Pharmaceutical Care Services in Hospitals of Kuwait

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ABSTRACT: Purpose: To describe the current pharmacy practice in the general public hospitals based on self-reported practice by pharmacists, explore the awareness of the pharmacists of pharmaceutical care concept, identify their willingness to implement pharmaceutical care practice, and identify the barriers that may limit its implementation. **Methods**: Eighty hospital pharmacists working in four general public hospitals were approached to be included in the study. Data were colleted via face-to-face structured interview of the respondents using a pre-tested questionnaire. **Results**: The response rate was 76.3%. Thirty five (57.4%) of the respondents had frequently performed interventions on prescriptions through interaction with physicians. Thirty two (52.5%) had frequently provided patient counselling. The knowledge of the respondents about the counseling points for salbutamol inhaler was assessed using a total score of 10, 35 (57.4%) scored ≤ 5. The frequent provision of counseling was non-significantly least common among the $>$ 40 years group compared to youngest age group (OR: 0.7, 0.3-1.9), male gender (0.6, 0.2-1.4) and those with a practice experience of $>$ 20 years (0.4, 0.1-1.2). Forty six (75.4%) of the respondents reported that they were aware of pharmaceutical care concept. Thirty five (76.1%) and 39.1% of those who reported awareness of pharmaceutical care concept indicated that its main focus is the patient and the appropriate objectives of the concept, respectively. The awareness about the patient as the main focus of pharmaceutical care was non-significantly least among the respondents aged 41-60 years (OR: 0.6, 0.2-2.4) and those with a practice experience of 21-40 years (0.3, 0.1-1.0). The main barriers perceived by the participants were lack of time (78%) and lack of staff (71.2%). **Conclusions:** The current practice of hospital pharmacists in Kuwait needs further improvement in relation to interaction with physicians and patient counselling. The lack of uniformity in the responses regarding the focus and objectives of pharmaceutical care indicates a lack of appropriate understanding in this matter. All respondents have shown high willingness towards the implementation of pharmaceutical care services in their practice.

INTRODUCTION

Pharmacy has witnessed a gradual significant change over the past years worldwide. The traditional role of the pharmacist that involving the preparation, dispensing and selling medications is no longer adequate for the pharmacy profession to survive. The philosophy of pharmaceutical care has been accepted worldwide as the primary mission of pharmacy; pharmaceutical care mandates that practitioners not only dispense medications, but also assume responsibility for improving the quality of patients' outcomes [1].

In our review of the literature on the evaluation of pharmaceutical care services, we identified numerous articles noting the significant positive impact that pharmaceutical care services have on health care management and health care costs in the long-term. These studies were conducted in developed countries and established the clinical, economic and humanistic viability of pharmaceutical care [2-7]. However, there is a lack of information in relation the implementation of pharmaceutical care services in developing countries and its value. Barriers that impede the implementation of pharmaceutical care in a variety of settings were found to include attitudes of pharmacists, lack of pharmacists' advanced practice skills, resource-related constraints, system-related constraints, and educational obstacles [6].

Studies carried out in several developing countries have shown that prescribing and dispensing practices were frequently irrational and illogical with many inappropriate prescribing practices.

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These included drugs given when no indication existed, wrong doses, drug-drug interactions and polypharmacy. Moreover, short dispensing and consultation times and inappropriate self-medication were also reported [8-13].

Pharmaceutical care practice is intended to meet a need in the health care system that has arisen due to the increase in complexity of drug therapy and the significant level of drug-related morbidity and mortality associated with drug use [14]. Therefore, the introduction of pharmaceutical care is required in developing countries to aid in the resolution of medication-related problems. The existence of variations in pharmaceutical care models and practices among countries were reported [15]. The international Pharmaceutical Federation adopted the guidelines for the achievement of good pharmacy practice in developing countries, which was approved by the World Health Organization [16-18].

In Kuwait, how far we are from pharmaceutical care practice and where we have to go are difficult questions to be answered, due to the lack of research findings describing or assessing the actual situation of the current pharmacy practice. In this study, we describe current pharmacy practice in the general public hospitals of Kuwait based on self-reported practice by pharmacists, explore the awareness of the pharmacists of the concept of pharmaceutical care, identify their willingness to implement pharmaceutical care practice and explore the barriers that may limit its implementation.

