62% response rate. The study population consisted of 67% (n = 188) males with a median age of 36 years. When asked about their primary source for medication information, about one fifth (n = 66; 23%) indicated the pharmacist, either alone or in combination with other sources. Similarly, about one fifth (n = 59; 21%) consider pharmacists as an appropriate resource to stay current on medication information.

Most physicians (83%) indicated that they contact the pharmacist less than once a week or between 1 and 3 days per week regarding patient's medication (Table 4). Many (59%) must intervene on patient's medication every day or between 4 and 6 days per week, with a large proportion (66%) spending <30 min on patient counselling in relation to their medications despite the fact that nearly all (98%; Fig. 1) report placing emphasis on drug therapy to improve patient care and quality of life. Most physicians (n = 223; 79%) always/frequently follow the recommendation of pharmacists for drug selection and nearly all (n = 271; 96%) always/frequently follow the drug dosing schedules proposed by pharmacists. Physicians were asked a series of questions to assess their perception regarding the role of the pharmacist and nearly all (between 93% and 98%) responded overwhelmingly in favor of an expanded role of pharmacists, with slightly less physicians (86%) responding positively to the perceived impact of the pharmacist on medication adherence (Fig. 1).

Perceived barriers to the expansion of the scope of pharmacy practice include inadequate number of clinical pharmacists (n = 27), inadequate clinical education/training (n = 24), lack of clarity of job description and authority for pharmacists (n = 14), difficult communication between pharmacists and physicians (n = 13), lack

Table 2

A comparison between those reporting providing one or more clinical services with those reporting not providing any clinical service (n = 77).

Type of service	Provided in the past	%	Currently providing	%	Either past or present	%
Provide healthcare education and drug information	26	34%	40	52%	66	86%
Active member in hospital committees (e.g., Pharmacy and Therapeutics, antimicrobial stewardship, etc.)	14	18%	26	34%	40	52%
Participate in guidelines or protocols development	16	21%	24	31%	40	52%
Involved in medication safety projects	14	18%	25	32%	39	51%
Actively participate in multidisciplinary patient care rounds	21	27%	17	22%	38	49%
Develop and initiate a pharmaceutical care plan	18	23%	20	26%	38	49%
Conduct interview to collect and document a complete medication history	19	25%	10	13%	29	38%

Table 3

Variables characterizing clinical services and reactions to those services, as perceived by the respondents (n = 77).

Variable	Statistics*
Year of initiating clinical service(s)	
Range	1989–2017
Median	2015
Mode	2016
Was the clinical service your initiative or requested by your superior? n (%)	
Respondent pharmacist's decision	31 (40%)
Superior's decision	30 (39%)
Decision from both	11 (14%)
Other**	3 (4%)
Time dedicated to clinical pharmacy service(s), n (%)	
75–100%	8 (10%)
50–75%	9 (12%)
25–50%	12 (16%)
5–25%	27 (35%)
less than 5%	20 (26%)
Do you expect current clinical services to expand over the next 12 months? n (%)	
Yes	16 (21%)
No	6 (8%)
Not sure	55 (71%)
Do you expect offering additional clinical services over the next 12 months? n (%)	
Yes	23 (30%)
No	7 (9%)
Not sure	47 (61%)
Perceived physician reactions	
Clinical services well perceived by physician, n (%)	
Never or rarely	2 (3%)
Sometimes	39 (51%)
Often or always	34 (44%)
Clinical services specifically requested by physicians, n (%)	
Never or rarely	21 (27%)
Sometimes	33 (43%)
Often or always	22 (29%)
Pharmacist's recommendations accepted by prescriber, n (%)	
Never or rarely	1 (1%)
Sometimes	45 (58%)
Often or always	30 (39%)
Perceived nurse reactions	
Clinical services well perceived by nurses, n (%)	
Never or rarely	5 (6%)
Sometimes	17 (22%)
Often or always	46 (60%)
Not applicable	8 (10%)
Clinical services specifically requested by nurse, n (%)	
Never or rarely	17 (22%)
Sometimes	24 (31%)
Often or always	26 (34%)
Not applicable	8 (10%)

* Sum of counts < 77 are due to missing values.

** Other: Hospital accreditation requirement and request came from medical doctors.

of support by hospital administration (n = 9) and lack of awareness of the clinical pharmacy services (n = 6). Interestingly, 11 physicians indicated that there were no barriers to expand the scope of pharmacy practice in government hospitals in Kuwait.

4. Discussion

Overall, our findings deepen our understanding of the current clinical pharmacy practice landscape in Kuwait and show that hospital pharmacists in Kuwait offer a wide array of clinical services, but these services are not offered consistently across public hospitals due to barriers, namely lack of official policies on pharmacy practice. Consequently, only a small amount of the pharmacist's time is dedicated to providing those services and many report significant uncertainty on future services, despite the fact that clinical services are well perceived and requested by physicians and other healthcare professionals. In fact, physicians consider pharmacists as integral members of the healthcare team and recognize that they provide incremental value and improve quality in patient clinical care.

