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**PHARMACY INTERNSHIP - OPPORTUNITIES IN PHARMACY
PRACTICE**

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Abstract

Pharmacy internship -as learning in practice - is an essential part of the undergraduate pharmacy education. The goals are to increase students awareness of the various opportunities in pharmacy practice according to the current EU directive on the recognition of professional qualifications. This paper describes the key learning objectives and content of the internship organised by Faculty of Pharmacy, University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca, Romania. The internship is carried out in collaboration with the faculty, professional organization and the training pharmacies. The pharmacy program developed according with the new pharmaceutical internship guide was analyzed based on the evaluation questionnaires completed by each student enrolled. The feedback obtained from the students improves the activities and establishes the objectives according with the current standards of profession. Professional behaviour and interpersonal communication skills were identified as pharmaceutical tasks. In addition, training programmes for preceptors were considered required. As a result, we proposed an experimental pharmacy internship module – an experiential rotational - for fourth-year pharmacy students with the overall goal to provide an opportunity to participate in the role of the pharmacist in different areas of competence. This system of pharmacy internship should be updated in accordance with the changes concerning the opportunities in pharmacy practice. The feedback from the students highlights that they are aware of the usefulness of the current internship.

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1. Introduction

Generally, all over the world, the teaching methods in pharmaceutical area combine the formal learning (academic education) with the informal learning (practical experience through internship in different pharmacy placements). Pharmacy stage is designed to encourage students to apply their theoretical knowledge in the practice and to provide the skills and attitudes required for a future pharmacist. It is considered that pharmacy internship influences students' attitudes toward the role of the pharmacists and the pharmacy (Vestergaard, Nørgaard, Traulsen, & Kaae, 2017). Pharmacy practice is phased in at different points, but overall has a relatively small share within the early years, which gradually increases towards the end of the program (Husband et al., 2014).

The EU Directive on the recognition of professional qualifications concerning pharmacy education requires the professional training to include a 6-month internship in a pharmacy (public setting or in a hospital) during or at the end of the professional study (Directive 2013/55/EU). According with this current directive, in Finland, practice of offering the internship early in the curriculum - during the second and third year - has proven beneficial and supportive of the learning process (Pitka, Lofhjelm, Passi, & Airaksinen, 2014).

Internationally, the program is designed to allow students to develop specific responsibilities and awareness of their place as health care professionals, but each country has specific requirements, curricula and problems. Thus, Darbshire et al. (2008) identified the common barriers regarding the non-compliance with the standards in pharmacy programs: difficulty in locating institutional sites, preceptor training methods, defining programs outcomes, and restriction on pharmacy employment as students. Some themes were identified from Kairuz et al. (2010): the need for improved skills, more professional attitudes and additional training. The introduction of the National Pharmacy Internship Programme provided the opportunity for implementing a comprehensive quality framework for experiential learning in working environment (Strawbridge et al., 2017). In order to prepare pharmacists students for their future profession, new learning strategies must be incorporated in the internship. Therefore, according to Sørensen et al. (2005), pharmacy internship linked to a practice research project - special tasks relevant for both pharmacies and students - could produce student learning outcomes more relevant to new and extended roles of community pharmacists than traditional apprenticeship learning. Introducing of counseling programs for students applied during pharmacy internships are important (Vestergaard et al. 2017) as well as faculty liaison visits in order to improve the processes and strengthen the communication with training partners (Hasse et al., 2008, Wilbur et al., 2015). Other strategies could be the development of international programs which offer pharmacy experiences for students as it increases global awareness of health needs (Cisneros et al., 2013). Furthermore, the implementation of the rotation, involving areas outside of community pharmacy, could offer different practice experience with various kinds of activities and could prepare students for different types of projects and specific work places (Soric, 2013).

2. Problem Statement

Pharmacy education at the University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca is based on a five-year curriculum comprising theoretical training and the internships. The partnerships

between the faculty and the Romanian College of Pharmacists - branch Cluj, gave the collaborative strategies that were the key of implementing the concepts used into the pharmacy practice experience.

The pharmacy internships are organised as *specialty practice - introductory pharmaceutical practice experience* (IPPE) in community pharmacies (initiation - during summer, two weeks, for the 1st to 3rd years); orientation practice (4 weeks for the 4th year - rotation in hospital pharmacy, pharmaceutical storage units, industry or laboratory); and *professional internship - as advanced pharmaceutical practice* (APPE - for 5th year - six months in community or hospital pharmacy) with specific objectives proposed and competences acquired. Furthermore, in the last five years, the faculty of Pharmacy of UMF "Iuliu Hațieganu" Cluj-Napoca has employed several strategies in order to expand the number of sites away from traditional experiential practices departments to different specific services (industry, laboratory or pharmaceutical warehouse). The rotations allow students to experience their areas of interest and to obtain competences in different and specific pharmaceutical area (selected activities other fields of activity than community pharmacies). Preceptors and students completed evaluation on the internship after each programs.

