Short Communication

Participation of students in the designing and evaluation of pharmacy curriculum: A Cross-Sectional Study

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Abstract
Background: The curriculum of pharmacy being followed in different institutions is devised, written and established by the members of institutional ‘Board of Studies’ and/or professional councils. No doubt, educators and professionals are sure to have a comprehensive approach to this topic, but pharmacy students, with the help of their own educational experience, are potentially influential to offer guidance on student resources and facilities and are in a good position to assess the different aspects of pharmacy curriculum.

Aims: The objective of this study is to give an account of a survey of 678 pharmacy students regarding their assessment of the current curriculum of pharmacy education.

Method: We administered a cross-sectional survey to pharmacy students (n = 678) at three different institutes.

Results: Out of 678 students 566 (83.48%) students felt that the curriculum must be revised as it contains unnecessarily exhaustive theoretical details that should be replaced with practical aspects. Five hundred fifty four (81.71%) students demanded the introduction of the department of pharmacy practice in the present curriculum.

Conclusion: Pharmacy curriculum should be designed with student priorities and with active participation of students at every stage of its designing and implementation.

Keywords: Curriculum, Pharmacy, Student participation,

1. Introduction
Since its origination, pharmacy profession has undergone a number of modifications. Earlier it was a dispensing focused profession but in the modern era, it has become a patient focused profession. Nowadays the field of pharmacy has been introduced with various advancements to provide a better health care to the patients. Pharmacists are supposed to be responsible for the safe and effective use of medicines. It has been observed that approximately 50 % of the patients who visit a community pharmacy or a clinic have a drug therapy problem. Hospitalized patients also face a considerable number of preventable adverse drug reactions ¹. There has been a rapid rise in medical costs within the health care system². The role of the effective management of drug therapy for all patients has been assigned to the pharmacist. Now institutions of pharmacy have obligations to prepare graduating pharmacists for this role.

Presently, teaching of pharmacy in the most of the institutions of Karachi is lecture-based. A teacher, by delivering a lecture, does not actively engage the learners. It has been seen that the use of Problem Based Learning (PBL) can help the integration of basic and clinical science content and can initiate and promote active student learning ³. Therefore, a comprehensive reorientation of the curriculum, teaching methodology and assessment procedures seem to be required to make the teaching and learning of pharmacy need based. Educators and professionals are sure to have a comprehensive
approach to this topic, but pharmacy students, with the help of their own educational experience, are potentially influential to offer guidance on student resources and facilities and are in a good position to assess the different aspects of curricula as taught in different institutions of Karachi. Keeping all of the above mentioned facts and findings in mind, this study was designed to give an account of a survey of 678 pharmacy students regarding their assessment of the current curriculum of pharmacy education (Pharm.D. Program).

2. Methods

2.1. Survey Setting

The study was carried out in Karachi, from April 2011 to February 2013. The survey was conducted at two universities (one public sector and one private sector) and one college (private sector) located in different regions of Karachi. The public sector university was the Federal Urdu University of Arts Science & Technology (>500 Pharmacy students) and the private sector university was Hamdard University (>500 Pharmacy students). The private college was Jinnah College of Pharmacy (>300 Pharmacy students).

2.2. Calculation of Sample size: The following equation was used to calculate the size of the sample

\[ n = \frac{(Z^2 \cdot P (1-P))}{d^2} \]

Where \( n \) = size of the sample, \( Z \) = (Z statistics that corresponds to a selected confidence level), \( P \) = (expected occurrence), and \( d \) = (Precision) \(^4\)

In this study we have used \( Z = 1.96 \), \( P = 0.3 \) and \( d = 0.05 \). By putting these values in the equation, we obtained the sample size of 323. The size of the obtained sample was doubled because the design of the study was clustered in nature. \(^5\) As a result, the sample size became 646. The calculated sample size is often increased from 5 to 20% to compensate non-respondences. \(^6\) In our study, the sample size was increased by 5% to compensate non-responses. As a result the sample size became, \( n = 678 \). In the decision that how many surveys should be conducted at each institute, the calculated sample was divided by the number of clusters (3 institutes) involved in the study. \(^5\)

