Pharmaceutical Care Education and Practice in Jordan in the New Millennium

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ABSTRACT

Objectives: Pharmacy practice in Jordan is still developing. Modernization and advancement in pharmacy practice are being slowly adapted by pharmacy professionals and faculties of pharmacy. This study aim was to look into current status of pharmaceutical care in pharmacy education and practice in Jordan. Possible problems that would face Pharmaceutical Care application were explored.

Methods: This study consisted of a quantitative part in which the pharmacy curricula from the two governmental universities and four private universities were compared as to how many credit hours are allocated for Pharmaceutical Care education. In the qualitative part, a structured interview was conducted with leaders in the Pharmacy profession. The main theme in the interview was the development and implementation of Pharmaceutical Care education and practice in Jordan. The selected fourteen recognized leaders of pharmacy profession in Jordan were asked to express their views on issues related to status of education, practice, and pharmacy curricula.

Results: Current B.Sc. pharmacy curricula in Jordan have a weak emphasis on Pharmaceutical Care education and training. One governmental university (Jordan university of Science and Technology) and two private universities (Philadelphia University and Al-Isra'a Private University) had the highest percentage of their curricular hours allocated to Pharmaceutical- care- related courses. But this was only 20% of total hours required in the pharmacy curriculum. None of the six universities included had a structured patient - oriented training for pharmacy students. In the qualitative part, leaders of pharmacy believe that both the practice and education should be directed towards Pharmaceutical Care. Recognized problems facing this new direction could be: the influence that comes from pharmacy professionals as well as other professions, lack of a proper job description for pharmacists, and the slow change in educational programs.

Conclusions: The leadership of pharmacy is in support of changes towards Pharmaceutical Care education and practice, coming from within the profession.

Keywords: Pharmaceutical Care, Jordan, pharmacy education

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INTRODUCTION

During the last forty years or so, the profession of pharmacy experienced significant changes worldwide. These changes included the loss of the traditional role of the pharmacist in drug manufacturing, and expansions in the pharmacist's role in patient care. The concept of clinical pharmacy and more pharmacist involvement in patient care advanced over the years and made its way to coin the new role of the pharmacist in the health care system[1-4].This new direction in the pharmacy profession was clearly defined by the introduction of the concept of Pharmaceutical Care by Hepler and Strand in 1990[5].The concept of Pharmaceutical Care requires pharmacists to focus on the individual patient and assume a degree of responsibility for the care of that patient as it relates to medication use. To be able to refocus the pharmacy profession to the patient, changes had to be made in practice as well as education. In the United States, faculties of pharmacy have adopted the doctor of pharmacy (Pharm D) programs for preparing pharmacists qualified in Pharmaceutical Care; however, outside the United States this change has been variable and slow[6-7].

In Jordan, pharmacy practice as a modern profession started only in the early 4th decade of the 20th century with just a few pharmacists practicing in their community pharmacies. Rapid growth in the number and size of pharmacy services followed, as Jordan now has more than 8,800 registered pharmacists, and more than 1,600 community pharmacies[8].Changes in pharmacy education have been rapid too, with two public and six private faculties of pharmacy graduating about 1000 pharmacists per year[9]. This is a relatively high number of faculties for a small country like Jordan, especially when compared to 5 and 10 faculties of Pharmacy in big countries like Saudi Arabia and Iran, respectively[9,10], 13 faculties of pharmacy in a country with large population like Egypt (80,335,036, July 2007 est.)[11] The Bachelor of Science (B.Sc) degree in pharmacy is still the only undergraduate pharmacy degree offered by the private universities in Jordan. The first faculty to adopt the Pharm D program in Jordan was the faculty of pharmacy at Jordan University of Science and Technology (JUST) in 2000, followed by The University of Jordan (JU) in 2005. Both faculties kept the traditional B.Sc of pharmacy[8-9].