3. Research Questions

Improving pharmacy internship programme through student feedback.

4. Purpose of the Study

This study aimed to describe and to evaluate the pharmacy internships organised in the undergraduate curriculum at the Faculty of Pharmacy, University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca, Romania through students feedback, with special focus on identifying the change in students' perceptions regarding their practical stage - initiation programme - in the last 5 years.

5. Research Methods

A prospective cross-sectional study was conducted using survey instruments to obtain feedback from students enrolled at Faculty of Pharmacy, University of Medicine and Pharmacy Cluj-Napoca, regarding their introductory practice experience (1st to 3rd years).

Students participation was anonymous and no credit was given for survey completion. The questionnaire was created by faculty teachers involved in pharmaceutical education based on their experience in advising students and literature review. The questionnaire consisted of questions about specific aspects of their internship programs (organization, structure, activities, relationship to didactic curriculum). The students were required to indicate their level of agreement on a 4-point Likert scale (strongly agree, agree, disagree and strongly disagree) The feedback obtained at the end of internship in 2017 (written questioners - collected as part of standard quality evaluation of the internship, 464 students) was compared with the data from 2012 (online surveys, Google Docs ® - Create Form extension, 226 students).

The results were summarized for qualitative and quantitative analysis and Microsoft Excel® software was used for statistical analysis.

6. Findings

In order to improve the activities and to establish the adequate objectives, two online surveys were conducted in the academic years 2011-2012 and 2012-2013 concerning students' practice of initiation (first to third year). The feed-back obtained voluntarily from them (226 of the 516 enrolled students) at the end of their internship indicated that they are aware of the usefulness of the internship. However, the survey highlighted that the objectives must be updated and that a better correlation between work in pharmacy and theoretical knowledge has to be made. Moreover, following the survey carried out, the need for a standardized practice guideline adapted to the study year (required by more than 90% of students) was noted (Dărăban et al., 2013). It is worth mentioning that students of our faculty have a specific guide for advanced pharmaceutical practice (APPE) - designed for students of the fifth year, periodically reviewed (Popa, 2005-2018). Therefore, in 2013 the guide entitled "Initiation and orientation in pharmaceutical practice" (the first guide for introductory pharmaceutical practice experience – IPPE - available in Romania) was edited and specific tasks were established, adapted to the each year of study (Mirel, 2013) (table 01).

Table 01. IPPE program structure and specific objectives

Internship		Specific objectives
<p>INITIATION</p> <p>2 weeks of internship (summer) /30 hrs / week)</p> <p>- in community or hospital pharmacy (from student's residence)</p> <p>*under the supervision of pharmacists preceptors</p> <p><i>Role:</i> initiation in the activities performed in a pharmacy (community or hospital pharmacy)</p>	<p>Specialty practice 1st year</p>	<p>To understand aspects related to the founding, organization and functioning of a pharmacy</p> <p>To identify the basic activities performed in a pharmacy</p> <p>To identify the main categories of health products available in pharmacies</p> <p>To get familiar to the medical and pharmaceutical terminology</p> <p>To identify and know the medicinal teas and their use</p> <p>To identify pharmaceutical formulations containing anorganic substances and their use</p>
	<p>Specialty practice 2nd year</p>	<p>To get involved in the basic activities performed in a pharmacy</p> <p>To consult the specialty literature available in the pharmacy (reception and storage of medicines and other health products)</p> <p>To know the role and content of the Pharmacopeia (Romanian and European)</p> <p>To know the physical and chemical properties of different medicinal substances</p> <p>To identify and know different medical devices available in pharmacies</p>
	<p>Specialty practice 3rd year</p>	<p>To know the pharmaceutical forms available in pharmacies</p> <p>To prepare medicines</p> <p>To know the products released from the pharmacy and to understand the characteristics specific for each category</p> <p>To identify and know the medicines containing antibiotics, antiseptics, antivirals and antimycotics</p> <p>To identify and know the phytopharmaceuticals available in the pharmacy</p> <p>To identify and know the alimentary supplements available in the pharmacy</p> <p>To understand the steps that must be followed in order to properly release medicines (prescription and OTC)</p> <p>To identify the medicines that are frequently released from pharmacies</p> <p>To be initiated in the dispensing and counseling activities performed in the pharmacy</p>
<p>ORIENTATION</p> <p>4 weeks of internship (summer) /30 hrs / week):</p> <p>- 2 weeks in pharmaceutical industry, laboratory or warehouse</p> <p>- 2 weeks in hospital pharmacy</p> <p>*under the supervision of preceptors (not only pharmacists)</p> <p><i>Role:</i> increasing professional insertion rate</p>	<p>Specialty practice 4th year</p>	<p>To understand the role, responsibilities and obligations related to the profession of pharmacist in other fields of activity (in which the pharmacist could perform)</p> <p>To observe and know the specific characteristics of the locations where the practical stage takes place</p> <p>To get familiar with the current legislation regarding the activities performed</p> <p>To get familiar with specific work principles and methods</p> <p>To get familiar with specific practical abilities</p> <p>To analyze the results obtained during specific activities</p> <p><i>*The specific objectives are established together with the practical internship coordinator (appointed by the practice partner), according to the specific activities performed in the department in which the practical internship takes place.</i></p>