2.3. Sampling procedure

The participants of the study were recruited from the lecture halls and classrooms of the fourth year and the fifth year level of Pharm. D. program. The sampling was done following one-stage cluster sampling procedure. Randomization was not possible in the process of the recruitment of the students because of the limitations in the set-up of the different institutes, so the selection of the students was carried by convenient sampling. In this study, we used a questionnaire consisting of 26 questions each on curriculum and teaching/learning methods. The format of the questionnaire was the Likert’s five point scale. At each institute, the questionnaires were administered by our undergraduate students who had been trained in the interview process so that the biases could be avoided. \(^4\)

3. Results

In this study, we sampled six hundred seventy eight students. The students were sampled from three different institutes. Further details about the sampling and the background of the institutes are shown in Table-I.

<table>
<thead>
<tr>
<th>Institute</th>
<th>Type</th>
<th>Students sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamdard University</td>
<td>Private Sector</td>
<td>226</td>
</tr>
<tr>
<td>Jinnah College of Pharmacy</td>
<td>Private Sector</td>
<td>226</td>
</tr>
<tr>
<td>Federal Urdu University</td>
<td>Public Sector</td>
<td>226</td>
</tr>
</tbody>
</table>

Out of 678 students included in the study 566 (83.48%) students felt that the curriculum must be revised as it contains unnecessarily exhaustive theoretical details which should be replaced with practical aspects. Five hundred fifty four (81.71%) students demanded the introduction of the department of pharmacy practice in the present curricula of all faculties of pharmacy. Four hundred eighty seven (71.82%) students were of the opinion that the doctorate of pharmacy (Pharm.D. Program) was introduced with the sole purpose of producing effective patient care practitioners so pharmacology should be taught in close association with clinical situations that is teaching of pharmacology should be patient and disease oriented. Six hundred twenty two (91.74%) students thought that the methods and techniques being taught in practicals of all four departments viz. Pharmaceutics, Pharmacology, Pharmacognosy and Pharmaceutical chemistry need to be updated. Four hundred sixty eight (69.02%) students felt the need of more emphasis on recent advances in the diagnostic tests in the
teaching of Biochemistry and Pathology.

Three hundred five (89.97%) participants of the study thought that there must be pharmacy teacher training programs for all new joining teachers. Two hundred nine (61.65%) students responded that there must be introduction of Problem Based Learning (PBL) for the integration of basic and clinical science content and for the initiation and promotion of active student learning.

Five hundred thirty four (78.76%) participants preferred the use of the multimedia and other electronic means of teaching aids to blackboard or whiteboard. Six hundred four (89.08%) students suggested the distribution of handouts at the end of lectures for the reinforcement of the topic covered in a lecture.

Six hundred twenty four (92.03%) students believed that the objective type questions such as MCQ’s, BCQ’s and short answer questions are the best methods of examining students.

4. Discussion

The curriculum of pharmacy followed in all institutes of Karachi is more or less same. In this study most of the students felt that the present curriculum for pharmacy is more theoretical and the students feel that it should be revised. This feeling of our students is in accordance with the feelings of students in other countries8.

The responses of the participants show that they are more inclined to the practical approach of the profession. Apparently, the students are keen for maximum correlation between theory and clinical conditions. A large number of students thought that they should be trained by presenting real clinical situations. This coincides with the thoughts of an educationist9.

From the students’ responses we get the idea that current curriculum of pharmacy, being more theoretical, is not sufficient to produce need-based pharmacists. Conventional-theoretical lectures often suppress critical thinking and are unsuccessful in addressing differences in student learning styles. Such lectures make students passive recipients and fail to put knowledge into practice10. The teaching of pharmacy has gone through enormous metamorphoses over the past few years. Textbook based teaching or teacher-centred learning is gradually being replaced by student-centred learning 3.

Pharmacy education must be integrated and problem based. Current pharmacy education should have more emphasis on clinical impartment of knowledge. Participation of students in planning and evaluation of curriculum is not a new concept11, 12. It is well established that the students have ability to evaluate the efficacy of their own course. Therefore, it can be concluded that the pharmacy curriculum should be designed with student priorities and with active participation of students at every stage of its designing and implementation.

References