OPINION OF PHARMACY GRADUATES REGARDING FINAL EXPERIENTIAL TRAINING IN CONTEXT OF CURRICULA MODIFICATION AT FACULTY OF PHARMACY

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Abstract

This study represents an evaluation of final year pharmacy students' opinion about 6-month experiential training in community, hospital and university pharmacy. Results show an average level of 80% satisfaction according to the different criteria among students.

Rezumat

Opinia studenţilor absolvenţi privind stagiul practic de stat in contextul modificarii planului de studii la Facultatea de Farmacie

Studiul dat reprezintă o analiză a gradului de satisfacţie a studenţilor anului V privind efectuarea stagiului practic de stat cu durata de 6 luni în farmacii comunitare, de spital şi universitară. Rezultatele obţinute demonstrează un nivel mediu de satisfacţie a studenţilor fiind circa 80% după diverse criterii.

Cuvinte-cheie: satisfacţie, student, stagiu practice, farmacie.

Introduction

It has been recognized internationally that under-graduate medical education must adapt to changing needs. Experiential training is one of the basic components of modern pharmaceutical and medical education. This paper aims to relate contemporary educational theory to under-graduate medical educational requirements, specifically highlighting conditions (e.g. experiential learning) for: professional knowledge acquisition; critical thinking, problem-solving and clinical problem-solving; and lifelong professional learning. Furthermore, problem-based learning (PBL) is highlighted as potentially providing such conditions. There are lessons from contemporary educational theory for the reform of undergraduate medical education. These include valuing prior knowledge and experience; promoting learner responsibility through facilitating rather than directing learning; encouraging learners to test out and apply new knowledge, and using small-group work to foster explicitly the elusive skills of critical thinking and reflection. Contemporary educational theory contributes valuable insights, but cannot dictate the ultimate 'mix'; at best it provides some principles for reflective analysis of the learning experiences created for tomorrow's doctors and pharmacists. [1].

State University of Medicine and Pharmacy "Nicolae Testemitanu" Pharmacy Faculty curricula has undergone a considerable revision during last period and serious modifications have been made, in special in final experiential training during the last year of study. The requirements of Directive 2005/36/EC have been implemented in the new curricula and final practical training has been extended to 6-month internship in community, hospital and industry pharmacy. Students are required to fill in a portfolio according to the common guidelines which have developed by the five departments of Pharmacy Faculty.

Study year 2013-2014 was the first promotion of students which performed their experiential training according to the new curricula.

Materials and methods

This study is based upon the evaluation of final year pharmacy students regarding the 6-month experiential training in community, hospital and university settings. 96 out 115 (83,5%) of pharmacy graduates have participated in the study. The final year pharmacy students have to fulfill the 6-month experiential training in pharmacy by 4 types of rotations: 2 weeks in University pharmacy compounding department, 2 weeks in hospital pharmacy, 1 week in industry and 19 weeks in community pharmacy. The study year 2013-2014 was the first year according to the new curricula approved. Two types of questionnaires have been used: experiential training standard evaluation form and special evaluation form for final state training. First kind of questionnaire is a standard one, which was developed and validated in previous study for all kinds of experiential training rotations evaluation starting with the first year pharmacy students [2]. It consists of 3 compartments: A. Organization of experiential training: B. Performing experiential training and C. Evaluation of training. Compartment A contains 5 evaluation questions regarding preparatory activities before starting training, such as period of practice, guide's quality, instructions and other. Compartment B refers to "de facto" activities performed during training and concerns tutors' attitudes, readiness of pharmacy to serve as a practice site, practical applicability of theoretical knowledge and guide. Compartment C has regard to the evaluation of training taking into account the fairness of examination, concordance with students' expectations and motivation to practice. Every question was scored from 0 to 5 points according to the Likert-type

scale. In this way Compartment A was scored by 25 maximal points and compartments B and C – by maximal 20 points. The total amount of points – 65.

