Development of a Pregraduate Subject at the School of Pharmacy at the University of Barcelona, Spain: “Tutelage Practice”

María A. March, José A. Gasquet, Cecilia R. Lastra and Eduardo L. Mariño

Clinical Pharmacy and Pharmacotherapeutical Unit, School of Pharmacy, University of Barcelona, Avda Joan XXIII s/n, 08028 Barcelona, Spain

This paper describes the development and implementation of a compulsory pregraduate subject at the School of Pharmacy at the University of Barcelona, Spain. The “Tutelage Practice” subject comes from the main subject “Residence” as described in the current legal regulations regarding the general guidelines for the development of the pharmacy syllabus recognized in Europe. The main aim of this subject is that all future pharmacy graduates acquire the knowledge, talent and attitude that are common in pharmacy and would put all European pharmacists on the same level. The subject has a minimum duration of six months and currently entails the daily presence of the student in a community pharmacy or in a hospital (the student’s choice). We call these places Receptor Centres. The “Tutelage Practice” subject is organized in two parts: (i) activities related to the presence of the student at the Receptor Centre (in this part students prepare a practice notebook called Diary Guide); and (ii) seminars and complementary activities.

INTRODUCTION

The aim of this paper is to describe the development and implementation of a compulsory pregraduate subject at the School of Pharmacy at the University of Barcelona, Spain. The degree in Pharmacy has been given at the School of Pharmacy at the University of Barcelona since 1845. The current syllabus given in this School is a five-year program and is divided into two parts: first and second year courses, and third, fourth and fifth year courses. Both parts include many compulsory subjects (see Figure 1).

There are 375 credits in the syllabus corresponding to 3750 teaching hours of which 1500 hours are in the first part and 2250 hours in the second. Table I shows how the distribution of these in each part. In the current syllabus, a theoretical credit is equivalent to 10 hours of theoretical classes, whereas a practical credit is equivalent to 10 hours of practical classes, 15 hours of laboratory classes or 20 hours of clinical practical classes. The student must pass at least 75 percent of the first part credits in order to progress to the second part. Teaching is organized in two terms.

DESCRIPTION OF THE SUBJECT

The subject “Tutelage Practice” comes from the main subject “Residence” as described in the current legal regulations regarding the general guidelines for the development of Pharmacy syllabus recognized in Europe. “Tutelage Practice” is established as a pregraduate main subject and is thus compulsory to all students. At the University of Barcelona, this subject is studied during both the first and the second term of the fifth year course of the syllabus. The subject has a minimum duration of six months and currently entails the daily presence of the student in a community pharmacy or in a Hospital (the student’s choice) during opening time.

The main aim of this compulsory subject is for all future pharmacy graduates to acquire the knowledge, talent and attitude which are common in pharmacy and to put all European pharmacists on the same level. We intend that the future pharmacist be sufficiently prepared to give a uniform answer to the society’s needs in all aspects related to medicines, mainly in the areas of community pharmacy, hospital pharmacy and first care pharmacy. For pharmacy students, on-the-job training is a vital stage in their development as members of the pharmacy profession, and even more so since the pharmacy profession embraced the concept of pharmaceutical care (1-6).

Basic Structure of the Subject

The subject “Tutelage Practice” was first given in the School of Pharmacy at the University of Barcelona in the academic year 1996-97. The University of Barcelona was also the first in Spain to include this subject in the syllabus. The “Tutelage Practice” is carried out in either a community pharmacy or a hospital. We call these places Receptor Centres. The Receptor Centres are community pharmacies or hospitals open to the public which have signed through the Council of Pharmacists’ Association of Catalonia an institutional agreement with the University of Barcelona to guarantee the fulfillment of the activities of this subject by the student. The credentials for the teaching capability of these Receptor Centres are given by the Pharmacists’ Association. The Pharmacists’ Association is an institutional organization whose membership consists of all the owners of a community pharmacy and all the heads of the departments of pharmacy in hospitals. The Association guarantees a proper pharmaceutical practice.