In this guide, as an appendix, there are 2 questionnaires, one for evaluating the student's activity (by the tutor) and the other for the internship evaluation (this is to be completed anonymously by each student and given at the end of the practice). Thus, the evaluation of the internship in 2017 was achieved by the participation of a much larger number of students (the students were under obligation to complete the questionnaire, 94% of these being eligible). The feedback questionnaires were used in order to obtain specific information about learning efficiency during the internship, to identify the break in this educational process and to encourage students to assume their work and to improve their performance. The organization, development and evaluation of the internship were considered, a particular aspect being the tutor's profile as a model for the future pharmacists.

The comparison between students' responses in 2012, respectively in 2017, shows that there are some common points but also some significant differences.

According with the university curriculum and with the Regulation for organizing and carrying out the practice for the students of the Faculty of Pharmacy, specialty practice is a compulsory discipline, therefore all students should actually participate in this activity. However, under the protection of anonymity, the questionnaire revealed that about 10% of students did not actually participate in the internship activity (9.9% - in 2011 vs 11.3% in 2017).

According to the same regulation, the practice of initiation is carried out in the community or hospital pharmacies in the university center or in the students' home cities. It was noticed that more and more students prefer to do their practice in the university center (26% in 2012 vs. 33% in 2017 even though the number of those who live in Cluj-Napoca remains relatively constant – about 20%). As far as the type of pharmacy is concerned, following the evaluation of 2012, it was found that over 97% of the students had chosen the community pharmacy. Therefore, in order to offer the opportunity to know the activity in the hospital pharmacy, this specific activity was introduced in the objectives of the 4th year practice (2 mandatory weeks in the hospital pharmacy).

In 2012, 5 out of 10 students appreciated that only 25% of the theoretical knowledge gained through the faculty were useful in conducting the internship. That is why, starting with 2013, it was attempted to introduce some topics specific to each year of study (gradually). In 2017, 35.3% of the students believed to have correlated their theoretical and practical knowledge; the best correlation of the applicability of the theoretical knowledge being noticed for the third year.

Concerning the participation in specific pharmacy activities, in 2012 the main responsibilities of the students were to receive, store and arrange pharmaceuticals, but few of them had access to the computer program or direct contact with the patients.

According to the 2017 feedback, the reception of medicines remains the main one and it was noticed a strongly decrease of medicines preparation, correlated with the changes made in the recent years when pharmaceutical preparation become optional, and fewer pharmacies kept this tradition. Students are now also involved in other activities, having the opportunity to identify and dispensing other health products available in the pharmacy such as dietary supplements, medical devices, dermato-cosmetics (which demand special knowledge with regard to their uses and safety). The differences in basic pharmaceutical activities to which the students had access were illustrated in figure 1.

However, many students affirmed that their practical stage did not provide them with sufficient opportunity to achieve essential skills for providing patient counseling (42.2% in 2012 vs 36.3% in 2017).

In 2012 over 55% of students saw the effectiveness of the internship as being very good, while in 2017 the majority of students (76%) believed that the internship was effective for their training program. In the last year, 33.4% of students (vs 29.2% in 2012) considered that they have been very well integrated into the pharmacy team during their practical training (excellent – 10.5% of them). Students believe that the key element for the success of this activity is represented by the tutor and his ability to transmit information. Preceptors are evaluated on the following criteria: professionalism, interest, communication and teaching method. 76.4% of the students considered that the preceptors showed availability and interest for guidance (vs. 70.8% in 2012) and appreciated that even the other pharmacists from the team got involved in this activity.

