



## FEEDBACK REGARDING STUDENTS INITIAL PHARMACEUTICAL INTERNSHIP FROM THE UNIVERSITY OF MEDICINE AND PHARMACY, CLUJ-NAPOCA

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### Abstract

**Introduction/Aims:** The purpose of the study is to evaluate the perception of the organization, the development and the evaluation of the initial stage in the internship of students, in order to improve these activities and to establish the adequate objectives in accordance with the changes concerning the concept of modern pharmacy.

**Materials and methods:** An online survey was made using Google Docs® -Create Form extension. All results were accumulated and computed using Microsoft Excel®. The questionnaire consisted of 11 questions, structured on several levels: the objectives and how they can be achieved, internship organization, the internship training (effective participation in specific activities and integration in the pharmaceutical activity), the assessment, the profile of tutor / pharmacy. The questionnaire was completed by students from the Faculty of Pharmacy, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj Napoca, Romania.

**Results and discussions.** The study was conducted on 308 students (60% of all students from the study years II-IV. 90% of the respondents had actually participated in the internship, whilst 10% only formally participated in this activity. The main responsibilities of the students were: storage and reception of pharmaceutical products (94%, respectively 79%) and working with the receipts (57%). Most of the students appreciate that they were integrated into the work in the pharmacy, this being due largely pharmacist tutor, who expressed interest and ability in mentoring activities. They appreciated that the role of tutor requires 3-5 years of professional experience. In terms of the internship objectives, these should aim at applying the knowledge gained until the graduation year, but also familiarization with activities which might turn into applications for the coming years. 43% of students believe that only 25% of the theoretical knowledge was useful during the internship. 90 % of the total questioned considered useful to develop a practice guideline adapted to the year of study.

**Conclusions.** The professional training of the future pharmacist's students depends largely on experience gained by students during the internship activity. Feed-back from the students' shows that they are aware of the usefulness of the internship, but believe the objectives must be updated and a better correlation between work in pharmacy and theoretical knowledge has to be made. A first step is to develop a practical guide adapted to each year of study. The involvement of the tutor pharmacist is also essential to the success of this activity.

**Keywords:** pharmaceutical practice, internship of students, practical guide, professional development



## 1. Introduction

Accreditation standards for faculties of pharmacy have changed over the last decades according to their mission to educate pharmacy students in the context of contemporary requirements of the profession. One of the most important aspects is regarding the development of pharmacy practice due to the fact that the practice period - integrated into the pharmacy curriculum - represents an essential part of pharmacy studies. The quality of introductory pharmacy practice experience plays a significant role in building students' knowledge and skills in preparation for practice. However, the correlation of didactic course-work to practice experiences by students has provided a tool for faculty staff to use in assessing the applicability of lecture content to contemporary practice situations (1). Generally, mentoring activities, mentoring processes and assessment of students varied in the pharmacy (2), that is the reason why it is important to establish the aims and the content of the practice period and to have a real cooperation between the University and pharmacies. The students acquired practical skills and knowledge in a working community of professionals. That's why the concept of partnerships between pharmacy schools and practice sites to enhance pharmacy practice and programs involving academics and community or hospital pharmacies are promoted and reported (3 - 5). The results of some special programs offers an innovative approach for community pharmacy faculty members to work with community pharmacy sites to enhance their patient care service provision through the training and mentoring of pharmacy preceptors and students (3). Regional experiential education consortiums were proposed in order to provide a constructive approach to improve access to quality sites and preceptors through standardizing processes and leveraging resources (5). In addition, these training programs proposed at local or regional level, provide an opportunity for preceptors to recognize their role - as a model for the students - in ensuring the future of profession (6). Preceptors can influence students' professionalism providing a positive learning environment, and by modeling those behaviors that allow one to successfully practice pharmaceutical care. Different techniques to help students develop positive professional behaviors during experiential learning were reported (7). The feedback from pharmacist preceptors and students was a key element of the overall assessment plan. The aim of this study was to evaluate the significance of practical training as a part of the pharmacy curriculum beginning with the students' perception regarding the organization, the development and the evaluation of the initial stage in the internship of students, in order to improve this activity.