The aim of this study was to look into current B.Sc pharmacy curricula in Jordanian universities, as well as pharmacy practice and education in Jordan from the point of view of the leaders of the profession. Moreover, problems facing the application of Pharmaceutical Care in Jordan were explored, and possible solutions were suggested.

METHODS

Study design

The study methodology had two components: quantitative and qualitative, both were conducted simultaneously during the time period (February 2004-September, 2005). In the quantitative part, a comparison among the pharmacy teaching curricula in six of the eight Jordanian Faculties of pharmacy was carried out, with a focus on the number of credit hours that are dedicated to Pharmacology and Pharmaceutical Care courses, and the number of clinical training hours. The information about the curricula was collected from universities by different means (personal contacts, phone, university yearbook or via the university website). For technical reasons, two private faculties of pharmacy were excluded since the researchers could not obtain clear B. Sc pharmacy curricula for either.

The qualitative component involved interviewing fourteen pharmacists recognized by the authors as “leaders in the profession in Jordan” in terms of their long experience and position in both the academic and profession sectors (e.g. ex- or current deans of pharmacy Faculties, ex-health ministers with a pharmacy background and ex-or current head of The Jordan Pharmaceutical Association). Interviewees were considered as *key informants* and were asked to express their views on major issues that concern the education and practice of pharmacy in Jordan.

The *key informant* technique is an ethnographic

research method, which has been used mainly in the fields of anthropology, sociology and psychology, and is now being applied on other branches of social investigation and evaluating health services. A *key informant* (i.e. the pharmacist in this case) is an expert source of information, who is in a position to be familiar with the particular area that the researcher is interested in[12-13].

The interviews were semi-structured. A topic guideline of key questions was developed to provide some structure and direction for the interviews (see below). However, participants were free to express any views, add comments or recommendations that were not originally included. The topic guideline was peer-reviewed, edited and then certain questions were modified before conducting the interviews. In most interviews two of the authors took part during the interviewing session with one author interviewing while the other was taking notes on the answers. Each interview lasted for a little longer than an hour.

Interviews were analyzed qualitatively and individually by two members of the research team (AB and MW). Different themes were identified and merged together to end with the final themes that are discussed below.

The key questions for the interviews were:

- What are the problems facing pharmacy practice in Jordan?
- Why we need to change Pharmacy practice?
- What is the future of pharmacy practice in Jordan in the new millennium? What will be required from any pharmacist to do?
- How should pharmacy students be taught to become highly competent in Pharmaceutical Care to provide safe effective drug use?
- What a pharmacy graduate should be able to do, when they graduate with a pharmacy degree?
- Should all faculties of pharmacy in Jordan adopt Pharm D program?
- How should practicing pharmacists in Jordan be oriented towards adopting the concept of Pharmaceutical Care?

RESULTS AND DISCUSSION

The quantitative part

The average number of credit hours for the B.Sc in pharmacy program in Jordan is found to be 160, which would take about five years to complete. This is consistent with numbers reported from other neighboring countries[9, 10].

Pharmacy curricula varied widely with respect to the number of credit hours dedicated to teaching Pharmaceutical Care topics. Less variation was noted in other topics like Pharmaceutics and Medicinal Chemistry. Three out of the six faculties had the highest number of credit hours allocated for education of Pharmacology and Pharmaceutical – Care-related topics; these were Jordan University of Science and Technology (JUST), Philadelphia University and Al-Isra'a Private University. In these faculties, the overall percentage of Pharmacology and Pharmaceutical Care allocated hours was about one fifth of the total curricula. Unfortunately, none of the faculties had a patient-orientated structured training program.

Table (1) summarizes Jordanian faculties of pharmacy's course distribution and number of credit hours as requirements for graduation with a B.Sc in pharmacy.