METHODS

This work was conducted after an approval and permission from the Ministry of Health – Kuwait. Authors have no conflicts of interest with regard to the data produced. The data collection, data analysis and manuscript writing were undertaken in Faculty of pharmacy, Kuwait University.

A cross-sectional survey of hospital pharmacist was conducted in the general public hospitals of Kuwait. Kuwait is in the Middle East with an area of 17,820 km² and an estimated population of 2.25 million people. The health system is based on three levels of healthcare delivery. Primary healthcare is delivered through approximately 80 primary health centres. Secondary

healthcare services are provided by six general public hospitals. Tertiary healthcare is provided through at least 21 specialized healthcare facilities.

Four hospitals were selected randomly out of the total six general public hospitals to be included in the study. All licensed pharmacists (80) currently workings in the inpatient, outpatient and casualty pharmacies of these hospitals were included in the study. Fourteen (17.5%) pharmacists refused to participate in the study and 5 (6.2%) pharmacists were on vacation. Therefore, those who participated in the study comprised 61 (76.3%) pharmacists.

The questionnaire contained both open-ended and close-ended questions. The questionnaire was pre-tested for content and design on 15 hospital pharmacists who were working in a general public hospital that was not included in the study sample. Slight modifications were done so that the questionnaire was simple to answer and yet gave meaningful data. The final version of the developed and pre-tested questionnaire was composed of the following three main parts: part (A) to provide information with regard to the demographic and other characteristics of the respondents; part (B) to describe current pharmacy practice at the hospitals; key sample questions in this part included: (i) how often do you check the appropriateness of prescription for drug indication, dose, duration of therapy and drug interactions? (always, sometimes, never); (ii) which of the following interventions do you routinely perform through interacting with physicians? (dose adjustment, change dosage form [e.g., solid to liquid], inappropriate drug for the condition that needs change to a different drug, others [specify], none); (iii) how often do you counsel all patients coming to this pharmacy? (always, sometimes, never); (iv) if always or sometimes, where do you counsel them? (special counselling area, pharmacy counter (or window, others [specify]; (v) please list the instructions that you would provide to a patient regarding the appropriate technique of using salbutamol metered-dose inhaler (MDI)? The ten instructions that were assessed were : removal of the mouth-piece dust cap; shaking of the MDI, the MDI must be held upright; the patient should breathe out gently but not fully; the tongue should be on the mouth floor and the MDI between the lips then closed round the mouthpiece; the canister should be actuated while

the patient continues to breathe in; the breathe should be held for at least 10 seconds; exhalation should be through the nose; at least 1 minute should elapse before repeating a second dose. (vi) for which of the following do the physicians contact you routinely regarding information? (dosage form, dose, strength, dosage interval, duration of use, drug interaction, adverse drug reactions, contraindications, others [specify]). Part (C), was composed of two sections, the first was designed to explore the awareness of pharmacists about pharmaceutical care, its main focus and objectives; key sample questions of this part included: (i) have you heard about the pharmaceutical care concept? (yes, no); (ii) which of the following is the focus of pharmaceutical care? (prescription or OTC request, physician or other health professionals, patient, others [specify]); (iii) which of the following do you think is/are the objectives of pharmaceutical care? Please choose one or more if applicable (to prevent medication errors, to improve patient outcomes and lifestyle, to perform a care plan or schedule of medication for the patient, others [specify]). The second section was designed to describe the level of implementation of pharmaceutical care, the willingness to the change, and the obstacles that may delay the implementation of pharmaceutical care services in the current practice; key sample questions of this section included: (i) which of the following pharmaceutical activities do you perform in your practice (see table 5)? (yes, no); (ii) which of the following do you think is/are the reasons that may prevent the hospital pharmacist in Kuwait from implementing pharmaceutical care (i.e: barriers)? (lack of time, lack of knowledge, lack of training, lack of communication skills, lack of resources, lack of staff , others [specify]).

Respondents who were not aware of pharmaceutical care concept were oriented with brief information focused on the definitions, objectives and activities of pharmaceutical care to allow them to answer the questions about their willingness and the barriers that may delay its implementation. The definitions used were that of pharmaceutical care "*the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. These outcomes are (i) cure of a disease; (ii) elimination or reduction of a patients symptomology; (iii) arresting or slowing of a disease process; or preventing a disease or symptomology*" [1]; and that of the patient care process in pharmaceutical care "*establishment of a therapeutic relationship, assessment including identification of medication-related problems, development of a care plan, evaluation and continuous follow-up*" [3].

