

# An Empirical Study towards Status of Pharmaceutical Care Education in Asian and African Schools of Pharmacy

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## ABSTRACT

Pharmacy profession changes dramatically in all over the world during the previous decades of years. To provide pharmaceutical care, pharmacists should have the knowledge of clinical pharmacy and good communication skills. This study aims to look into the status of pharmaceutical care education in Asian and African universities.

**Methodology:** A questionnaire was designed to collect information from the pharmacy colleges in Asia and Africa regards the status of pharmaceutical care education. The questionnaire was a mail-delivered to many universities in Asia and Africa. We used Wikipedia for searching for pharmacy colleges.

**Results:** The survey elucidates that all the universities participated in the survey provide pharmaceutical care courses and in 95.94 % of these universities the course is considered as a required course. The main resources and references used in preparing pharmaceutical care lectures were Textbooks (100 % either alone or with other resources) followed by internet (81.81 %).

**Conclusion:** There are favorable attitudes for universities included in the survey toward pharmaceutical care education. The curriculum of pharmacy should include theoretical and practical part to provide the required knowledge and skills.

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## INTRODUCTION

Pharmacy profession changes dramatically in all over the world during the previous decades of years. In these changes the pharmacy profession becomes more interested in patient care while the traditional role was interested in the manufacturing of drugs (Sanazaro, 1987; Oddis, 1988; Hill *et al.*, 1989; Penna, 1990). This new role in the profession of pharmacy was clearly defined by Hepler and Strand in 1990. Hepler and Strand defined pharmaceutical care as “the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient’s quality of life” (Helper and Strand, 1990). To provide pharmaceutical care, pharmacists should have the knowledge of clinical pharmacy and good communication skills. The extended role of a pharmacist must be reflected in the education process of pharmacists. Education

outcomes should include the patient centered pharmaceutical care (Rahim and Nesar, 2012). In Pharmaceutical care practice, the pharmacists should focus on the individual patient and the pharmacist will be accountable for the patient care. To apply this new trend, many changes have to be made in the education of pharmacy (Berenguer *et al.*, 2004; Helper, 2004).

To prepare pharmacists qualified in pharmaceutical care many universities around the world start adopting the doctor of pharmacy (Pharm D) programs and many universities also start teaching pharmaceutical care courses for bachelor of pharmacy degree. In Jordan, for example, there are steps have been taken in the past which are considered indicators of attempts to improve the quality of pharmacy education (Albsoul *et al.*, 2008). In another research about pharmacy education in Jordan, Kuwait and Saudi Arabia showed that the future of pharmacy education looks bright (Al-wazaify *et al.*, 2006). Now, as there is an upsurge in clinical pharmacy, many developing countries have expanded their pharmacy curriculum for a 5- or 6-year program (Jamshed *et al.*, 2007).

This study aims to look into the status of pharmaceutical care education in Asian and African universities.

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## METHODOLOGY

A questionnaire was designed to pull together information on status of pharmaceutical care education from different pharmacy colleges in Asia and Africa (Raskati, 2009). Four experts in the field from the Department of Clinical Pharmacy, college of Pharmacy, Prince Sattam Bin Abdulaziz University, were provided first to give comments regarding the questionnaire conciseness, clarity and relevancy. Their comments were considered, corrections made accordingly and the final survey questionnaire was prepared. The questionnaire language was English.

An experiential study was conducted from September 2013 to September 2014. The online questionnaire technique was used in order to gather the data. List of pharmacy colleges was searched through Wikipedia and the e-mail IDs Of participants were recorded from websites of different colleges and universities in Asia & Africa and online questionnaires were sent to them through e-mail. In brief, the questionnaire was comprised of two sections.

First section consisted of questions regarding the demographics and basic questions about the current status of pharmaceutical care education in Asia and Africa. A second section was used to assess the suggestions needed for the development of pharmaceutical care education in Asia and Africa.

