Clinical Study

Development of a community pharmacy program in Iran with a focus on Logbook application

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ABSTRACT

Objective: Community pharmacy educational program needs to be completed because of gradual transition in pharmacist responsibilities from traditional roles such as dispensing and compounding medications to give professional patient-based care. To further develop the community pharmacy program, this study was designed to involve Logbook in pharmacy training courses.

Methods: For this study, at first, Logbook for community pharmacy practice was designed to develop educational program of this course in Isfahan University of Medical Sciences. Thereafter, in a 6-month prospective study, this Logbook was incorporated to the pharmacy practice course of Doctor of Pharmacy (PharmD) educational program, and students' feedbacks were gained after final examination to improve the Logbook accordingly. Students described their opinions about different sections of this program as unnecessary, necessary, and necessary with revision.

Findings: A total of 65 PharmD students were included in this study. More than 90% of the students gave complete answers to the evaluation of this pharmacy training program. The results showed that more than 70% of students considered this program of pharmacy training was necessary (with or without revisions) in PharmD courses. They recommended more time to be included for prescription reading and analyses during these courses.

Conclusion: Developing pharmacy training program by using Logbook which was presented in this study was considered necessary and efficient for PharmD students. However, it is a prototype system, and we are committed to using initial students and preceptors' feedbacks to improve Logbook in future courses.

Keywords: Doctor of pharmacy; Logbook; pharmacy practice

INTRODUCTION

Doctor of Pharmacy (PharmD) is a 5 or 6 year professional degree program in Iran to prepare the students in scientific, technical, and patient-care aspects of the pharmacist profession.[1,2] Although the United States is the epitome of PharmD program development, now pharmacy curriculum have been expanded in many developing countries such as Iran to form a practice-based model for student education.[1,3,4]

Multidisciplinary curriculum prepared for pharmacy students could help them differentiate their position from simply dispensing of drugs to provide more modern and clinical services including reviewing medications for safety and efficacy, and providing drug-related consult for patients.[5,6] These gradual

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changes in professional tasks of pharmacists requests more attention to promote pharmacy educational program accordingly.[7]

Pharmacy practice is one of the most important courses in pharmacy educational program, which has a significant impact on the subsequent professional role of pharmacists in the healthcare services.[8] The pharmacy training program is a comprehensive bridging program designed to help pharmacy students achieve the skills and competencies required for performance and practice in the field of pharmacy after graduation.[9,10]

Though some previous studies were conducted to develop different community pharmacy-based management programs such as a smoking cessation, diabetes care, or asthma management, only few studies focused on development of educational program of community pharmacy courses.[11-13]

Application of Logbook primarily for university students could facilitate and enhance individual and collaborative learning in educational learning technology. Therefore, some universities applied Logbook in their educational program.[14,15]

Though the interactive application of Logbook was carried out in different medical education program, but, to the best of our knowledge, Logbook was not applied in community pharmacy courses not only in Iran, but also we have not found any publication that mentioned using community pharmacy Logbook in their educational program until now. Therefore, the aim of this program was to develop the pharmacy practice program with the implementation of Logbook, while still maintain key specialty education about pharmacy training services. In addition, we were committed to use feedback to improve future programs.

METHODS

In this study, at first, Logbook for pharmacy practice was designed, and thereafter, in a prospective study, this Logbook was incorporated to the 6-month pharmacy practice course (2014–2015) of PharmD educational program held in Isfahan University of Medical Sciences (IUMS). Finally, students' feedback was gained after pharmacy practice final examination to improve Logbook accordingly.

Pharmacy practice courses were designed in three different packages by our faculty during the last 2 years of PharmD educational program, which have satisfied the structured pharmacy trainings necessary for professional PharmD degree in Iran.

Each package is conducted for 5 months. The first and second packages consist of 50 h of theoretical lectures and 60 h of practical training in the field of community pharmacies affiliated to IUMS. However, practical trainings of these two packages were different. The focus of the first practical training is to familiarize the students with different dosage forms, necessary information of drug monograph, prescription reading, and analyzing; while, in the second pharmacy training course, students give medications to patients with supervision of their preceptor (clinical pharmacist). Finally, in the last course of pharmacy training, students give medications to patients without supervision of clinical pharmacists, although pharmacists are available in pharmacies for minor supervision on the process of giving medications to patients.

In this study to implement Logbook of pharmacy practice, at first, the draft of Logbook was prepared according to literature searches for the similar Logbooks used in different settings such as hospital pharmacy or clinical pharmacy.[14,16] However, because of different settings that these Logbooks were used in and the various educational purposes of these Logbooks, details of each section were different. Subsequently, this draft was presented to Education Development Organization (EDO) of Pharmacy Faculty of IUMS and with some revisions it was accepted by EDO.

Thereafter, the correspondence of pharmacy training program convened a panel of 6 academic members of Clinical Pharmacy and Pharmacy Practice Department as an executive group (see acknowledgment for list of executive team) to explain about the performance of this project. Minor revisions were also considered based on panel suggestions, and final Logbook was approved in our department.

Final Logbook was implemented for PharmD students as a part of practical training of the first pharmacy practice program which was started from September 2014. Our practical education model had multidimensional parts which were documented in community pharmacy Logbook.

In each practical section, one preceptor has responsibility of four or five students. Comparison of various medicinal products was learned and documented in Logbook by answering to the related questions. This section was designed to cover learning of dosage forms, brand names available in Iran, indications, adverse reactions, drug or food interactions, pregnancy and lactation considerations, and medication pricing.