The study was conducted after approval and permission from Kuwait Ministry of Health during the period from January 2005 to May 2005. Data were collected by a final year pharmacy student via face to face structured interview of the respondents in their pharmacies using the developed and pre-tested questionnaire. The interview lasted approximately 20-25 minutes. The hospital pharmacists were provided with a letter explaining the purpose of the study and they gave verbal consent to participate in the study.

Data were entered into the Statistical Package for Social Sciences (SPSS, version 13) and descriptive analysis was conducted. Prevalence was reported as percentage and 95% confidence intervals. The confidence intervals were computed using EpiCalc 2000 (CDC, USA). As the main outcome measures were binary variables describing the practice (counselling and checking of prescription appropriateness) and awareness status, logistic regression models were used to assess the predictors. These predictors included age, gender, universities for which the respondents were graduated, work site, average number of prescriptions dispensed by respondents, score on knowledge of salbutamol inhaler use and the experience of the respondents as practitioners. Results were reported as odds ratio and 95% confidence interval and only the results of the multivariate logistic results are reported. Separate regression models were fitted for provision of counselling, checking of prescription appropriateness, and awareness about pharmaceutical care, its main focus, and its objectives.

RESULTS

A total of 61 hospital pharmacists agreed to participate in the study (76.3%), 31 (50.8 %) of whom were female and 30 (49.2%) were male. The basic qualifications of the respondents were B.Pharm, 91.8%; M.Pharm, 6.6%; PharmD, 1.6%.

Only 8 (13.1%) of the respondents had post-graduate qualifications. The mean (SD) age of the study participants was 38.8 (11.5) years. The mean years of experience as practitioners was 14.7 (10.9) years.

The mean (SD) of prescriptions presented to the pharmacy during the daily working hours of the respondents was 317 (124.8.), and that of prescriptions dispensed by each pharmacist was 69.5 (36.3). Fifty two (85.3%, CI: 73.3 – 92.6%) of the respondents performed frequent checking of the prescriptions' appropriateness in relation to drug indication, dose, duration of therapy and drug interactions. Lack of time and patient load were the main reasons for the remaining 14.7% who rarely checked for prescription appropriateness.

A total of 35 (57.4%, CI: 44.1 – 69.7%) of the respondents performed frequent interventions on prescriptions through communicating with physicians, while the remaining 42.6% provided interventions sometimes. Table 1 shows prevalence of routine pharmacist interventions which require physician communication. A total of 18 (29.5%, 18.9 – 42.7%) of the study participants were contacted frequently by physicians requesting information about drugs. Table 2 shows prevalence of type of information requested routinely by the physicians through pharmacist communication.

Table 1: Prevalence and (95% Confidence Interval) of routine pharmacist interventions which require physician communication (n = 61)

Intervention	Frequency	Prevalence (95% CI)
Dose adjustment	57	93.4 (83.3 - 97.9)
Change of dosage form (e.g., solid to liquid)	34	55.7 (42.5 - 68.3)
Inappropriate drug for condition that needs change to different drug	23	37.7 (26.0 - 51.0)
Drug interaction	6	10 (4.1 – 20.9)
Change of drug strength	1	1.7 (0.1 – 9.9)
Change of frequency of medication use	7	11.5 (5.1 – 22.8)

Table 2: Prevalence and (95% Confidence Interval) of type of information requested routinely by the physicians through pharmacist communication (n = 61)

Information requested	Frequency	Prevalence (95% CI)
Dosage form	41	67.2 (53.9 – 78.4)
Dose	48	78.7 (65.9 – 87.7)
Strength	51	83.6 (71.5 – 91.5)
Dosage interval	27	44.3 (31.8 – 57.5)
Duration of use	27	44.3 (31.8 – 57.5)
Drug interactions	28	45.9 (33.3 – 59.1)
Adverse drug reactions	29	47.5 (34.8 – 60.6)
Contra- indications	36	59.0 (45.7 – 71.2)
Availability of drugs and/or alternative brands of the drugs in pharmacy	7	11.5 (5.1 - 22.8)