These quantitative data provide the background for where change should start. Improvement of the pharmacy profession in Jordan should start at the education level with the modernization of the curricula and making them more relevant to practice in terms of applying Pharmaceutical Care. Change in this direction has already started to take place with the adoption of the Pharm.D program by the two main faculties in Jordan. Whether or not this should be the utter direction of pharmacy education is an issue that will be discussed in the qualitative part below.

The qualitative part

Three main themes were identified during the interviews:

- Main problems facing pharmacy practice in Jordan.
- The concept of Pharmaceutical Care in Jordan.

- Practicing pharmacists' personal needs regarding career development (e.g. CE courses, financial needs, etc…).

A number of sub-themes emerged within the main themes. This can be summarized as shown below:

A. Main problems facing pharmacy practice in Jordan

Several problems were recognized as main hurdles that need to be overcome in order to develop good pharmacy practice services in Jordan. The major problem was that education programs are not coping with the changing role of the pharmacist worldwide. Secondly comes the opposition from medical professionals relating to the pharmacist's ability to prescribe or be responsible to identify, assess, prevent and resolve drug-therapy problems of the patients. Talking of the sensitivity of this issue to the doctors, this may be one reason why the Department of Health in England prefers the term "medicines management" rather than "Pharmaceutical Care"[14]. Pharmaceutical Care, as defined by Cippole *et al.* (1998) would have the practitioner (in this case, the pharmacist) taking responsibility for a patient's drug-related needs and being held accountable for that commitment, which might be regarded as invasion of territory by the medical profession[15].

Lack of proper job description and awareness of the pharmacist's clinical role among healthcare professionals was recognised by the majority of participants as being an important obstacle towards the development of a comprehensive clinical pharmacy services in the country. The problem of low pharmacist income in Jordan as compared to other countries was also mentioned by most participants. Both, pharmacists and other health care professionals, were held to be responsible for such problems.

The change in pharmacy practice and education towards Pharmaceutical Care was seen as a must. The increase in the number of medications, increased cost of hospitalization, the change towards pharmacy automation and the high cost of the drug-related morbidity and mortality were the main reasons for the required change. Moreover, the participants addressed the point of the large number of pharmacists in Jordan (one pharmacist for every 600 members of the Jordanian population)[8] and the need to create new job opportunities for these pharmacists.

The main identified problems facing practising pharmacy in Jordan are summarized in Table (2).

B. The concept of pharmaceutical care in Jordan

All of the participants agreed on the adoption of Pharmaceutical Care principles in education and practice. They demanded an educational program that would provide pharmacists with the clinical expertise necessary to provide Pharmaceutical Care, and communicate with the health care team. However, half of the participants did not agree on switching pharmacy education programs in Jordan utterly into Pharm D programs. Participants opposing the application of Pharm D program stressed the importance of keeping enough courses in basic pharmaceutical sciences in the Pharm D program, as well as keeping the B.Sc program running in parallel with the Pharm D if the latter is to be applied. They strongly stressed out that basic pharmaceutical sciences should not be ignored in order to cover the needs of the pharmaceutical industry.

It is worth mentioning that the concept and principles of Pharmaceutical Care have been adopted by many countries worldwide such as the United States, New Zealand, Australia, the Netherlands, Spain and South Africa[14-16].

C. Practicing pharmacists' personal needs and career development toward the future

All participants stressed the importance of continuing Pharmaceutical Education (CE) programs (10-15 hours of continuous education per year) as the preferred method for pharmacists update. They believed that such CE courses should be considered a requirement for license renewal. Other recommendations included establishing Certificate programs, Residencies or Fellowship programs.

Moreover, leaders stressed that pharmacists need to be equipped with more self-confidence and to feel more responsible. The application of clinical pharmacy services in the public sector and cost-effectiveness are sure to be reflected on saving and better health care. They proposed that changing the law is required regarding a new job description allowing pharmacists to take a more active role in drug selection and patient counseling, and requiring CE courses for license renewal.

