Volume 2 (5), 2014, Page-367-373
e-ISSN: 2348-6465

Pharma Health Sciences

International Journal of Pharma Research and Health Sciences

Available online at www.pharmahealthsciences.net

Original Article

# Attitude on Clinical Pharmacy Training: The Case of Haramaya University, Ethiopia

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ARTICLE INFO

Received: 12 Aug 2014
Accepted: 05 Oct 2014

ABSTRACT

**Background:** Pharmacy profession has undergone a significant paradigm shift with movement away from a traditional distributive role toward a clinical and patient oriented practice, which has intensified the focus on teamwork and the importance of inter professional relationships. **Objective:** To assess attitudes of instructors and graduating class students on challenges of clinical pharmacy training in Haramaya University. **Methods:** a prospective cross-sectional study design was used. The data was collected using pre-tested, self-administered structured questionnaires which will have socio-demographic variables, work load, total credit hours taken, engagement on clinical training, presences of advisor, receiving comment from clinical pharmacists and role model clinical pharmacist. It was also contain questions on the different challenges with five scale likert scale. The collected data was cleaned, coded, entered to Epi data. The entered data was transferred to SPSS window version 16 statistical software. Frequencies, cross tabs, and non parametric Mann Whitney test was done to analyze the data. **Result:** from a total of 43 graduating pharmacy students 37 were included in the study with a response rate of 80%. Among them 22(59.5%) were female. The mean age of students was 22.81 ±0.877. 23 of the students were joined pharmacy school by their own interest. 14 (37.8%) of the students were strongly disagreed that the curriculum was designed taking the countries current pharmacist need. 11(29.7%) of students were strongly disagreed that the class rooms were designed to facilitate the teaching-learning process. Majority of students about 27(73.0%) were strongly disagreed that the school had a well organized laboratory. 12(32.4%) and 16(43.2%) of students were strongly disagreed and disagreed that prescribers were willing to hear their comments while 14(37.8%) and 12(32.4%) of them strongly disagreed and disagreed that prescribers were accepting their comment. From 22 instructors working in the school only 20 responded the questionnaire which made the response rate 90.9%. Among them 17 were males. Eight of the instructors were aged 24 and 25 years and the mean age was 26.65. Nine of them were first degree holders. Only 4 of the instructors were strongly disagreed that the curriculum was designed taking the countries current pharmacist need. Nine of the instructors were strongly disagreed that there were sufficient reference materials. C**onclusion:** clinical pharmacy training is challenging in conditions where instructors and students believe there are no sufficient reference materials and the prescribers are not cooperative.

**Key words:** clinical pharmacy training, mentor, hospital exposure, community attachment sites

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## 1. INTRODUCTION

The public's growing awareness of the complexities of the healthcare delivery system, rapid developments in technology, constantly increasing health related issues,

and cost of the therapy changed the roles and functions of pharmacists[1]. Pharmacists were focused on dispensing and compounding till 20th century, but now, pharmacy profession has undergone a significant paradigm shift with movement away from a traditional distributive role toward a clinical and patient oriented practice, which has intensified the focus on teamwork and the importance of inter professional relationships[2].

Pharmacists can influence health outcomes and public health in a variety of ways. Pharmacists in community, hospital, and other settings promote cost-effective use of medicines, reduce morbidity and mortality, reduce avoidable hospital admissions, reduce medication errors, improve rational use and prescribing of medicines, and increase access to healthcare and medicines, particularly for underserved populations[3,4].

The transformation of pharmacy profession towards increased patient care orientation is definitely one of the new experiences being faced in developing countries. The challenges in developing countries include a limited number of sites, low-quality sites, absence of training assessment, and variations in pharmacy practice models within the same country[5].

Students should join the department with full knowledge about the scope of clinical pharmacy training. Only 33.3% of students are aware of the scope of pharmacy before admission to pharmacy program[2]. Acceptance of clinical pharmacy by clinical pharmacy students has great impact on the training.

The objective of this study was to identify the attitude of graduating pharmacy students and pharmacy school instructors on challenges of clinical pharmacy training in Haramaya University.