A total of 32 (52.5%, CI: 39.4 – 65.2 %) of the study participants reported to frequently provided patient counseling, while 29 (47.5%, CI: 34.8 – 60.6%) provided it sometimes. Only 3 (4.9%) of them provided the counseling in a special counseling area, while others used the pharmacy counter 51 (83.6%) and inpatient area 7 (13.1%). The knowledge of the respondents about the counseling points for salbutamol inhaler was assessed by asking them to list the instructions they would provide to an asthmatic patient with regard to the appropriate technique of using the inhaler. The total score for this assessment was out of 10. A total of 35 (57.4%, CI: 44.1 – 69.7) of the respondents scored ≤ 5, 17 (27.9%, CI: 17.5 – 41.0) and 9 (14.8%, CI: 7.4 – 26.7%) scored in the range of 6 - 9 and 10, respectively. A total of 43 (70.5%, CI: 57.3 – 81.1%) of the respondents reported to keep patient's medication records (patient name and medications dispensed) either manually or computerized in their pharmacies.

Table 3 provides the adjusted odds ratios and 95% confidence intervals that quantify association between respondents' factors and the frequent provision of patient counseling and checking of prescription appropriateness. The frequent provision of counseling and checking of prescription appropriateness followed the same pattern and were non-significantly most common among the youngest age group (20-40 years), females, Kuwait university graduates and those with a practice experience of 1-20 years. The frequent provision of counseling was found to be non-significantly most common among

Table 3: Adjusted odds ratios and (95% Confidence Interval) association between provision of patient counselling; checking of prescription appropriateness and various variables (n = 61)

Respondent Characteristic	Frequently counselled patients OR (95% CI)	p	Frequently checked prescriptions for appropriateness OR (95% CI)	p
Age (Years)				
20-40	Reference		Reference	
41-60	0.7 (0.3 – 1.9)	0.48	0.1 (0.02 – 1.1)	0.07
Gender				
Male	0.6 (0.2 – 1.4)	0.30	0.8 (0.2 - 3.4)	0.80
Female	Reference		Reference	
Universities				
Kuwait University graduates	Reference		Reference	
Overseas Universities graduates	0.3 (0.1 – 1.1)	0.08	0.4 (0.1 – 1.7)	0.21
Work Site				
Adan Hospital	Reference		Reference	
Amiri Hospital	0.8 (0.2-3.5)	0.74	1.1 (0.2-8.3)	0.89
Farwanhiya Hospital	0.4 (0.1-1.9)	0.27	1.1 (0.2-7.6)	0.95
Mobarak Hospital	2.2 (0.5-.8.4)	0.32	0.3 (0.1-4.2)	0.40
Average number of prescriptions dispensed by the respondents				
< 30	0.7 (0.2-3.4)	0.70	0.5 (0.1-5.2)	0.53
31-60	0.8 (0.2-2.9)	0.74	0.4 (0.1-4.6)	0.91
61-90	0.6 (0.1-2.8)	0.55	1.1 (0.2-5.8)	0.48
> 90	Reference		Reference	
Score on the knowledge of salbutamol inhaler use				
≤ 5	Reference		Reference	
6-9	1.7 (0.5-5.4)	0.38	3.2 (0.6 – 6.7)	0.15
10	3.0 (0.6 – 7.1)	0.16	3.1 (0.4 – 7.8)	0.27
Experience as practitioners (Years)				
1-20	Reference		Reference	
21- 40	0.4 (0.1 – 1.2)	0.11	0.2 (0.02 – 1.1)	0.14

pharmacists working at Mobarak hospital (OR: 2.2, 0.5-8.4), pharmacists who dispensed more than 90 prescriptions during their daily working hours, and those who scored above 5 out of 10 in the score on knowledge of salbutamol inhaler use. The frequency of checking prescriptions was non-significantly least common among pharmacists working at Mobark hospital (OR 0.3, 0.1-4.2), pharmacists who dispensed less than 60 prescriptions daily, and those scored less than 5 out of 10 in the score on the instructions for salbutamol inhaler use.

A total of 46 (75.4%, CI: 62.4 – 85.2%) of the respondents reported that they had heard about pharmaceutical care concept. The main sources for this were undergraduate training (47.8%), internet access and reading from text books (17.4%).and postgraduate training (15.2%).

A total of 35 (76.1%, CI: 60.9 – 86.9%) of those who heard about pharmaceutical care indicated that its main focus was the patient, the remaining 23.9% indicated that the prescription or OTC request and the physician were the main focus of pharmaceutical care. Only 18 (39.1%, CI: 25.5 – 54.6%) of those who had heard about pharmaceutical care indicated their awareness in relation to its appropriate objectives.