With regard to the development of the role of the pharmacist in the community as a health care professional, all interviewees considered the first step towards the change in pharmacy practice to be the promotion of the essential role of the pharmacist as part of health care and encouraging pharmacists to step out from their dispensaries to being more proactive in patient-oriented type of care (e.g. ensuring safe and effective therapy and solving treatment-related problems including compliance), and recognizing chronic shortages of essential drugs and develop strategies to combat the fake and inferior quality drug problems. However, few interviewees disagreed with the prescribing and immunizing roles of the pharmacists. One of the forward steps in this direction is that at the time of writing this article a committee has been formed within the Jordanian Pharmaceutical Association (JPA), which is called the Good Pharmacy Practice (GPP) committee, aiming at the development of a systematic GPP program similar to that conducted previously in other countries[17]. It is hoped that the systematic and comprehensive implementation of such programs would help to improve the patient-oriented face of the profession and develop pharmacy practice in Jordan.

The leadership of pharmacy in Jordan is supportive of changes towards clinical pharmacy education and practice. They all agreed that if the profession wanted to survive in the new millennium it had to move to the patient care side and that change should come from within the profession. In addition to increasing the number of pharmacy schools, training and financial incentives need to be of high standards.

CONCLUSION

This research study highlights for the first time in Jordan some important hurdles that are facing pharmacy education and practice in the country. Jordanian pharmacy schools B.Sc. curricula are largely deficient in Pharmaceutical Care courses and clinical training. Asking the leaders of pharmacy in Jordan to express their views regarding Pharmaceutical Care and the introduction of the Pharm D program in Jordan revealed that they were all aware of changes going on in the west. They agreed on the implementation of the concepts advocated by Pharmaceutical Care. They would completely agree on pharmacy curricular changes that would prepare pharmacists to become competent in Pharmaceutical Care. However, the inherent tendency for product orientation is still strong as half of the leaders are resistant to the idea of switching completely from the B.Sc. program to the Pharm D program. That is, they prefer keeping the two programs running in parallel. And if they had to adopt the Pharm D program only, they would keep a sizable portion of basic pharmaceutical sciences in the curricula.

The new role of the pharmacist as a drug-therapy advisor within the frame-work of Pharmaceutical Care is considered possible to be applied in Jordan. However, the role of the pharmacist as a prescriber or immunizer is less acceptable. Leaders of pharmacy in Jordan thought that practicing pharmacists should be qualified to be competent in Pharmaceutical Care; the preferred method was through continuing pharmaceutical education programs. Other methods like certificate programs, residencies, fellowships, and no-traditional Pharm D programs were not as much acceptable as continuing pharmaceutical education programs.

In general, the future of Pharmaceutical Care in Jordan looks bright. A few steps that have been taken in the past are indicators of attempts to improve the quality of pharmacy education in Jordan. Efforts should be directed towards the adoption of the Pharmaceutical Care principle in both pharmacy education and practice. This will hopefully move the focus of pharmacy practice in Jordan from product

orientation (dispensing medications) to patient care.

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Table 1. Jordanian faculties of pharmacy courses distribution and number of credit hours as requirements for graduation with a B.Sc in pharmacy

Courses	University of Science and Technology n(%)**	Jordan University n(%)**	Philadelphia University n(%)**	Al Isra'a University n(%)**	Private University of Amman n(%)**	Applied Sciences University n(%)**
Basic courses*	67 (41.8)	56 (34.5)	50 (31.3)	79 (49.3)	62 (38.8)	56 (35.0)
Pharmaceutics,	17 (10.6)	17 (10.4)	18 (11.3)	20 (12.5)	15 (9.3)	14 (8.7)
Medicinal-, analytical- and Phyto-chemistry	32 (20.0)	24 (14.8)	30 (18.8)	34 (21.3)	24 (15.0)	20 (12.5)
Pharmacology & Pharmaceutical Care	35 (21.8)	18 (11.1)	36 (22.5)	35 (21.8)	19 (11.8)	24 (15.0)

*Including basic sciences and humanities courses

** n: number of credit hours. Percentage is calculated by dividing the number of credit hours by the total number of hours (160 in the cases of all universities, except for Jordan University which is 162 hours).