## 2. METHODS AND MATERIALS

### *2.1 Study area and period*

The study was conducted in Haramaya University School of pharmacy from February 20-April 20, 2014.

Haramaya University is one of the most prominent and prestigious universities in Ethiopia. Formerly known as Alemaya University, was established with the initiative of Emperor Haile Selassie in 1954 . The pharmacy school was established in 2007 (1999 E.C.) under the college of medical sciences. As part of the nationally harmonized move to revise the curricula of Pharmacy education in Ethiopia, the school revised its curriculum in 2008; the four year training program has been changed to five years training. The new curriculum benchmarked the global context of pharmaceutical education and practice adopting patient-centered philosophy as its central value.

### *2.2 Study design*

A prospective cross-sectional study design was employed.

### *2.3 Population*

*2.3.1 Source population*

Source population was all pharmacy students, and pharmacy school instructors.

*2.3.2 Study population*

All graduating class pharmacy students and pharmacy school instructors who handle or handled major courses

### *2.4 Inclusion and Exclusion criteria*

Inclusion criteria:

- Graduating class of clinical pharmacy students ($5^{th}$ year).

Exclusion criteria:

- Students below $5^{th}$ year
- Instructors not handling/handled major courses

### *2.5 Sample size and sampling technique*

*2.5.1 Sample size:*

All study populations were included in the study.

*2.5.2 Sampling technique*

Since all of the study populations were covered no sampling technique was utilized.

### *2.6 Data collection and measurement*

*2.6.1 Variables*

**Independent variables**

- Socio-demographic variables (Age, sex, educational level).
- Work load
- Total credits hours taken
- Engagement in clinical training
- Presence of advisor
- Receiving comment from clinical pharmacists/students
- Role model clinical pharmacists

**Dependant variables**

Attitude of instructors and students

*2.6.2 Data collection instrument*

The data was collected using pre-tested, self-administered structured questionnaires which have socio-demographic variables, work load, total credit hours taken, engagement on clinical training, presences of advisor, receiving comment from clinical pharmacists and role model clinical pharmacist. It was also contain questions on the different challenges. The questionnaire was prepared in English.

*2.6.3 Data collection process and Data collectors*

The questionnaire was disseminated for respondents by the principal investigator and collected after a week. Two incomplete questionnaires was sent back for the respondent to fill the remaining points and collected again after completion.

***2.7 Operational Definition***

**Adequate training site**: is the environment or site to meet requirement for the provision of adequate training arrangement and supervision of qualified persons.

**Well trained mentor:** A Professional who fulfil educational requirement and have documented evidence to be accepted as pharmacy school instructor.

**Engagement in clinical training:** involvement and participation of pharmacy school instructors in Hospital based patient centred teaching.

***2.8 Data Analysis***

The collected data was cleaned, coded, entered to Epi data. The entered data was transferred to SPSS window version 16 statistical software. Frequencies, cross tabs, and non parametric Mann Whitney test was done to analyze the data.

***2. 9 Data quality control***

Questionnaire was pre-tested on 4$^{th}$ year students and instructors who handled supportive courses. It was found to be good for data collection without modification.

***2.10 Ethical clearance***

Ethical clearance was obtained from Haramaya University School of pharmacy. Letter for cooperation from each level was obtained. All respondents were given written informed consent in English.

## 3. RESULTS

**Socio-demographic characteristics**

From a total of 43 students, 37 of them were included in this study with a response rate of 80%. Among them 22(59.5%) were female. The mean age of students was 22.81 ±0.877 (Table1).

**Table 1: Socio-demographic characteristics of Graduating class pharmacy students, Haramaya University from January 10 to March 5, 2014**

| Socio-demographic characteristics | | Frequency (%) |
|---|---|---|
| **Sex** | Female | 22(59.5) |
| | Male | 15(40.5) |
| **Age** | 21 | 1 |
| | 22 | 13(35.1) |
| | 23 | 17(45.9) |
| | 24 | 4 |
| | 25 | 2 |

From the total of 22 instructors, 20 instructors were involved in this study with a response rate of 90.9%. Among them 17 were males and 3 of them were females. Eight of the instructors were aged 24 and 25 years and the mean age was 26.65. Fourteen of them were first degree holders (Table2).