Table 4 provides the adjusted odds ratios and 95% confidence intervals quantifying association between respondent factors and their awareness about pharmaceutical care concept; its main focus; and its objectives. There were no significant predictors of pharmacists' awareness of pharmaceutical care and awareness of the patient as the focus of pharmaceutical care.

Table 4: Adjusted odds ratios and (95% Confidence Interval) association between awareness about pharmaceutical care, its main focus, its objectives and various variables (n = 61)

Respondent Characteristic	Awareness of the term Pharmaceutical care OR (95% CI)	p	Awareness of the patient as the main focus of pharmaceutical care OR (95% CI)	p	Awareness of the appropriate objectives of pharmaceutical care OR (95% CI)	p
Age (Years)						
20-40	Reference		Reference		Reference	
41-60	2..6 (1.0 – 8.4)	0.12	0.6 (0.2 – 2.4)	0.51	0.8 (0.3 – 2.9)	0.83
Gender						
Male	1.3 (0.4 – 4.2)	0.66	1.1 (0.3 – 4.1)	0.93	3.8 (1.1 – 12.1)	
Female	Reference		Reference		Reference	0.04
Universities						
Kuwait University graduates	Reference		Reference		Reference	
Abroad Universities graduates	3.9 (1.0 – 6.9)	0.22	0.7 (0.01 – 0.9)	0.76	5.3 (1.2 – 14.4)	0.03
Experience as practitioners (Years)						
1-20	Reference		Reference		Reference	
21- 40	2.0 (1.0 – 6.6)	0.26	0.3 (0.1 – 1.0)	0.05	0.4 (0.1 – 1.3)	0.10

Table 5: Prevalence and (95% Confidence Interval) of pharmaceutical care activities performed by the respondents (n = 61)

Pharmaceutical care activity	Frequency	Prevalence (95% CI)
Assessing patients' needs for review of drug therapy	23	37.7 (25.9 – 51.0)
Assessing patients' need for drug therapy monitoring	6	9.8 (4.1 – 20.9)
Assessing patients' need for advice on lifestyle modifications	21	34.4 (23.0 – 47.8)
Undertaking review of drug therapy as part of regular ward rounds	9	14.8 (7.4 – 26.8)
Providing advice on medicines or side effects	29	47.5 (34.8 – 60.6)
Providing advice on lifestyle modifications	19	31.2 (20.2 – 44.4)
Monitoring compliance of medicines	11	18.0 (9.8 – 30.4)
Monitoring adverse effects	9	14.8 (7.4 – 26.7)
Recommending changes after review or monitoring of drug therapy	5	8.2 (3.1 – 18.8)

The awareness about the appropriate objectives of pharmaceutical care was non-significantly high among the age group 20-40 years and those with a practice experience of 1-20 years. Males were 3.8 times more likely than females, and Kuwait university graduates were 5.3 times more likely than overseas university graduates to be aware of the appropriate objectives of pharmaceutical care (P < 0.05).

A total of 30 (65.2%, CI: 49.7 – 78.2%) of those who had heard about pharmaceutical care reported its implementation in their practice. Table 5 shows pharmaceutical care activities that were reported to be performed by the respondents. All pharmacists who had neither heard about pharmaceutical care nor implemented it in their practice were willing to implement it.

The participants were asked to rate their level of agreement using a 4-point scale (1= poor, 2= satisfactory, 3= good and 4 = very good) in relation to the capability of hospital pharmacists in Kuwait to fulfill skills and knowledge that are necessary for the success of pharmaceutical care practice.

The mean (SD) rates were as follows; communication skills 2.7 (0.9), solid background in pharmacotherapeutics 2.5 (0.9), interaction with health care providers during the performance of pharmaceutical care services 2.7 (0.8), and the use of their knowledge and skills to evaluate prescriptions and provide recommendations to physicians 2.6 (1.0).

The study participants indicated that the anticipated problems that may delay the implementation of pharmaceutical care in their practice were lack of time (78%), lack of staff (71.2%), lack of training (44.1%), lack of resources (37.3%), lack of communication skills (22%), lack of knowledge (13.6%) and others (15.3%) including lack of patients and physicians trust on the ability of pharmacists. A total of 55 (90.2%, CI: 79.2 – 95.9%) admitted that these barriers could be overcome through increasing the number of staff, participation in effective continuing educational programs, availability of more resources, effective communication and collaboration with other health care providers.