## 2. Material and Methods

**Material:** An online survey was made using Google Docs ® - Create Form extension. (<https://docs.google.com/spreadsheets/viewform?formkey=dGlhZEdjdHVwN3cyNUlEQ1ItRzVFbmc6MQ>)

The questionnaire consisted of 11 questions, structured on several levels:



- the objectives and how they can be achieved,
- internship organization,
- the internship training (effective participation in specific activities and integration in the pharmaceutical activity),
- the assessment, the profile of tutor / pharmacy.

**Methods:** The questionnaire was completed online by students enrolled in 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year of study, from the Faculty of Pharmacy, University of Medicine and Pharmacy "Iuliu Hațieganu" in Cluj Napoca, Romania.

All results were accumulated and statistical analyzed using Microsoft Excel ®.

### 3. Results and Discussion

At the Faculty of Pharmacy, University of Medicine and Pharmacy "Iuliu Hațieganu" in Cluj Napoca, Romania, the initial pharmaceutical internship takes place at the end of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> academic year, during the summer vacation. Students undergo 2 weeks of structured practical experience in community practice sites and they are gradually exposed to pharmaceutical problems. Initial pharmaceutical internship concerns first contact of students with activities taking place in the pharmacy and they have the opportunity to achieve the aims of the internship curricula. When the questionnaire was developed, students had already accomplished the initial pharmaceutical internship, they graduated academic year. Therefore students chosen to attend the questionnaire were already enrolled in the higher academic year i.e. 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> academic year. The study was conducted on 308 students, representing 60 % (Table I) of all students enrolled from the study years II-IV: 30 % - 2<sup>nd</sup> year, 39% - 3<sup>rd</sup> year, 31% - 4<sup>th</sup> year.

**Table I.** Representation of evaluated sample

		st 2 year	rd 3 year	sh 4 year	total
Total number of students	enrolled	178	175	162	515
	questioned	93	119	95	307
% students	questioned	52	68	59	60
	questioned / year study	30	39	31	-

90 % of the respondents had actually participated in the internship, whilst 10% of them admit that they participated with less activity. Students can choose the type of pharmacy in which to perform. 75 % of the students had held internships in community pharmacies that make use of the receipt and yet only 2% had chosen hospital pharmacy. Regulation says that summer internship can be done both within the university centre or place of residence, which could be a different city. This explains the large number (76 %) of students who chose another location for the internship. The 2 weeks period dedicated



to the internship, no matter the location (home or university), is considered to be the most suitable by more than half of the students (Table II).

**Table II.** The organization of the pharmaceutical internship - participation, location, duration

		%	
<b>The participation of students in the pharmaceutical internship</b>	formal attending	10	
	<b>actually attending</b>	<b>90</b>	
<b>Conducting of pharmaceutical internship</b>	a) the type of pharmacy	<b>community pharmacy with receipts activity</b>	<b>75</b>
		community pharmacy without receipts activity	23
		hospital pharmacy	2
	b) the location	University Centre of Cluj Napoca	24
		<b>Other city</b>	<b>76</b>
<b>The duration of pharmaceutical internship</b>	<b>2 weeks / summer vacation / anywhere</b>	<b>51</b>	
	<b>2 weeks / summer vacation / University Centre of Cluj Napoca</b>	<b>15</b>	
	3 weeks / summer vacation / anywhere	16	
	3 weeks / summer vacation / University Centre of Cluj Napoca	4	
	4 weeks / summer vacation / anywhere	9	
	4 weeks / summer vacation / University Centre of Cluj Napoca	4	