Table 2: Problems facing pharmacy practice in Jordan

Recognized problems	Agree % (number)	Neutral% (number)	Disagree% (number)
Education programs not coping with the changing role of pharmacists	86% (12)	7% (1)	7% (1)
Pharmacists have permitted others to establish the scope and limits of professional pharmacy practice	71% (10)	14% (2)	14% (2)
Pharmacists are responsible for the status of the profession and for changing what needs to be changed	71% (10)	-----	29% (4)
Opposition from the medical profession relating to pharmacist's ability to prescribe	71% (10)	14% (2)	14% (2)
Lack of a proper job description and effective communication of the pharmacist's clinical role	64% (9)	7% (1)	29% (4)
Proper income from working as a pharmacist, payment of proper salaries to pharmacists.	64% (9)	14% (2)	21% (3)

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تعليم وممارسة مبادئ الرعاية الصيدلانية في الأردن في الألفية الثالثة

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ملخـص

الأهداف:

ما تزال الممارسة الصيدلانية في الأردن في مراحل التطور، ذلك أن التعليم والممارسة الصيدلانية يمران بمرحلـة تحديث وتطوير بطيئة. هدفت هذه الدراسة إلى تعرف وتقييم مدى تطبيق مبادئ الرعاية الصيدلانية في الأردن، كمـا هدفت إلى اكتشاف المشاكل والمعيقات التي قد تواجه التطبيق الكامل لهذه المبادئ.

الطريقة:

تتكون هذه الدراسة من جزأين. الجزء الأول كمي وتعامل مع عدد الساعات المعتمدة والمخصصة لتدريس الممارسـة الصيدلانية مقارنة بالمواضيع الأخرى في الصيدلة في الخطط الدراسية لبرنامج الصيدلة من ست جامعـات أردنيـة (اثنتان حكوميتان، وأربعة خاصة). في الجزء الثاني من الدراسة تم تقييم نوعي لمـدى تطبيـق مبـادئ الممارسـة الصيدلانية في التعليم والممارسة الفعلية والمشاكل التي قد تواجه هذا التطبيق من خلال مقابلات مبرمجة مع أربعـة عشر من القادة في مهنة الصيدلة في الأردن. وقد تم الطلب من هؤلاء الصيادلة أن يطلعونا علـى آرائهـم فـي أي موضوع يتعلق بوضع التعليم أو الممارسة في الأردن.

النتائج:

يبدو التركيز ضعيفاً في الوقت الحاضر على مبادئ الرعاية الصيدلانية في الخطط الدراسية و برنامج تدريب طلبـة الصيدلة في كليات الصيدلة الأردنية. سجلت جامعة العلوم والتكنولوجيا الأردنية (جامعة حكومية) وجامعتا الإسـراء وفيلادلفيا (جامعات خاصة) أعلى نسبة لعدد الساعات المخصصة لتعليم مساقات ذات علاقة بالممارسة الـصيدلانية، ولكن هذه النسب كانت ضعيفة ولم تتجاوز 20% من مجموع الساعات. لم يكن لدى أي من الجامعات المدرجة ضمن الدراسة برنامج تدريب سريري للطلبة موجه للرعاية الصيدلانية للمريض. في الجزء النوعي من الدراسة أكد القـادة في مهنة الصيدلة أن كلاً من الممارسة والتعليم الصيدلاني يجب أن يتوجها نحو مبادئ الرعاية الـصيدلانية. ومـن المشاكل التي قد تعيق التغيير عدم وجود وصف وظيفي مناسب للصيادلة الممارسين سريرياً والتغيرات البطيئة فـي التعليم والمهنة.

الكلمات الدالة: الرعاية الصيدلانية، الأردن، التعليم الصيدلاني.

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