DISCUSSION

This study describes the readiness of hospital pharmacists in Kuwait towards the implementation of pharmaceutical care services in their practice. The mean number of prescriptions dispensed was high, which would limit the time required for patient counselling and appropriate checking of prescriptions. It was reported that pharmacists with heavy dispensing load are more likely to commit errors [19]. However; the accuracy of dispensing was not measured in this study.

The majority of the participants reported that they frequently checked for prescription appropriateness; and performed interventions on prescriptions. This is a positive finding since the process of prescription review and intervention are fundamental to pharmaceutical care. Review of prescriptions and application of appropriate intervention are essential to allow the hospital pharmacists becoming more efficient, timely organized, and more patient focused [20]. The present study identified infrequent contact of the respondents with physicians in relation to information about drugs; this may be due to the high competency of the prescribes or their lack of confidence in the pharmacists' abilities. Pharmaceutical care requires a strengthening of the professional relationship between pharmacists and physicians to offer mutual beneficial partnerships in which both share responsibility for patient care. Closer pharmacist-physician collaboration in the drug therapy management processes produces improved patient outcomes [21,22]. Therefore, effective pharmacist-physician collaborative

working relationships in Kuwait hospitals needs to be improved in order to initiate successful implementation of pharmaceutical care.

The rate of frequent patient counselling provision was low, which could adversely affect patient compliance with prescription regimens. International research has consistently shown low pharmacist counselling rates [23-27]. The counselling of patients mainly on the pharmacy counter, the non-frequent provision of counselling, and the poor knowledge of respondents about the appropriate instructions for the use of salbutamol inhaler highlights the need for the hospital pharmacists to explore ways of providing more private counselling areas and on the need to improve the knowledge base of pharmacists through continuing professional development.

Pharmaceutical care requires the development of a bond between the pharmacist and patient through effective communication as a pre-requisite for providing high quality patient care. Counselling is a critical part of pharmaceutical care that can not be compromised. It does not only promote compliance but also 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.

A majority of respondents indicated their awareness of pharmaceutical care. However, the lack of uniformity in their responses to the questions about the main focus of pharmaceutical care and its objectives suggests a degree of confusion and lack of appropriate awareness and formal training in this matter. The declaration by the majority of those aware of pharmaceutical care that they had implemented and maintained it in their practice needs further examination.

The current findings suggest the need for hospital pharmacists to improve their knowledge base in pharmacotherapeutics with appropriate training to facilitate clinical problem solving. Their participation in educational programs on communication will allow them to develop stronger communication skills to interact effectively with other health care providers and patients, but these alone would not be enough to stimulate the practice of pharmaceutical care when the other barriers still

exist. Thus, the lack of time and lack of staff as main barriers identified in this study need to be overcome. Lack of time is the most significant obstacle standing against the implementation of pharmaceutical care practice worldwide. However, it has been suggested that pharmacists could make more time if there was better delineation between the roles of pharmacist and technician. If pharmacists were less involved in dispensing and preparation duties, this would "free-up" time for patient-focused care [28]. Through re-organization of pharmacy staff duties, a certain amount of time could be routinely scheduled for patient care activities. A good money management may be required to hire more pharmacists particularly in heavy patients' loaded pharmacies.

Pharmacists who effectively perform pharmaceutical care activities need to be identified so that they may act as a role model for others. The high interest and willingness shown by respondents, in addition to their declaration that perceived barriers could be overcome would be crucial to the implementation of pharmaceutical care services in the hospitals of Kuwait.

Study Limitation

The sample size was relatively small and represents approximately 15% of the total number of pharmacists (534) working at the Ministry of Health in the three levels of health care delivery (2003 estimate). Other potential limitations include the social desirability and that respondents may have offered favourable answers (non-response bias). In this respect, this study had no way of verifying respondents' claims, which were taken at face value.

CONCLUSIONS

The current practice of hospital pharmacists in Kuwait needs further improvement particularly in relation to interaction with physicians and patient counselling. The awareness about pharmaceutical care is high, but the lack of uniformity in the responses regarding the focus and objectives of pharmaceutical care indicates a lack of appropriate understanding in this matter. All respondents have shown high willingness towards the implementation of pharmaceutical care services in their practice. A joint sustained collaboration between the Ministry

of Health, the Pharmaceutical and Medical Associations and Kuwait University is essential to promote and implement the change process that is required.

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