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Original Article

Asthma-Themed Chest Diseases Elective Internship Program Experience at Dokuz Eylül University School of Medicine

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Abstract

OBJECTIVES: The purpose of this article is to introduce asthma-themed chest diseases elective program applied within the scope of the Dokuz Eylül University School of Medicine. undergraduate medical program.

MATERIALS AND METHODS: Asthma-themed chest diseases elective internship program in Year 4 was developed to increase student gains from the elective internship program. During the two-week program, lectures and bedside and outpatient clinics practices were implemented.

RESULTS: Students' pre-education and post-education knowledge scores and OSCE scores were investigated. A minimal increase was observed in post-education score, and no significant difference was determined in the statistical analysis. The students' post-education clinical performance scores were significantly higher than that of pre-education.

CONCLUSION: Asthma-themed chest diseases elective internship program seems to be effective in increasing the clinical performance of the students.

KEYWORDS: Medical education, electives, clinical performance

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INTRODUCTION

Within the scope of Dokuz Eylül University School of Medicine program, there are special study modules in the first three years and elective programs in years four, five, and six [1]. Elective programs and special study modules are one of the most fundamental components of medical education and they allow the student to concentrate on and get informed about an elected area [2, 3]. In year four, students participate in the elective internship program for two weeks to gain in-depth knowledge and skill in the areas they are interested in and watch the functionality of the department. Asthma-themed chest diseases elective internship program in year 4 was developed in 2015 to increase student gains from the elective internship program. While developing an education program, objectives, contents, learning-teaching process, and evaluation components should be identified [4]. These components were identified during the planning phase of chest diseases elective program and asthma was determined as the theme of the internship program. This study presents information about planning, application, and evaluation processes of the asthma-themed chest diseases elective internship.

MATERIALS AND METHODS

Objectives of the asthma-themed chest diseases elective internship program have been defined as follows:

- Identifying asthma
- Explaining the mechanism of formation of asthma
- Listing personal and environmental risk factors, triggering agents in asthma
- Identifying the physical examination findings in asthma
- Making differential diagnosis for asthma
- Commenting on the respiration test findings in asthma
- Evaluating reversibility test in diagnosing asthma
- Knowing the intended use of PEF meter
- Making asthma classification

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- Administering asthma treatment by asthma stages
- Evaluating asthma control in the patient undergoing treatment
- Identifying asthma attack, counting the steps of asthma attack
- Being aware of the importance of the education of the patient and the patient's relatives
- Explaining the self-management plan to the patient
- Describing the features of asthma monitoring
- Demonstrating the techniques for the administration of inhaler medications.

The two-week program involving lectures and bedside and outpatient clinics practices were implemented (Appendix 1). Fifty-two student volunteers participated in the elective internship program. The program took place between June 15 and 26, 2015.

In order to evaluate the cognitive readiness level of the students, a questionnaire consisting of 30 multiple choice questions was given to them. Objective Structured Clinic Exam (OSCE) consisting of three stations to evaluate clinical performance was applied. At the end of the elective internship, a questionnaire consisting of 30 multiple choice questions was given and OSCE consisting of three similar stations was conducted. The proportion of the pre- and post-test questions was determined using a blueprint based on the weights of the objectives in the program by chest diseases trainees and medical educators. Evaluation checklists have been prepared for OSCE stations with the themes of history taking, chest radiography, and respiratory function test evaluation. Standardized patients who were used for history taking station were trained before the educational program (Appendix 2, Appendix 3).

The average of the scores received from three OSCE stations was converted to a score out of 100 points by dividing the score with the maximum total score and multiplying by 100.

Table 1. Students' pre-education and post-education average scores

	Pre-education	Post-education	t	p
Average Knowledge Scores	65.45±6.89	67.18±8.89	1.158	0.252
Average OSCE Scores	59.48±8.8	71.62±12.2	6.487	<0.001

t: Paired sample t test, p<0.05 significance level

MAIN POINTS

- In medical education, elective programs and special study modules enables the student more focusing and deep learning about an elected area.
- Students' feedback is important in determining the effectiveness of the given education program.
- Asthma-themed chest diseases elective internship program seems to be effective in increasing the clinical performance of the students.

Students' opinions about the program were evaluated by a program evaluation questionnaire which consist of a Likert scale and one open-ended question. Reliability study of the five-point Likert scale was implemented and Cronbach's alpha coefficient of the scale was found to be 0.94.

Ethics Committee approval for the study was obtained from Dokuz Eylül University Noninvasive Research Ethics Committee (decision number: 2012/09-10)

RESULTS

Students' pre-education and post-education knowledge scores were found respectively as 65.45±6.86 and 67.18±8. 89 out of

Table 2. Students' evaluation of asthma-themed chest diseases elective internship program

Items Evaluated	AVG.±SD*
Program Objectives	
Clearly defined internship objectives	4.10±0.9
Objectives defined met by expectations	3.90±1.0
Education content met the requirements	3.90±1.0
Educational Environment	
Physical conditions of the places of education	4.39±0.6
Educational materials	4.31±0.9
Duration of education	4.23±0.9
Educational Activities in the Program	
Making use of lectures	3.62±1.2
Making use of bedside practices	3.92±1.0
Making use of respiratory function test laboratory practice	3.67±1.1
Making use of outpatient clinics practices	3.16±1.1
Making use of radiology practice	3.90±1.0
Educational content met the program objectives	4.08±0.8
Time management was adapted in the program	4.29±0.8
Educators	
They were knowledgeable	4.82±0.4
Positive approach to students	4.70±0.6
They answered the questions appropriately	4.80±0.4
They were actively involved in the education process of the students	4.60±0.7
They had positive educational skills	4.70±0.7
OSCE Application	
Instructions and explanations were sufficient	4.26±0.8
Station objectives were consistent with the educational objectives	4.28±0.6
Contribution of the use of standardized patient to you	3.96±1.1
Appropriateness of the evaluation period	4.16±0.9
Overall organization of the evaluation	4.39±0.6
Overall Contribution of the Internship Program to Professional Development	4.26±0.8