From the total of 37 students 23 of them were joined pharmacy department by their interest (Figure1).

**Table 2: Socio -demographic characteristics of instructors' in school of pharmacy, Haramaya University, from January 10, to March 5, 2014.**

| Socio demographic characteristics | | Frequency |
|---|---|---|
| Sex | Male | 17 |
| | Female | 3 |
| Age | 23 | 2 |
| | 24 | 4 |
| | 25 | 4 |
| | 26 | 2 |
| | 27 | 1 |
| | 28 | 2 |
| | 29 | 1 |
| | 30 | 1 |
| | 31 | 1 |
| | 32 | 1 |
| | 34 | 1 |
| Educational status | BP harm | 9 |
| | MSc | 11 |

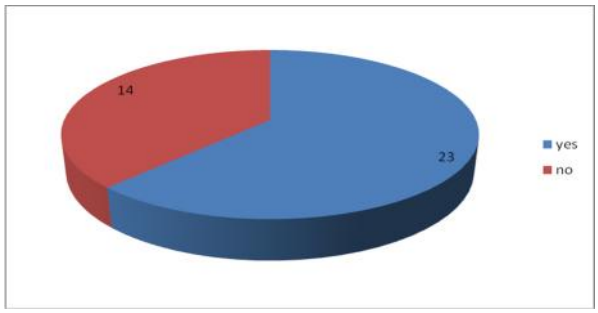


**Fig 1: The number of graduating class students' who joined pharmacy department based on their interest, Haramaya University, from January 10 to March 5, 2014.**

## Attitudes of students' on challenges of clinical pharmacy training

14 (37.8%) of the students were strongly disagreed that the curriculum was designed taking the countries current pharmacist need. Concerning the assigned instructors 16(43.2%) of students were neutral that instructors were competent. Nine of the participants were strongly disagreed about the availability of sufficient reference materials and about 11(29.7%) of students were strongly disagreed that the class rooms were designed to facilitate the teaching-learning process. Majority of students about 27(73.0%) were strongly disagreed that the school had a well organized laboratory and 17(45.9%) of them were neutral about that community attachment sites were appropriately selected. 12(32.4%) were strongly disagreed that they had pre-clerkship hospital exposure. 19(51.4%) of the students had neutral attitude that the mentors were well trained and experienced. Fifteen (40.5%) and 18(48.6%) of respondents were neutral that the mentors were punctual and gave them appropriate comment at clerkship site, respectively. 12(32.4%) and 16(43.2%) of students were strongly disagreed and disagreed that prescribers were willing to hear their comments while 14(37.8%) and 12(32.4%) of them strongly disagreed and disagreed that prescribers were accepting their comment (table3).

**Table 3: Attitudes of graduating class students' on challenges of clinical pharmacy training, Haramaya University, from February 10 to April 10, 2014.**

| Asked statement | Frequency (%) | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| The curriculum is designed taking the countries current pharmacist need | 14 (37.8) | 8 | 6 | 2 | 7 |
| The number of students in your class is appropriate size for teaching-learning process | 7 | 3 | 4 | 9 | 14 (37.8) |
| The assigned instructors are competent. | 6 | 3 | 16 (43.2) | 9 | 3 |
| There are sufficient reference materials | 9 | 8 | 8 | 8 | 4 |
| The class rooms are designed to facilitate the teaching-learning process | 11 (29.7) | 10 | 7 | 5 | 4 |
| The school has a well organized laboratory. | 27 (73.0) | 5 | 3 | 2 | 0 |
| Community attachments sites are appropriately selected. | 5 | 7 | 17 (45.9) | 5 | 3 |
| I have pre-clerkship hospital exposure | 12 (32.4) | 6 | 9 | 7 | 3 |
| The clerkship hospital sites are sufficient for the training | 7 | 8 | 11 (29.7) | 10 (27.0) | 1 |
| The number of students in clerkship site give you a sufficient chance of practice | 11 (29.7) | 6 | 12 (32.4) | 3 | 5 |
| The clerkship mentors are well trained and experienced | 5 | 4 | 19 (51.4) | 7 | 2 |
| The mentors are punctual | 3 | 9 | 15 (40.5) | 8 | 2 |
| The mentors give me appropriate comment | 2 | 5 | 18 (48.6) | 9 | 3 |
| The prescribers are willing to hear my comment | 12 (32.4) | 16 (43.2) | 7 | 2 | |
| The prescribers accept my comment | 14 (37.8) | 12 (32.4) | 9 | 2 | |