Second questionnaire was specially developed for this year students having regard they are the first promotion studying according to the new approved curricula. This questionnaire was focused mostly on quality of practice guide: both theoretical and practical parts, as well as students' opinion regarding practical skills examination. Also, we were interested in students' readiness to recommend the concrete pharmacy as practical site to other colleagues. This is quite important when selecting tutors and practical site for future trainings. Students have been asked to evaluate the 13 chapters of guide according to three criteria: relevance, quality of theory and applicability of practical applications. The 4 points Likert-type scale was proposed for every question. The quality of examination was evaluated by department (Pharmaceutical and toxicological chemistry, Social pharmacy, Medicines technology, Pharmacognosy and pharmaceutical botany, Pharmacology and clinical pharmacy) and by 4 criteria: transparency of examination criteria; examination procedure; concordance of self-appreciation with evaluators' one and satisfaction with results of examination. A 5 point Likert-type scale was proposed for this question.

Students have been asked to fill the first questionnaire immediately after practice examination and the second one was filled after final state exam. In the first survey 91 out 115 (79,1%) and in the second 96 out 115 (83,5%) students took part.

Results

Based on the first questionnaire average general satisfaction of final year students is equal to 48,04±8,54 (tab.1).

Table 1. Satisfaction degree of V year students regarding final experiential training

Average	48,0440
Standard deviation	8,54779
Minim	17,00
Maxim	65,00
Percentile 25%	44,00
Percentile 75%	54,00

The dispersion of students' opinion is not very large, thus 25% and 75% percentile is very close to average, having a normal distribution.

Comparing with the results obtained from previous promotions 2012-2013 there is a 10,1% decrease of total satisfaction from 53,42 [2]. Looking into certain dimensions, lower scores were obtained for "preventive training" and "quality of guide" and the highest values have been obtained for ""practice period", "tutors' attitude" and "practical site selection" (tab.2).

Table 2. Level of satisfaction by dimension

	N	Min	Max	Mean	Std. Dev
Guidelines quality	91	0	5	2,79	1,287
Experiential training length	91	0	5	3,02	2,458
Preventive training quality	91	0	5	3,22	,786
Compliance of guidelines to the practice "de facto"	91	0	5	3,37	,996
Practical site equipment	91	2	5	3,63	,694
Compliance with own expectations	91	0	5	3,64	,863
Knowledge applicability	91	3	5	3,84	,654
Motivation	91	0	5	3,87	,748
Experiential training period	91	0	5	4,23	1,814
Tutors' attitude	91	3	5	4,38	,511
Practical site selection	91	0	5	4,89	,737
Quality of examination from 1 to 10	91	1	10	7,16	2,548
Total satisfaction	91	17,00	65,00	48,0440	8,54779

Students evaluated the practice examination by average 7,16±2,54, which correspond to "Satisfied" level, but still is lower than appreciation given by previous promotion of students.

In order to identify factors which mostly influence the total satisfaction level among graduates, a one-way ANOVA test has been performed. As the result, only 2 dimensions: selection of practical site and knowledge applicability do not show a significant ($p > 0,05$) influence over satisfaction level.

Having regard to the results obtained based upon standard questionnaire, a special one has been developed and used to identify certain issues which lead to low level of satisfaction with guidelines quality and examination.

Quite similar responses have been obtained for every chapter of guidelines (tab.3). All chapters have been scored by circa 9 out of 12 maximal possible scores per chapter, representing 75% of satisfaction. Slightly higher scores are obtained for chapters 8, 4, 2 and the lowest are given to 13, 7 and 11.