The key questions in the survey were:

- Does your pharmacy college program provide Pharmaceutical care topics in a course?
- Is the Pharmaceutical care course(s) considered as required or elective?
- Is the Pharmaceutical care course(s) provided to BSCs or PharmD program or to both?
- Is the Pharmaceutical care course(s) considered as Theoretical or Practical course or both?
- What topics are covered by these courses?
- What are the main resources and references used in preparing pharmaceutical care lectures?
- What is the instructor's specialty?
- What is the method of assessment of pharmaceutical care course (you can choose more than one)?
- What are your suggestions for the improvement of Pharmaceutical care course in your college?

Neither oral nor verbal consent was obtained from all study participants before their participation in this study. Participants who returned the completely filled questionnaire considered as an agreed study participant. If we had not received any response within two months after delivering a questionnaire through the mail, there were also a reminder mail to the participant. We excluded the participant who had not replied within four months after delivering the questionnaire. Participants were informed that all the information provided was completely

confidential and the results would be accessed anonymously. Any information that discloses the respondents' identity was debarred from the data collected. After collection of the data from the surveys, statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) for MS Windows software version 20.0.

## RESULTS AND DISCUSSION

In this study, 22 universities replied to our survey, 19 universities from Asia (86.4%) and 3 universities from Africa (13.6%) (Figure 1).

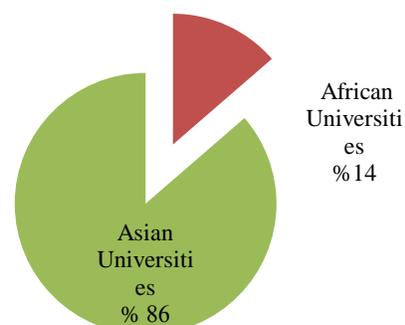


Fig. 1: Distribution of respondents in Asian and African Universities.

Most of the respondents were male (63.63%). The highest level of education in about 77.27% (17) of the respondents were Ph.D. and remaining were master degree holders. Regarding the country of qualification, 9 participants (40.90 %) were graduated from United Kingdom. Sociodemographic information of pharmacy professional from different colleges of pharmacy of Asia and Africa is shown in Table 1.

The results of this study displayed that there are favorable attitudes for universities toward pharmaceutical care education in Asian and African Universities. All the universities participated in the survey provide pharmaceutical care courses.

According to the second question, 21 universities respond that Pharmaceutical care course(s) is considered as a required course. However, only one university said that the course is elective for BSCs students and required for PharmD students.

The pharmaceutical care course provided not only to PharmD students, but also provided to Bachelor degree in pharmacy (7 Universities reported that it is provided for BSCs only, 8 universities for PharmD and 7 universities said that the course provided for both BSCs and PharmD students).

The course contains both theoretical and practical part only in 12 universities (54.54%) and this is the ideal situation because the curriculum of pharmacy should include education and training to provide pharmacists with the necessary skills and knowledge for the application of pharmaceutical care.

There are topics covered in the course in more than 90 % of universities such as introduction to pharmaceutical care, assessment, drug therapy problems and care plan.

Some lectures need more attention like introduction to health system pharmacist (63.63%), professionalism & ethics (68.2%) and medication safety (72.72%). These topics should be covered in all of the universities because all of the pharmacists should know their responsibilities in the practice settings, should know the regulations and ethics of pharmacy profession and should know the safety of medications.

**Table 1:** Pharmacy professional sociodemographic information from different colleges of Pharmacy of Asia and Africa.

Characteristics	Participants (n= 22)	%
<i>Gender</i>		
Male	14	63.63%
Female	8	36.37%
<i>Age</i>		
31-40	12	54.54%
41-50	9	40.90%
51-60	1	4.54%
<i>Highest level of education</i>		
Master Degree	5	22.73%
Ph. D.	17	77.27%
<i>Current Position</i>		
Lecturer	5	22.73%
Assistant professor	10	45.45%
Associate professor	5	22.73%
Professor	2	9.09%
<i>Region/ Nationality</i>		
<i>Asia</i>		
Jordan/ Jordanian	4	18.18%
India/ Indian	3	13.64%
Palestine/ Palestinian	2	9.09%
Thailand/ Thai	2	9.09%
Nepal/ Nepalese	1	4.54%
Malaysia/ Malaysian	1	4.54%
Lebanon/ Lebanese	1	4.54%
Philippine/ Philipinian	1	4.54%
Indonesia/ Indonesian	1	4.54%
<i>Africa</i>		
Egypt/ Egyptian	3	13.64%
Sudan/ Sudanese	1	4.54%
Nigeria/ Nigerian	1	4.54%
Tanzania/ Tanzanian	1	4.54%
<i>Country of Qualification</i>		
United kingdom (U.K.)	9	40.90%
India	3	13.64%
Malaysia	3	13.64%
Jordan	2	9.09%
Sudan	1	4.54%
Thailand	1	4.54%
France	1	4.54%
Indonesia	1	4.54%
Philippine	1	4.54%

