

Provision of clinical pharmacy education and services by RAK college of pharmaceutical sciences, Ras Al Khaimah, UAE

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ABSTRACT

Objectives: Internationally, the role of pharmacist has now been extended from the provision of traditional services to patient specific care services. Unlike other developed countries, clinical pharmacy services are very rare in the health care settings of United Arab Emirates (UAE). Hence, clinical pharmacy based education and training is the need of the hour.

Materials and Methods: RAK College of Pharmaceutical Sciences (RAKCOPS) through its innovative undergraduate pharmacy curriculum with a practice-oriented training, is enabling the students to acquire knowledge, skills, and practice to apply in a healthcare set up. RAKCOPS established a clinical pharmacy department in the year 2009 at Ibrahim Bin Hamad Obaidallah Hospital of Ras Al Khaimah, UAE, which is a 330 bedded tertiary care medical specialty hospital. In the year 2007, RAKCOPS initiated undergraduate pharmacy program of 4.6 years (B. Pharm) with a one semester of practice school training in the last semester.

Results: Practice school training as a part of B. Pharm program is mainly designed to help the students to gain confidence in their ability to be an active and useful participant in the healthcare. Clinical pharmacy related services such as drug and poison related information, adverse drug reaction (ADR) monitoring, and reporting are also provided by the department of clinical pharmacy.

Conclusion: Pharmacy practice related education and practice-based training provided for the undergraduate pharmacy students will be definitely a major contribution towards bringing up quality clinical pharmacists in UAE, who will be a major asset for the healthcare team.

Key words: Clinical pharmacy, clinical pharmacist, drug information, pharmacy practice, pharmacy education

INTRODUCTION

Clinical pharmacy is a recent specialization in the field of pharmacy compared to other disciplines.^[1] The emergence of clinical pharmacy in the early 1960s was mainly aimed to ensure the importance of pharmacists

in patient care and to promote safer medication use.^[2] During the early 1990s, the pharmaceutical care concept was implemented with the goal to ensure better patient outcomes through pharmacist expertise in the field of pharmacotherapeutics.^[3,4]

Internationally, the role of pharmacist has now been extended from the provision of traditional services to patient specific services.^[5] Developed countries like United States of America, United Kingdom, Australia, Canada, and Netherlands are the leading nations in the area of clinical pharmacy related activities.^[6] In contrast, the role of pharmacist in developing countries has not been clearly defined and their services are primarily

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limited to traditional care and not well recognized by the community or other healthcare professionals.^[7]

In United Arab Emirates (UAE), the pharmacists are mainly employed in different areas such as community pharmacy, hospital, industry, regulatory bodies, sales and marketing, academia, research, and drug distribution and comparatively a small number of pharmacists are employed as clinical pharmacists or as drug information pharmacists in private and public healthcare settings.^[8] Majority of the pharmacists working in UAE are either expatriates or graduates from other nations.^[8] To accomplish the increasing demand for the pharmacist in the UAE healthcare field, good number of pharmacy schools ($n = 7$) have been established in various emirates of UAE from 1992 to till date.^[8] Unlike other developed countries, clinical pharmacy services are rare in the healthcare settings of UAE except Abu Dhabi and to a certain extent in Dubai.^[8,9] Hence, clinical pharmacy based education and training is the need of the hour for a quality care for patients. Published data regarding the type and nature of pharmacy practice or clinical pharmacy related education and clinical pharmacy related services in UAE is very limited.

The RAK College of Pharmaceutical Sciences (RAKCOPS), a constituent college of RAK Medical and Health Sciences University (RAKMHSU), Ras Al Khaimah, UAE is making continuous efforts to strengthen the clinical pharmacy services especially in Ras Al Khaimah, UAE. RAKCOPS, through its innovative undergraduate pharmacy curriculum and practice oriented training, is enabling the pharmacy students to acquire knowledge, skills, and professional competencies relevant to healthcare in the context of pharmacy practice. With this background the main objectives of the article was to:

- Brief on establishment a clinical pharmacy department in a hospital set-up
- Discuss practice based teaching and learning framework adopted in RAKCOPS
- Provide an overview of different components of hospital-based practice school training provided to undergraduate pharmacy students
- Evaluate the nature and type of clinical pharmacy related services provided to healthcare professionals.