**Table III.** Effective participation of students in specific activities undertaken in the pharmacy

<b>Actual activities, the main responsibilities of the students</b>	%
<b>reception of pharmaceuticals products</b>	<b>79</b>
<b>arrangement and storage of pharmaceutical products</b>	<b>94</b>
release of drugs and pharmaceutical specialties	34
use of computer software	47
<b>working with the receipts</b>	<b>57</b>
knowledge of other existing health pharmaceutical products (food supplements, medical devices, dermatology, cosmetics, etc.)	85
provided pharmaceutical care (measure blood pressure, blood sugar, etc...)	10
attended the presentation of new medical products, presentations given by medical representatives	17
consulting the literature	65
attending at the opening and closing of the pharmacy	16
consultation of the Legislation and the procedures for applying the rules of good pharmaceutical practice	26
introduction to accounting aspects of the pharmacy	23

In terms of the actual activities, the main responsibilities of the students were: arrangement and storage of pharmaceutical products; reception of pharmaceuticals products; working with the receipts (75.57 % of the students had held internships in community pharmacies that make use of the receipt); providing medicine and health products; granting pharmaceutical care. (Table III.) Most of the students appreciate that they were integrated into the work in the pharmacy (32 % - very good), this being due largely pharmacist tutor, who, in general, expressed interest in mentoring activities (exceptional - for 34



% of the persons questioned). Students appreciated the pharmacist's ability to transmit information as very good (37 %). They appreciated that the role of tutor requires 3-5 years of professional experience (Table IV.).

The proper methods to evaluate the activity of the student during the pharmaceutical internship are considered to be the creation of an internship notebook and to have an interview with the supervising teacher (50%). But in the university the evaluation, besides those mentioned above, also includes a sheet called “Characterization of the activity of the student“.

**Table IV.** The profile of pharmacist tutor/pharmacy

Pharmacist tutor			%
a) the interest shown in mentoring activities	not at all		3
	enough		18
	much		18
	greatly		28
	exceptional		34
b) the ability to transmit information	not at all		2
	enough		15
	much		19
	greatly		36
	exceptional		28
c) professional experience	years of experience	0	0
		1	6
		3	35
		5	41
		10	18
Student's integration in the pharmacy internship			
not at all		2	
enough		27	
much		29	
greatly		32	
exceptional		11	

In terms of the internship objectives, these should aim at applying the knowledge gained until the graduation year, but also familiarization with activities which might turn into applications for the coming years (Table V). Almost a half of students believe that only 25 % of the theoretical knowledge gained in college was useful during the internship.

On the other hand, almost everyone - 90 % of the total questioned - considered useful to develop a practice guideline adapted to the year of study. As a response to this request, the first step is to elaborate a practical guide, which will be applied beginning with next year. The involvement of the tutor pharmacist is also essential to the success of this activity. After all, the professional training of the future pharmacist's students depends largely on experience gained by students during the internship activity. Therefore, it requires awareness of the importance of the initial stage in the pharmaceutical internship



process, considering the re-assessment of the ways to improve the content and the deployment. Feedback from the students' shows that they are aware of the usefulness of the internship, but believe the theme must be updated and a better correlation between work in pharmacy and theoretical knowledge gained in college has to be made.

**Table V.** The usefulness of pharmaceutical internship

		%
<b>The pharmaceutical internship objectives</b>	applying the knowledge gained until the graduation year	16
	familiarization with activities which might turn into applications for the coming years.	18
	<b>both</b>	<b>67</b>
<b>% of theoretical knowledge gained in college useful during the internship</b>	0	8
	<b>25</b>	<b>43</b>
	50	34
	75	12
	100	3
<b>Usefulness of pharmaceutical internship</b>	not at all	1
	enough	15
	much	33
	<b>greatly</b>	<b>51</b>

#### 4. Conclusion

Most students consider the practical training useful and are actively involved in the activities that take place in the pharmacy. Percentage distribution of the activities covered by the students, shows that although the theme is usually followed in the conduct of the proposed placement, a more complex material (guide book) would be beneficial for the student's involvement in particular activities related to the level of knowledge and would provide a better involvement in the pharmaceutical activities. Most of the students (90%) consider that the supervising pharmacists must have a solid knowledge and over 3 years of practice. Directions that should be taken in order to optimize student's internship: development and standardization of a practice guide for the student, according to the year of study, developing and implementing a program for accreditation of supervising pharmacists (conditions, training, etc.).

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