AVG: average; SD: standard deviation
*1-5 (1: least, 3: medium, 5: most)

100 points (Table 1). A minimal increase was observed in post-education score and no significant difference was determined in the statistical analysis (t: 1.158, p: 0.252). The students' pre-education and post education OSCE average scores were determined respectively as 59.48±8.8 and 71.62±12.2 out of 100 points (Table 1). Post-education clinical performance scores were found as significantly higher in statistical terms when compared to pre-education (t: 6.487, p=0.252).

Program objectives, educational environment, educators, OSCE application, and general achievements were evaluated between 1 and 5 (1: very low, 2: below average, 3: average, 4: above average, 5: very high) on the scale in the program evaluation questionnaire prepared. It was seen that the scores given by the students for different parameters varied between 3.16 and 4.80 (Table 2).

DISCUSSION

Although there was no significant increase in the knowledge scores, the increase in the clinical performance is considered remarkable. No significant increase in the knowledge scores is considered to be caused by the fact that the final test questions were more difficult than pre-test and/or the program involved activities increasing students' performance rather than theoretical activities. The increase in the clinical performance is considered to be associated with bedside theoretical, laboratory practices, outpatient clinics practices, and the contribution of OSCEs applied under laboratory conditions.

While elective programs are commonly offered in undergraduate education programs, there are a limited number of studies evaluating the effectiveness of these programs [5]. In this study, not only the knowledge and skill levels of the participating students but also different items of the program were evaluated by the program evaluation questionnaire.

It is important to consider the students' opinions to evaluate the effectiveness of the education programs offered [6, 7]. High feedback averages given for the applied elective internship program in general implies that students are pleased with a particular elective program. They used positive statements for the different items of the program in their answers given to the open-ended question where their opinions and recommendations about the program were requested in the program evaluation questionnaire. It is stated that elective programs allow students to have a deeper focus in the area they have selected and increase their internal motivation to learn [8]. In this study, students' statements that they enjoyed the program and achieved the learning objectives in their verbal and written feedback and their recommendations regarding the continuation of the program in the upcoming years imply that elective internship was positively evaluated by the students.

Asthma-themed chest diseases elective internship program seems to be effective in increasing the clinical performance of the students. We believe that the configuration, application, and evaluation of other elective programs in the undergraduate period in a similar manner will provide significant contributions to the students.

Ethics Committee Approval: Ethics Committee approval for the study was obtained from the Noninvasive Research Ethics Committee of Dokuz Eylül University (decision number: 2012/09-10).

Informed Consent: N/A.

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Conflict of Interest: The authors have no conflicts of interest to declare.

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Appendix 1. Elective internship program content (June 15-26, 2015)

Lecture Titles

- Definition, classification, risk factors, epidemiology, and pathophysiology of asthma
- Anamnesis, physical examination findings, and diagnostic approach in asthma
- Asthma treatment, asthma attack, and monitoring asthma
- Basic concepts and case samples in the respiratory function test
- Inhaler medication using techniques
- Basic concepts and case samples in respiratory system radiology

Practices

- Bedside practices in the clinic
- Respiratory function test laboratory practices
- Outpatient clinics practices
- Radiology practices

Appendix 2. OSCE Station Sample

STATION 1. HISTORY TAKING

Applicant's name: Ayşe/Ahmet Özkan

Location: Dokuz Eylül School of Medicine Chest Diseases outpatient clinic

Reason for visit: Asthma patient applied for control purposes due to recently increasing feeling of chest tightness and cough.

You are asked to TAKE HISTORY ABOUT THE RESPIRATORY SYSTEM in relation with the standardized patient's reason of arrival and INFORM THE PATIENT ABOUT THE RISK FACTORS IN THE HISTORY in 9 MINUTES.

Appendix 3. OSCE evaluation checklist

Student's Name and Surname:

Date:

Name and Surname of the Educator Evaluated:

ITEMS EVALUATED	0 Point Did not ask	1 Point Asked/approached relatively properly
HISTORY		
Gathering information (age, sex, profession)		
Questioning basic steps in history taking for asthma:		
• Onset and duration of disease		
• Family history		
• Professional history		
• Smoking history (active/passive smoker)		
• Other allergic diseases (allergic rhinitis, urticaria, eczema, etc.)		
• Home environment, having pets at home		
• Triggers (medications, odors, detergents, exercise)		
• Seasonal change in complaints		
• Day/night symptoms		
• Dose and duration of the medications taken		
• Rescue medication use frequency		
• Hospitalization		
• Emergency department application		
COMMUNICATION SKILLS AND INFORMING		
• Introduced himself/herself and gently started the communication		
• Sat down to allow face-to-face communication and listened carefully		
• Spoke clearly, gave chance to speak without interrupting		
• Maintained the communication by open and closed end questions and gave clear answers to the questions		
• Informed the patient properly about the risk factors (passive smoking, humidity/moisture at home)		
• Ended the communication properly		