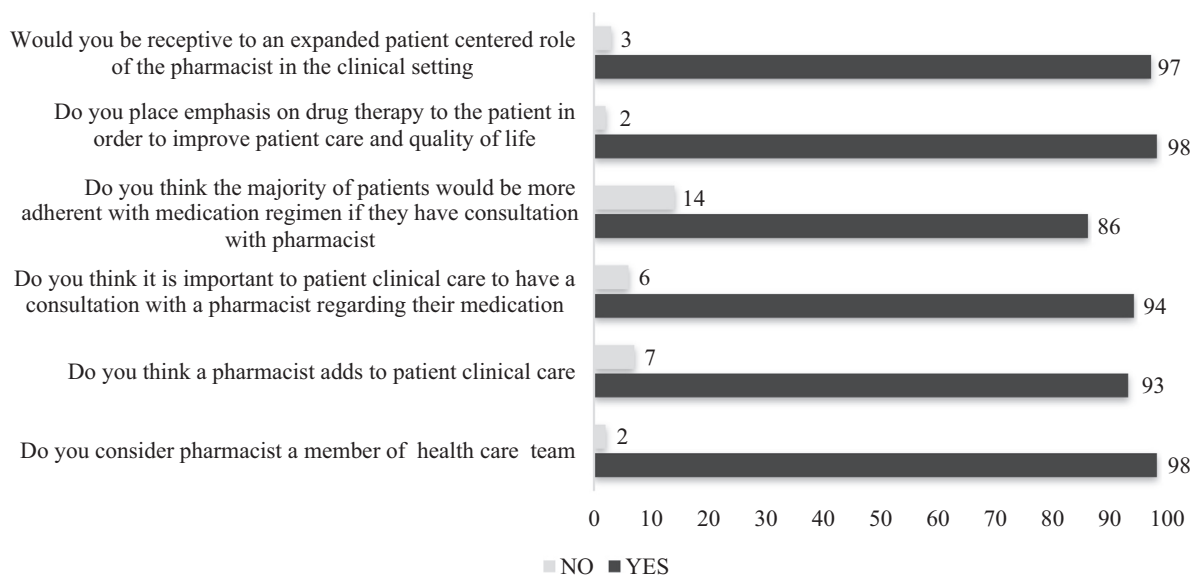
Compared to a decade ago, direct-patient care still remains significantly underdeveloped (Matowe et al., 2003). Hospital pharmacists in Kuwait have positive attitudes and feel prepared to implement pharmaceutical care, and yet, they seldom provide direct patient care and are perceived as solely drug dispensers (Al Haqan et al., 2017; Katoue et al., 2014). Although participants in our study reported starting offering services as early as 1989, there were only very few and isolated initiatives until 2010. Clinical pharmacy services started being offered after a critical mass graduates from the Kuwait's Faculty of pharmacy integrated the hospitals workforce, intensified with the return of scholars having postgraduate degrees in clinical pharmacy and were further enhanced by the Kuwait Clinical Pharmacy Network (KCPN). Sending pharmacists abroad to train in clinical pharmacy was fostered by MoH and this is aligned with the International Pharmaceutical Federation (FIP) Pharmacy Workforce Development Goals (FIP, 2017) to advance practice and enhance the quality of patient care and health system deliverables. Although the MoH had a vision of future pharmacy practice, current regulations must be expanded to be aligned with up-to-date clinical pharmacy practices.

Physicians have positive perceptions of the value and impact of pharmacists on patient care and they are very supportive of an expanded scope of practice but pharmacists still do not routinely provide direct patient care. Physicians consider MTM important for quality patient care, yet they devote very little time to it. Thus, there is an unmet need for pharmacotherapy management, which could be met by pharmacists if they were supported by a MoH policy. Previous reports show that physicians were comfortable with pharmacists providing services such as detecting drug errors, providing patient education, however they were significantly less

Table 4

Time spent by physicians managing patient's medications (n = 284).

How many days per week do you contact a pharmacist regarding patient's medication, n (%)	Every day 31 (11%)	4–6 days/week 17 (6%)	1–3 days/week 55 (19%)	<once a week 181 (64%)
How many days per week do you ask (or are you asked) to intervene on patient's medication ^a , n (%)	Every day 120 (43%)	4–6 days/week 46 (16%)	1–3 days/week 41 (15%)	<once a week 73 (26%)
How much time per day do you spend on patient counselling in relation to their medications ^a , n (%)	< 30 min 185 (66%)	1–2 h 77 (27%)	2–3 h 13 (5%)	> 3 h 7 (2%)

^a Sum of counts < 284 are due to missing values.**Fig. 1.** Physicians perceptions of pharmacists (n = 284); data presented as percentages.

comfortable with pharmacists initiating or modifying patient treatments (Katoue and Al-Taweel, 2016; Matowe et al., 2006). This may be associated with the fact that some physicians were trained in North America and were exposed to advanced pharmacy practice, which increased their comfort and confidence (Baillie and Romeo, 1996; Lobas et al., 1991; Spencer and Edwards, 1992). In fact, Canadian-trained physicians coming to work in Kuwait are requesting clinical pharmacists to collaborate with them for patient care and treatment decisions. In addition, physicians' positive attitudes towards an expanded scope of pharmacy practice may also be associated with the increasing body of literature documenting the value of clinical pharmacy on improving patient care and outcomes.