Each Receptor Centre has a pharmacist called the “Tutor Pharmacist”. Among other responsibilities, the Tutor Pharmacist is in charge of directly supervising the activities carried out by the student at the Receptor Centre and taking care of his/her training. In a community pharmacy, the Tutor Pharmacist is also the owner of the pharmacy, whereas in a Hospital he/she is the Head of the Department of Pharmacy. Tutor Pharmacists are trained in courses given by the Pharmacists’ Association. Neither the university nor the
Pharmacists’ Association pay these pharmacists a salary or compensate them economically.

An Associate Professor of Tutelage Practice has been assigned to each student. This professor is in charge of orientating the student and giving the seminars of the subject. The associate professors are working pharmacists and have been given a part-time contract by the University of Barcelona (the positions have been obtained through a public selection process). Each associate professor is in charge of supervising the same number of students, who have been assigned to him/her in an equal and random way.

The associate professors are also in charge of overseeing the student in the preparation of a practice notebook so-called “Diary Guide” which facilitates the assessment of the subject “Tutelage Practice”, both for the student and the Tutor Pharmacist. Its content is used as an orientation and general framework for the purposes of educational recognition and ensures that all the students have enough knowledge of all the aspects related to common functions in the community pharmacy and in the hospital pharmacy services. At least, the Diary Guide is also a useful tool for evaluating the student. All associate professors are coordinated by a University professor with a full-time job contract. A “Mixed Commission” is in charge of supervising all these activities. The Commission is formed by a joint committee consisting of five members representing the university and five members representing the Pharmacists’ Association. The Mixed Commission is in charge of executing, developing and overseeing the fulfillment of everything established in the above mentioned agreement.

**Organization of the Subject**

**Prerequisites.** In order to study this subject, the student must pass a minimum of 252.5 credits. Once the student has fulfilled this requisite, and before actually studying the subject, the Receptor Centre where the student is going to study during the next six months must be chosen. Subsequently, the student, the Tutor Pharmacist and the Dean (delegated by the Rector) sign a contract. The activities assigned to the student start before he/she actually goes to the Receptor Centre and meets the Associate Professor. The Associate Professor will be the same one until the subject is completed. The “Tutelage Practice” subject is organized as follows: (i) activities related to the presence of the student at the Receptor Centre; and (ii) seminars and complementary activities.

**Activities Related to Presence.** These activities are performed by the student at the assigned Receptor Centre during at least

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**Table I. Total number of hours in each level of study**

<table>
<thead>
<tr>
<th>Level</th>
<th>Teaching</th>
<th>Practice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Level</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Main courses</td>
<td>870</td>
<td>545</td>
<td>1415</td>
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<tr>
<td>Optional courses</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main courses</td>
<td>900</td>
<td>710</td>
<td>1610</td>
</tr>
<tr>
<td>Optional courses</td>
<td>640</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2250</td>
<td></td>
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</tbody>
</table>
six months. The presence of the student is crucial in the “Tutelage Practice” subject. The degree or level of apprenticeship achieved depends both on the student’s motivation and the encouragement given by the Tutor Pharmacist at the Receptor Centre.

During these six months the student, helped by the Tutor Pharmacist and the associate professor, must fill in the Diary Guide personally. At the end of the term, the student will hand in the Diary Guide after it has been approved and signed by the Tutor Pharmacist. This Diary Guide reflects and reports all the work done by the student, and it is taken into account in the final assessment.

The second version of the Diary Guide is divided into three sections, as stated in the program of the “Tutelage Practice” subject included in the agreement signed by the University of Barcelona and the General Council of the Pharmacists’ Association of Catalonia. The format of the Diary Guide is the same for all students, whether they choose to study in a community pharmacy or in a hospital. The three sections of the Diary Guide include: (i) basic functions; (ii) clinical pharmacy functions; and (iii) other health-related activities. The basic functions must be performed by the student as a normal practice in the community pharmacy or in the hospital. These functions include: acquisition; organization; delivery and preparation of medicines; and office work.