1=strongly disagree,2=disagree, 3=fair, 4=agree and 5=strongly agree

## Attitude of instructors' on challenges of clinical pharmacy training

Only 4 of the instructors were strongly disagreed that the curriculum was designed taking the countries current pharmacist need. Nine of the instructors were strongly disagreed that there were sufficient reference materials. 15(75%) of the instructors were strongly disagreed that the school had no problem in teaching aids and demonstration materials. Majority of instructors 17(85%) of them were strongly disagreed that the school had well organized laboratories. Nine of them were neutral that community attachments sites were appropriately selected and the clerkship hospital sites were sufficient for the training. 8 of the instructors were disagreed that students had good academic background and 7 instructors had neutral attitude that students were enthusiastic for the field (table 4).

**Table 4: Instructors' attitude on challenges of clinical pharmacy training, Haramaya University, from February 10 to April 10, 2014.**

| Asked statements | Frequency (%) | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| The curriculum is designed taking the countries current pharmacist need | 4 | 5 | 6 | 5 | 0 |
| The number of students in your class is appropriate size for teaching-learning process | 3 | 1 | 4 | 5 | 7 |
| There are sufficient reference materials | 9 | 6 | 5 | 0 | 0 |
| The school has no problem in teaching aids and demonstration materials | 15 (75) | 5 | 0 | 0 | 0 |
| The class rooms are designed to facilitate the teaching-learning process | 4 | 4 | 5 | 6 | 1 |
| The school have well organized laboratories | 17 (85) | 2 | 1 | 0 | 0 |
| Community attachments sites are appropriately selected | 4 | 1 | 9 | 6 | 0 |
| The clerkship hospital sites are sufficient for the training | 3 | 5 | 9 | 1 | 2 |
| The students are enthusiastic for the field | 1 | 4 | 7 | 4 | 4 |
| The students have a good academic background | 4 | 8 | 5 | 3 | 0 |
| The work load is manageable | 0 | 1 | 7 | 8 | 4 |
| I have my own academic freedom | 0 | 1 | 2 | 10 | 7 |
| The staff members are cooperative | 0 | 1 | 5 | 4 | 10 |
| The University policy is suitable for the implementation of the curriculum | 1 | 5 | 8 | 5 | 1 |
| There are no financial constraints for the implementation of the curriculum | 7 | 6 | 6 | 1 | 0 |

**1=strongly disagree,2=disagree, 3=fair, 4=agree and 5=strongly agree**

## Associated factors affecting students' attitude on challenges of clinical pharmacy training

Having role model instructor was the only factor that had association with students' attitude on challenges of clinical pharmacy training 53.5 (P=0.000) by Mann Whitney test.

**Table 5: Associated factors affecting students' attitude on challenges of clinical pharmacy training, Haramaya University from January 10 to March 5, 2014**

| Factors | | Mann-Whitney (P-value) |
|---|---|---|
| **Sex** | Male<br>Female | 119.5 (0.158) |
| **Joined pharmacy by interest** | Yes<br>No | 126.0(0.279) |
| **Have advisor assigned by school** | Yes<br>No | 148.0(0.948) |
| **Have role model pharmacist** | Yes<br>No | 53.5 (0.000) |
| **Choose pharmacy if given 2nd chance** | Yes<br>No | 113.5 (0.657) |

## 3. DISCUSSION

Students should join pharmacy by interest to be fruit full in their future career. In the current study only 23(62.1%) of students were joined pharmacy by their interest. According to similar study from Pakistan about 68.6% of students were joined pharmacy by personnel interest[1].