Table 3. Descriptive statistics of responses regarding quality of guidelines

Descriptives				
Chapter			Statistic	Std. Error
1	Mean		9,55	,156
	Median		9,00	
	Variance		2,334	
	Std. Deviation		1,528	

2	Mean	9,81	,162
	Median	9,50	
	Variance	2,533	
	Std. Deviation	1,592	
3	Mean	9,89	,175
	Median	9,50	
	Variance	2,945	
	Std. Deviation	1,716	
4	Mean	9,83	,166
	Median	9,00	
	Variance	2,646	
	Std. Deviation	1,627	
5	Mean	9,25	,199
	Median	9,00	
	Variance	3,789	
	Std. Deviation	1,947	
6	Mean	9,16	,192
	Median	9,00	
	Variance	3,544	
	Std. Deviation	1,882	
7	Mean	8,99	,220
	Median	9,00	
	Variance	4,663	
	Std. Deviation	2,159	
8	Mean	9,95	,188
	Median	10,00	
	Variance	3,376	
	Std. Deviation	1,837	
9	Mean	9,65	,180
	Median	9,00	
	Variance	3,115	
	Std. Deviation	1,765	
10	Mean	9,00	,189
	Median	9,00	
	Variance	3,432	
	Std. Deviation	1,852	
11	Mean	9,15	,203
	Median	9,00	
	Variance	3,957	
	Std. Deviation	1,989	
12	Mean	9,50	,176
	Median	9,00	
	Variance	2,989	
	Std. Deviation	1,729	

13	Mean	8,33	,226
	Median	9,00	
	Variance	4,898	
	Std. Deviation	2,213	

Overall scores given to total relevance of chapters, quality of theory and applicability of applications are also very similar (tab. 4). Students have an average 76% of satisfaction according to all criteria.

Table 4. Scores given to overall relevance, theory and practical applications

Statistics		relevance	theory	practice
N	Valid	96	96	96
	Missing	0	0	0
Mean		41,2500	40,3333	40,4688
Median		40,0000	40,0000	40,0000
Std. Deviation		5,37244	5,88784	5,74906
Minimum		26,00	25,00	23,00
Maximum		52,00	52,00	52,00
Percentiles	25	38,0000	37,0000	36,2500
	50	40,0000	40,0000	40,0000
	75	45,0000	44,0000	44,7500

Every respondent was asked to give scores from 1 to 5 according 4 criteria to every department of Pharmacy Faculty having regard to the practice examination. A maximum of 20 points could be offered to a department. Thus, maximal score was given to department of Pharmaceutical and toxicological chemistry – 17,17±2,17; followed by Pharmacognosy and pharmaceutical botany – 16,61± 2,44; Social pharmacy – 16,56± 2,61; Technology of medicines – 16,42±2,59 and the lowest score was obtained by the department of Pharmacology and clinical pharmacy – 16,18±2,66. An average 17 out of 20 represents about 85% of satisfaction, which is a quite high level.

According to the appreciation criteria, students again show very similar level of satisfaction about 80% for all criteria (tab.5)

Table 5. Level of satisfaction according to the appreciation criteria

Descriptive Statistics	N	Min	Max	Mean	Std. Dev
Compliance	96	10,00	25,00	20,4688	3,45788
Satisfaction	96	10,00	25,00	20,7396	3,19620
Procedure	96	5,00	25,00	20,8958	3,34500
Clarity	96	10,00	25,00	20,9062	2,89493

Most of students will recommend community pharmacy (89,6%) and hospital pharmacy (90,4%) they have been practicing in to their younger colleagues. Variation

analysis has shown no significant difference between practice site and readiness to recommend.

Discussions

The results obtained based upon both surveys show an average level of satisfaction of five year students according to various criteria. Students' responses are quite similar to each other with minimal dispersion. This could be caused by several factors. One is probable passiveness of pharmacy student and lack of involvement into decision making process. Another could be that students passed the exam successfully and do not want to be critical in their appreciations. Nevertheless, the results obtained represent a good source of information about students' attitude towards final experiential training and could be used for routine evaluation of level of students' satisfaction.

Conclusions

Five year pharmacy students show a medium level of satisfaction (about 80%) according different criteria regarding final 6-month experiential training in community, hospital and university pharmacy. There are no significant differences among groups of students in the level of satisfaction reported.

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