Clinical pharmacy consists of those jobs basically related with the follow-up of a patient and, despite the differences between the facilities, can be performed in a community pharmacy or in a hospital. These functions include: pharmacotherapy verification of the prescription, information and health education, integration of the pharmacist in the Hospital Commissions and in the basic health services, studies about the usage of medicines, control of the treatment and clinic pharmacokinetics. Other health-related activities are those that, although not very common, are important in some Pharmacy Offices or Hospitals. It is thus possible to perform any particular activity related to Pharmacy attention which is interesting to the student. During the student’s stay in the Receptor Centres, he/she must perform all the activities included in the Basic Functions section. The student must perform the activities from the other two sections that are currently conducted in the Receptor Centre.

**Seminars and Other Complementary Activities**

The “Tutelage Practice” subject also includes a series of “seminars” and other complementary activities of not less than 50 teaching hours. These seminars aim to reduce the variance between groups caused by the different characteristics of each Receptor Centre. This provides a common knowledge of community pharmacy to the students that chose a community pharmacy as his/her Receptor Centre, and a common knowledge of hospital pharmacy to the students that chose a hospital as his/her Receptor Centre.

These “seminars” are given once a week for at least two and a half hours per week, during twenty weeks of the six-month period of the “Tutelage Practice” subject. Each teaching group is formed by approximately 40 students. The contents of these “seminars” depend on the Receptor Centre. Each “seminar” is divided into the following sections: (i) Brief introduction of the subject; (ii) Students’ work in small groups developing practical cases related to the seminar’s subject; (iii) Presentation by the students of the study and the results obtained; and (iv) Discussion and conclusions of the “seminar,” with the participation of all the students of that “seminar.” Complementary activities were devised to introduce the student to the knowledge and usage of the different innovations and information of interest related with the subject. These activities can be performed both individually or in group and are crucial for the “Tutelage Practice” subject. The complementary activities include: (i) search of general and practical information in Internet; (ii) viewing study of educational videos; (iii) self-learning with different computer systems; (iv) workshops; and (v) visits to pharmaceutical laboratories and medicine distributors.

**CRITERIA AND EVALUATION PHASES**

The evaluation of the subject is carried out taking into account all the activities of the subject in order to fulfil the criteria of validity, reliability, objectivity and relevance. This evaluation envisages an educational assessment that determines the level of learning of the student during his/her stay at the Receptor Centre and an adding evaluation that certifies the acquisition of knowledge and abilities studied in the seminars and the sections included in the Diary Guide. The educational evaluation includes the filling in of the Diary Guide and the credentials obtained through a report written by the Tutor Pharmacist about the activities, the initiative, the participation and the integration of the student in the Receptor Centre’s group. The adding evaluation takes into account the attendance of the student to the “seminars” and the complementary activities, the work done in small groups, the daily training and the final multiple choice written exam which will reflect the degree or level of assimilation acquired by the student during the study. The Diary Guide will also be evaluated for the final qualification.

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**References**


**APPENDIX**

**Seminar Topics to the Students that Chose a Community Pharmacy as His/Her Receptor Centre**

1. Introduction seminar of the “Tutelage Practice” subject.
2. Organization, functions and responsibilities in community pharmacy.
3. Practical applications in quality systems in community pharmacy.
4. Practical applications in pharmacovigilance.
6. Home pharmaceutical care.
7. Drug use studies.
8. Practical applications in automedication health education.
9. Practical applications in traveler education.
10. Pharmacotechnics
11. Informatics: general information and applications in Internet (I)
12. Informatics: general information and applications in Internet (II)
13. Organization, functions and responsibilities in a hospital pharmacy.
14. Practical applications of clinical pharmacy in pediatrics.
15. Parenteral nutrition.

Seminar Topics to the Students that Chose a Hospital as His/Her Receptor Centre
1. Introduction seminar of the “Tutelage Practice” subject.
2. Organization, functions and responsibilities in a hospital pharmacy.
3. Pharmacotechnics
4. Parenteral nutrition.
5. Clinical pharmacokinetics.
6. Pharmacovigilance.
7. Pharmacoeconomy.
8. Drug use studies.
10. Informatics: general information and applications in Internet (I)
11. Informatics: general information and applications in Internet (II)
13. Practical applications in automedication health education.
15. Practical applications in traveler education.