Interestingly, pharmacists believe that their clinical services are suboptimally perceived by physicians, but in contrast, physicians report very positive perceptions about pharmacists and their clinical services. This discrepancy may be explained by the lack of confidence and fear of new responsibilities among some pharmacists and this may adversely affect their perception. Some previously identified barriers for expanding pharmacy practice may represent the tip of the iceberg and shadow the more important underlying issue of a pharmacy culture being resistance to change (Rosenthal et al., 2010).

Previously reported barriers to expanding the scope of pharmacy practice in Kuwait include lack of appreciation for pharmacy services by physicians, policy-makers and patients, lack of staff, clinical training, etc. (Al-Taweel et al., 2014; Al Haqan et al., 2017; Katoue and Al-Taweel, 2016; Katoue et al., 2014; Matowe et al., 2003). In the current study, the major barrier for clinical

pharmacy is the lack of a formal policy to that effect and hence, the lack of clinical pharmacists in the hospitals. Clinical pharmacy services are developing in Kuwait, but not in a concerted and systematic approach with MoH. Many pharmacists reported that providing clinical services was their own initiative, rather than part of their MoH-mandated professional responsibilities, and most reported significant uncertainty regarding the future of clinical pharmacy services despite a willingness to offer more. Most existing initiatives are not sustained due to lack of support and resources from MoH. Thus, having a formal directive from MoH providing the necessary framework to implement the requested services is critical. A reinforced national health strategy, including clinical pharmacy policies, plans and quality metrics and standards is called for (Kheir and Fahey, 2011).

Pharmacy practice should also be framed by a professional association in charge of developing and reinforcing standards of pharmacy practice and a Code of Ethics. To date, there are no official standards of pharmacy practice in Kuwait and the Code of Ethics was recently revisited to be aligned with international standards and is awaiting endorsement from MoH. In this context, there is a great opportunity for the Kuwait Pharmaceutical Association (KuPhA) to take a leadership role in developing the standards of practice in partnership with the MoH and the Faculty of pharmacy. Recently, the Taskforce for Advancing Pharmacy Practice (TAPP), composed of MoH officials, hospital heads of pharmacy departments, Faculty of pharmacy, KuPhA and continuing medical education (CME) professionals, was created in Kuwait with the objective of setting the stage and launching key initiatives to help implement clinical pharmacy in Kuwait in a concerted manner.

Previous and current data underline the importance of improving the quality of education to locally-trained clinical pharmacists, sending pharmacists abroad for additional training and providing up-to-date continuous medical education opportunities to practicing pharmacists. Supporting our findings, data show that those having a graduate pharmacy education degree are more likely to offer clinical pharmacy services. (Kheir et al., 2008) The Faculty of pharmacy recently expanded its curriculum to include a two-year PharmD program with significant focus on direct-patient care and advanced MTM skills to support the implementation of clinical pharmacy. In-line with the MoH quality indicators program, the PharmD is built on the development of competencies required to offer professional services expected from pharmacists in Kuwait. This is a significant change from what was previously reported (Kheir et al., 2008; Matowe et al., 2003), and could be a catalyst to further continue the development of clinical pharmacy in the country.

Previous studies documented attitudes, perceptions and level of comfort of hospital pharmacists in managing specific aspects of selected disease states (e.g.: diabetes), tasks (e.g. total parenteral nutrition) or services (e.g.: pharmaceutical care), all of which are relevant and critical in Kuwait. The current study builds on those reports by adopting a broader approach and assessing the extent of every ACCP-defined clinical pharmacy service regardless of disease state, and evaluating physician overall perception of the pharmacist clinical role. Collectively, this body of data supports an expanded scope of pharmacy practice and identifies important barriers to further implement clinical pharmacy services in governmental hospitals.

The main limitation of this study is that the data comes from pharmacists and physicians working in the governmental hospital setting and may not represent the situation in the private hospital setting, community pharmacies or governmental polyclinics. Although it is our understanding that the majority of clinical pharmacy services are offered in government hospitals, those other settings should be investigated to have a complete picture of the current state of pharmacy practice in Kuwait. In addition, it was not possible to reach every pharmacist working in government hospitals therefore it is possible that some clinical pharmacy services were not documented. Nevertheless, data from this study were generated by 450 healthcare professionals across every governmental hospital; this provided a solid foundation which will be measured again in the future to determine if the scope of pharmacy practice has evolved.

5. Conclusion

In Kuwait, there is a gradual mobilization of pharmacists to offer direct patient care but the expansion of the pharmacist's role requires improved partnership with physicians, adequate leadership and resources, updated legislations from MoH enforcing clinical pharmacists in the circle of care, guided by formal standards of practice. There is a positive momentum and a demand for additional skilled clinical pharmacists and, it is important that three key players, MoH, KuPhA and Faculty of pharmacy, work together to ensure the successful implementation of clinical pharmacy in Kuwait.

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Conflict of interest

The authors have no conflicts of interest that are related to the content of this study.

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