MATERIALS AND METHODS

Establishment of a clinical pharmacy department

RAKCOPS has established a clinical pharmacy department in the year 2009 at Ibrahim Bin Hamad

Obaidallah Hospital of Ras Al Khaimah, UAE, which is a tertiary care hospital with the objective of supporting the academic programs and providing practice school training and clinical pharmacy services. This is the first university based clinical pharmacy department, which is set up in a government hospital. This is a 330 bedded tertiary care hospital with different medical specialties and a geriatric hospital.

The department occupies a total area of 1200 ft.^[2] It includes two faculty rooms, a lecture hall, a seminar room, and a satellite library with computer and internet facilities. The department is located in the geriatric wing of the Ibrahim Bin Hamad Obaidallah Hospital.

The department has a drug information center that includes computers with Micromedex and internet facility. It also includes the essential references for quick search and provision of quality drug-related information.

Functioning

Clinical pharmacy department acts as an onsite training site for the undergraduate pharmacy students during their regular case-based learning (CBL) sessions and practice school rotation in the Hospital. The clinical pharmacy department is also a main training site for Masters Program in Pharmacy Practice. The major consultancy services provided by the department include provision of drug and poison related information and adverse drug reaction (ADR) monitoring, and carrying out collaborative research projects with other departments of the Hospital.

Undergraduate pharmacy program

In the year 2007, RAKCOPS initiated 4.6 years of undergraduate pharmacy degree program (B. Pharm) with one semester of practice school training. Under the program, pharmacy practice related courses such as pathophysiology, clinical pharmacy, community pharmacy, hospital pharmacy, and therapeutics are distributed in different semesters. These courses are delivered through didactic lectures, case-based learning and problem-based learning (PBL) sessions.

Graduate program

RAKCOPS has initiated 2-year Masters Program in Pharmacy Practice (Clinical Pharmacy) with 1 year of dissertation work. These students are trained in pharmacy practice related courses and also exposed to the actual practice set-up with the clinicians and other healthcare professionals.

Practice school training

Practice school training is a novel, unique, and innovative approach of undergraduate pharmacy program of RAKCOPS, which is not there in any of the undergraduate pharmacy programs offered in the Middle East countries. Practice school training consists of 5 weeks of attachment each in hospital, community pharmacy, and pharmaceutical industry, during semester nine of B. Pharm program.

Practice school training as a part of undergraduate program is mainly designed to help the students to gain confidence in their ability to be an active and useful member of the healthcare system. For pharmacy practice related training, students are attached to Ibrahim Bin Obaidallah Hospital of Ras Al Khaimah. Five weeks of attachment in hospital includes rotation at different medical specialties such as internal medicine, cardiovascular, endocrine, nephrology, chest, neurology, gastroenterology, emergency, and inpatient and outpatient pharmacy departments.

Clinical pharmacy related services

The department also provides clinical pharmacy services wherever required. The different clinical pharmacy related services provided by the department are drug and poison related information and ADR monitoring and reporting. Any drug or poison related queries received from the healthcare professionals during pre-ward rounds clinical meeting, directly, or through telephone are documented in the drug information request form. The queries are attended as per the modified systemic approach for providing the drug information and documented in the drug information documentation form. All ADRs reported by the healthcare professionals are monitored, evaluated and documented.