In the second part, different prescriptions (at least 15 prescriptions) were reviewed, and students had opportunities to showcase their knowledge in practical settings. At least two prescriptions were

selected in each section and were written in related part of Logbook with at least five tips regarding their medications.

Each student also dispensed at least five prescriptions during this program and charted them in the third section of Logbook. Preceptors (academic members of Clinical Pharmacy and Pharmacy Practice Department who were involved in executive team) also asked the students different questions regarding medications or insurance rules. Students then entered these questions with their answers in the fourth section of the Logbook.

In addition, students wrote the summary of how to work with drug information handbooks, related database such as UpToDate, and the software used in pharmacies for drug handling. Moreover, students completed the Logbook by adding the summary of 1-day seminar of practical pharmacy management principles which was held in collaboration with the manager of IUMS-affiliated pharmacies.

Final examination was conducted in two parts: Theory and pharmacy training. In practical examination, Objective Structured Field Examination was designed; hence, each student was examined in three different stations: First: Reading prescription and explaining about the medications and recommendations for use. Second: Explain about medical devices such as inhalers. Third: Find the answers of medical questions by using of handbook or medical databases.

After final examination, students described their opinions about different sections of this program by answering the questionnaire added to the end of the Logbook. They opined if each section was unnecessary, necessary, and necessary with revision for pharmacy practice course.

All data were entered in Microsoft Excel 2003 (Microsoft, Redmond, Washington), and percent of each group with explanation of that were considered in result section.

RESULTS

A total of 65 PharmD students were included in our study. Most of them were female (42 out of 65, 64.6%), with the average age of 23 years. More than 90% of the students answered all questions of the evaluation of this pharmacy training program. Their feedback are summarized in Table 1.

The remaining students (6 out of 65, 9.2%) gave overall feedback, which showed that 4 of them were satisfied with this program. Two students declared this program as not suitable for pharmacy training because

Table 1: Evaluation of pharmacy training program with the focus on Logbook implementation by PharmD students (*n*=59)

Parameters*	Unnecessary	Necessary	Necessary with revision
Logbook items			
Reviewing medications in pharmacy field by answering to the related questions	-	9 (15.2)	50 (84.8)
Training of prescription reading and analysis	-	33 (55.9)	26 (44.1)
Dispensing prescription	12 (20.3)	47 (79.7)	-
Answering to preceptor questions	11 (18.6)	48 (81.4)	-
Working with drug information hand book and medical databases	7 (11.9)	52 (88.1)	-
Acquaintance with pharmacy management and software of drug handling in pharmacy	-	45 (76.3)	15 (25.4)
Performance of OSFE for final examination	6 (10.2)	31 (52.5)	22 (37.3)

*Each item shows *n* (%) of students. OSFE=Objective Structured Field Examination, PharmD=Doctor of Pharmacy

filling of Logbook was time consuming and did not promote their expertise in the field of pharmacy.

The most suggested revisions of Logbook were related to the time consuming Logbook filling during practical section of pharmacy training, especially to find the answers of medication use questions. Students recommended, assigning more time for reading and analyses of prescriptions. In addition, they proposed to increase the time of practical pharmacy management section in this course.

The preceptors of practical part of pharmacy training were also pleased with this program. The uniformity and specified items for each section of practical training were declared the strong points of this program, but the limited time of students in each section was the fact that preceptors considered to be revised in the next version of Logbook.

DISCUSSION

At present, most learners are not confined to post school education and work-based learning, but other informal learning activities attract more attention and contribute toward the attainment of learning goals.[8,10,17]

Because of the important role of pharmacy practice program in development of pharmacist state in healthcare system, it seems necessary to move forward in pharmacy practice initiative education in Iran.[18] We designed different sections of pharmacy

training and Logbook to document practical training held in community pharmacies. It was developed using problem-based learning and teaching, team work, and personal learning management.

Incorporation of Logbook in community pharmacy program could offer the tool to improve distributed group working.[19] In addition, application of Logbook could facilitate and enhance collaborative learning within small groups in community pharmacy setting, knowledge sharing, learning management, and personal development planning.[19]

This program indirectly increases peer collaboration of students through greater personal organization and local access to internet and book resources.

Collaborative tool is not a new idea in education; however, to the best of our knowledge, it is the first time that Logbook was incorporated in community pharmacy practice courses in Iran. However, previous studies showed the efficient involvement of Logbook in hospital and clinical pharmacy programs in Iran.[14,16]

Our results showed that most students were satisfied with different sections of the pharmacy training program, but they were uncomfortable with documenting these practical training in their Logbooks. This may be due to the fact that our students were not familiar with Logbook before and its filling was time consuming for them. When considered that, it was the first experience of these students to fill the Logbook; it can be considered acceptable.

However, the current program was conducted only for the first package of the pharmacy training program in this study, but after evaluation of the pros and cons, it will also develop to the other pharmacy training courses.

Since we expected PharmD students to be able to read and analyze prescriptions easily after pharmacy training; in the revised version of Logbook, we plan to allocate more time for this part. We let the students to fill some parts of Logbook out of pharmacy field to have more time for prescription reading and analyses.

Development of education in Iran is still in its infancy and interactive Logbook presented in this study is still a prototype system. Therefore, we are committed to using feedback gained from the initial release to improve Logbook in future courses. In addition, this study was also limited because, although improving knowledge and clinical practice of students was the final goal of pharmacy training courses, the efficacy of this program was not evaluated in this current study, and further studies will be needed.

AUTHORS' CONTRIBUTION

The author prepared the logbook and implemented that in the pharmacy practice course. Evaluations of logbooks were performed by the author and finally the manuscript was written and submitted to the journal.

Conflicts of interest
There are no conflicts of interest.

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