Also, there are topics not included in the pharmaceutical care course, such as communication skills to work as a team collaboratively with the patient and health care workers. Also pharmaceutical calculations are an important part that should be included in the course to calculate doses correctly

The main resources and references used in preparing pharmaceutical care lectures were textbooks, all of the universities used textbooks as resource alone or with other resources, and some universities used journal articles (54.5%) and the internet (81.81%). In 72.72% of Universities, the instructors were Clinical pharmacist, in one university the instructor wasn't clinical

pharmacist, and the instructors were both clinical pharmacists and pharmacists from other departments were 18.18%. According to the method of assessment of the course, the major method was the case studies (90.9 % of the universities) followed by written exams (86.36 %). We suggest also adding other methods of assessment such as OSCE examinations. The Response to questions related to status of Pharmaceutical Care education in Asia and Africa is shown in Table 2.

**Table 2:** Response to questions related to status of Pharmaceutical Care education in Asia and Africa.

Variables/Questions	Frequency (N=22)	%
<i>The pharmacy college program provides pharmaceutical care topics?</i>		
Yes	22	(100 %)
No	0	(0.00 %)
<i>The pharmaceutical care course considered as</i>		
Required	21	(95.45%)
Elective	0	(0.00 %)
Others (Elective for BSCs and required for PharmD)	1	(4.54%)
<i>The pharmaceutical care course provided to:</i>		
BSCs	7	(31.82%)
PharmD	8	(36.36%)
Both	7	(31.82%)
<i>The pharmaceutical care course considered as</i>		
Theoretical	9	(40.91%)
Practical	1	(4.54%)
Both	12	(54.54%)
<i>The topics that are covered in the course</i>		
Introduction to pharmaceutical care	21	(95.45%)
Introduction to health system pharmacist	14	(63.63%)
Subjective & objective information	17	(77.27%)
Assessment	20	(90.91%)
Drug therapy problem	20	(90.91%)
Adherence	19	(86.36%)
Care plan	21	(95.45%)
Follow up & Evaluations	19	(86.36%)
Documentations & Presentation	19	(86.36%)
SOAP Note format	16	(72.72%)
Professionalism & Ethics	15	(68.18 %)
Medication safety	16	(72.72 %)
Formal Case Presentation of pharmaceutical care plan	16	(72.72 %)
<i>The main references and resources used in preparing lectures</i>		
Textbooks	22	(100 %)
Journal Articles	12	(54.54%)
Internet	18	(81.81%)
<i>The instructors' specialty</i>		
Clinical pharmacist	16	(72.72 %)
Non-clinical pharmacist	2	(9.1 %)
Both	4	(18.18 %)
<i>The method of assessment of pharmaceutical care course</i>		
Seminars or presentation	16	(72.72 %)
Written Exams	19	(86.36 %)
Projects/Assignments	15	(68.18 %)
Case Studies	20	(90.91%)

About 19 universities (86.4 %) mentioned suggestions for the improvement of Pharmaceutical care course, the suggestions were to increase the practical part, to increase the number of staffs, to increase the credit hours for the course and to increase the hospital visits.

## CONCLUSION

There are favorable attitudes for universities included in the survey toward pharmaceutical care education. The curriculum of pharmacy should include theoretical and practical part to provide the required knowledge and skills. There are few topics that has not included in the pharmaceutical care course. We think that these topics are necessary for the application of pharmaceutical care like communication skills and pharmaceutical calculations.

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