Developments in pharmacy education are being implemented in many countries worldwide. The current study showed that 14 and 8 of students strongly disagree and disagree that the curriculum was designed taking the countries current pharmacist need. This finding contradicts with the current trend in shift of pharmacy training which was a change towards clinical patient oriented trainings. For example, in South and South East Asia region the course of education and curriculum changes degree title and duration of training set up challenges in acceptability of pharmacy

education but clinical pharmacy training was given[5]. This difference might be due to the fact that the curriculum of clinical pharmacy training in Ethiopia is recently started or lack of awareness of students towards the curriculum.

Number of students in class rooms should be suitable for teaching-learning process. Accordingly the current study about 14(37.8%) of student were strongly agreed that the number of students in their class were appropriate size for teaching-learning process. Instructors had a great role in the training to see qualified students. In this study about 16 (43.2%) of students were neutral that the assigned instructors were competent. It is difficult for many students to understand what is involved in phenomena such as contact hours, office hours, one-on-one teaching, mentoring, test preparation, development of a new series of notes and topics for a course, working toward promotion, writing publications, grant submissions, and the existence of different stages of a faculty member's career [6].

The community attachments sites should be appropriately selected. As the current study showed that 17(45.9%) of them were neutral that attachments sites were appropriately selected. The pre-clerkship hospital exposure of students and also clerkship hospital sites should give sufficient chance of practice for students. Among the study participants, 12(32.4%) of them were strongly disagreed that they had pre clerkship hospital exposure while 11 and 10 of students were neutral and agree that the clerkship hospital sites were given them sufficient chance of practice respectively. Schools of pharmacy can and should provide students with a breadth of experiences in many areas of practice. However, by design, these experiences are relatively short (usually 4 to 6 weeks) and occur in a variety of settings – each with its own patient care practice procedures, technology, and culture[7].With increase in the number of students, the challenge is finding enough good quality preceptors and sites[8].

The students attitude towards their clerkship mentors indicates that about 15(40.5%) and 18(48.6%) were neutral that the mentors were punctual and give them appropriate comment respectively. In similar study less than a third of the student (32.3%) strongly agreed or agreed that they were satisfied with the feedback they received [9].

Clinical pharmacy students should provide pharmaceutical care service in hospital clerkship sites. To achieve these smooth relationships between prescribers and students' is mandatory. Among the study participants 12(32.4%) of them strongly disagreed and 16(43.2%) were disagreed that prescribers are willing to hear comments while 14(37.8%) and 12(32.4%) were strongly disagreed and disagreed that prescribers were accepting comments respectively. The study done in Jordan indicates that acceptance rate for pharmacist recommendation is 69.4% [10]. In northern university Boston 94.9% and 98.7% of providers indicated that student pharmacist recommendations were appropriate and accurate respectively[10]. These differences might be due varied level of Economic, political and health care delivery system of the countries as well as the infant stage of growth of clinical pharmacy training in Ethiopia or new exposure of clinical pharmacist in clinical setting [10, 11].

Instructor's attitude towards students academic background indicates 8 of them were disagreed that students had good academic background and also 7 of them were neutral that students were enthusiastic for the field. According to similar study done in Boston 96.2% providers reported that student pharmacists were prepared for medical rounds and 87.3% reported that student pharmacists were active participants in

patient care[10]. Majority of instructors 5(75%) of instructors were strongly disagreed that the school had no problem in teaching aids and demonstration materials and 17(85%) of them were strongly disagreed that the school had well organized laboratories.

## 4. CONCLUSION

Significant number of students joined pharmacy without interest. Majority of the students the students do not agree the current curriculum considers the countries pharmacist need. The school's facility for teach-learning process was not acceptable by both instructors and students. The team integration between pharmacy students and prescribers was very poor.

## 5. LIMITATION OF THE STUDY

The sample size of the study was too small to perform parametric tests for identification associated factors. So, only non parametric test was done.

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