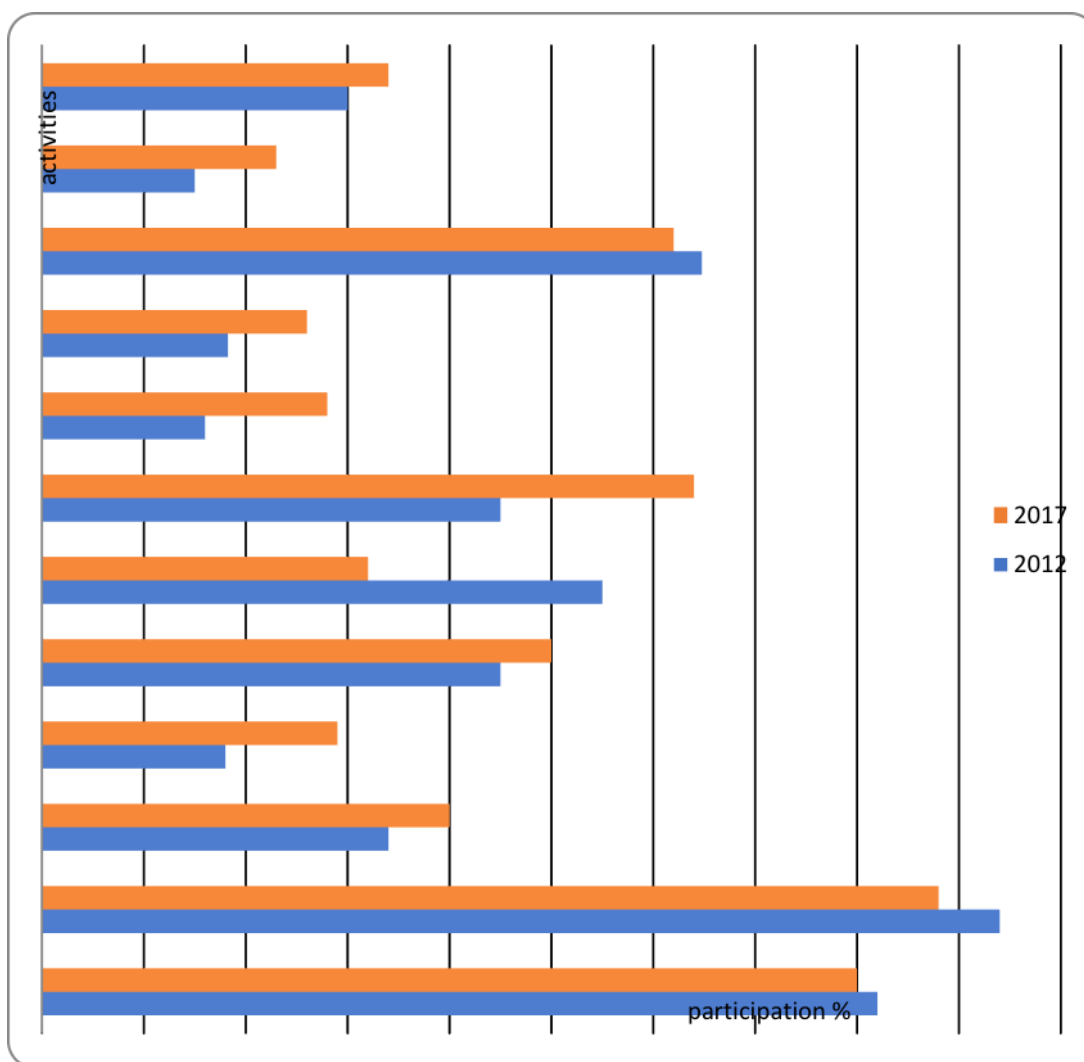


Figure 01. Effective participation of students in specific activities in pharmacy

In addition to the punctual answers obtained from the questionnaire, students openly expressed their views through remarks and suggestions on the issues addressed. More students (58.4%) wrote free-text comments in 2017 compared to 2012 (42.5%). Qualitative analysis of their comments revealed the main themes for the future. The most common opinions from the students’ evaluation in 2017 noticed the need for:

- more practice based subjects such as pharmacotherapy and topics related to pharmaceutical care;

- professionals skills to educate patients about the safe and appropriate use of their medications;
- improving communication techniques in order to communicate more effectively with the patients and the other members of the health care team;
- implementing an accreditation program for preceptors in order to improve trainees' professionalism.

7. Conclusion

Feedback is essential in order to obtain specific competences and to improve the quality of learning and further performance. In order to improve practice through students' feedback, the study was to assess students' perceptions related to the pharmacy practice experience. The results of this study showed that students' satisfaction has increased over the past five years (after using a specific guideline adapted to the each academic years), even though they identified deficiencies in its quality and reliability. Basic knowledge of specific pharmaceutical terminology, drugs and diseases are assessed during their practice experiences. The students become more receptive to understanding and learning the topics related to pharmaceutical care and have a positive attitudes toward providing counseling in pharmacies. Further changes in internship programmes are needed to close the gap between student expectations and the reality of pharmacist work world.

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