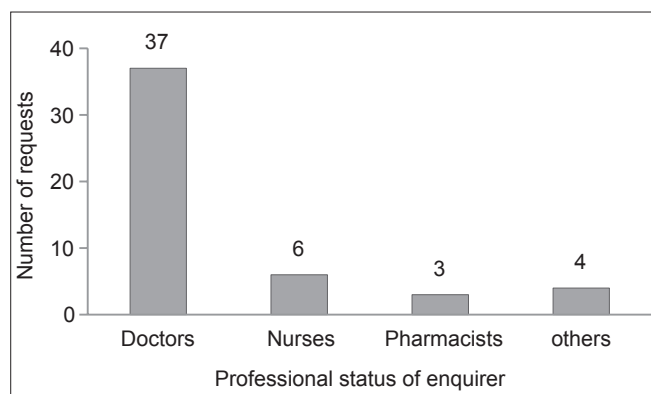


Figure 1: Requestors of drug information

RESULTS AND DISCUSSION

Drug information

Since its initiation, a total of 50 drug and poison related queries were received by the clinical pharmacy department from different members of health care team both within and outside the hospital. Majority of the queries ($n = 18$) were related to dosage/administration. Considering the professional status of the enquirer, clinicians/physicians utilized the drug information service to a larger extent ($n = 37$) followed by nurses ($n = 6$). Majority of the queries were received by direct access ($n = 31$) followed by 13 during ward rounds. Most often the purpose of these queries was for better patient care ($n = 44$) and the answer was needed immediately ($n = 27$). In majority of the cases ($n = 32$) the responses to the queries were provided on time. The details of drug and poison related information is presented in Figures 1 and 2. Our evaluation showed that the majority of the queries were related to dosage and administration, which is in contrast to the findings of another study.^[10] In our study, majority of the drug information services were utilized by the clinicians, which is similar to other published studies.^[11,12]

Adverse drug reactions

A total of seven adverse drug reactions have been reported till 2012, which is a very small number compared to the ADR reporting data and studies published internationally.^[13] The main reasons for low number of ADR reporting could be due to the lack of awareness of healthcare professionals and public regarding the services of the department and the concept of reporting of ADRs as part of their responsibility and its functioning in isolation. The department has to work in collaboration with other organizations providing similar services. The clinicians and other healthcare professionals in the hospital need to completely utilize the clinical pharmacy

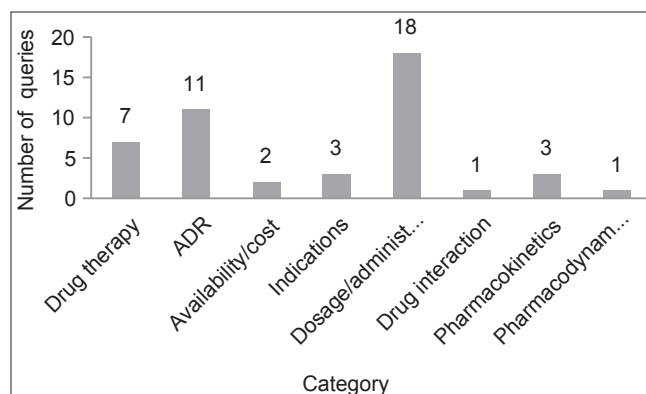


Figure 2: Category of drug information queries

services. Local awareness to clinicians and other healthcare professionals and continuing pharmacy education (CPE) programs need to be organized to improve the networking between other hospitals and universities. These steps will aid in widening the utilization of the services of the department.

CONCLUSION

Pharmacy practice related education and practice based training provided for the undergraduate pharmacy students will be definitely a major contribution towards bringing up quality clinical pharmacists in UAE, who will be a major asset for the healthcare team. However, the reasons for less number of drug information queries and adverse drug reaction reporting or not completely utilizing the clinical pharmacy services should be assessed for further strengthening of clinical pharmacy services. With the introduction of the MS program in Pharmacy Practice, we are anticipating an increase in the activity of clinical pharmacy services in future. In addition, creating opportunities for the undergraduate pharmacy graduates to work as clinical pharmacist in public and private healthcare settings of UAE is also an immediate need.

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