

## *Self-evaluation of The Success of the Main Clinical Skills Given in Medical Faculty*

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### **Abstract**

**Background:** The aim of medical education before graduation is to train qualified physicians who have the knowledge, skills and attitudes that can provide qualified services, who can improve themselves continuously, acquire problem-solving skills and have clinical competence. We would like to determine how the interns feel about their practice and knowledge and just before the field. **Methods:** A questionnaire was developed by the medical education specialist according to the curriculum. Every skill was majored from 1(insufficient)-10(sufficient) points. The questionnaire was tested with 10 students. The forms made of 25 questions were sent by Google forms and 172 (51%) interns replied. Ethical approval was taken from the university committee. **Results:** Of the participants 62.8% was female and 61.1% was born in 1995. 18.1% of the students repeated the class. 29.2% of interns gave a score of 5 and below to the question of gaining the ability to make the diagnosis of the patient. 40.3% didn't gain the ability to make decisions on both the therapy and the tests; %93 didn't gain the implementation of intrauterine device skill, 20.9% didn't gain the ability to suture, %15.3 didn't gain the ability of CPR. 40.3% thought that they're not clinically sufficient. **Conclusion:** The medical education and the curriculum might be revised and the theoretic burden on students can be reduced. Moreover practical skills can be thought on more simulators and simulated patients.

**Keywords:** Curriculum, Skills, Clinic, Competence, Theoretic Burden

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## Introduction

The aim of undergraduate medical education is to train qualified physicians who have the knowledge, skills and attitude to provide qualified service. These students should improve themselves continuously after their graduation. The medical students should be able to gain problem solving skills and have high clinical competence (Amin Z et al., 2012; Tıp Eğitiminin Temelleri).

Clinical competence is not only having clinical skills, it is a much more complex concept that arises from the interaction of knowledge and performance and includes many characteristics (Challis M; Portfolio-based learning and assessment in medical education; 1999) such as the use of knowledge, correct behavior and professionalism (Amin Z et al., 2012; Tıp Eğitiminin Temelleri).

Medical education prepares physicians with the knowledge, skills, and features of professionalism needed to deliver quality patient care. Medical education research seeks to make the enterprise more effective, efficient, and economical. Short and long-run goals of research in medical education are to show that educational programs contribute to physician competence measured in the classroom, simulation laboratory, and patient care settings with advances in science and technology, medical education has evolved in the last 40 years to provide a suitable environment and opportunities to train physicians with sufficient competence levels. Therefore, in clinical education, assessment and evaluation methods that evaluate knowledge about many system diseases and multidimensional occupational skills are needed.

It is recommended to integrate measurement and evaluation methods into clinical practices in clinical training, and to structure and implement them through performances, both in the process to support development and at the end of the training process for decision making (Kogan JR et al., 2009; Tools for direct observation and assessment of clinical skills of medical trainees: A systematic review).

It is stated that multiple-choice questions, short-answer, true-false, matching, gap-filled exam methods used in education are insufficient in evaluating high-level cognitive processes such as problem solving, critical thinking, analytical thinking, and decision-making (Tengiz Fİ et al., 2014; Klinikte Eğitimde Yeni Bir Ölçme Yöntemi: Mini Klinik Değerlendirme). Different achievements should be evaluated with multiple assessment methods (Norcini J et al., 2007; Workplace-based assessment as an educational tool). Medical education includes intensive knowledge as well as applied fields. Performance-based assessment methods are recommended to be used especially in the evaluation of these applied areas (Vleuten V., 199; How can we test clinical reasoning?). By Miller in 1990; Four clinical competence levels are defined: knows how, shows how and does. The Miller pyramid shown in Figure 1 shows the relationship of knowledge and experience and evaluation methods.

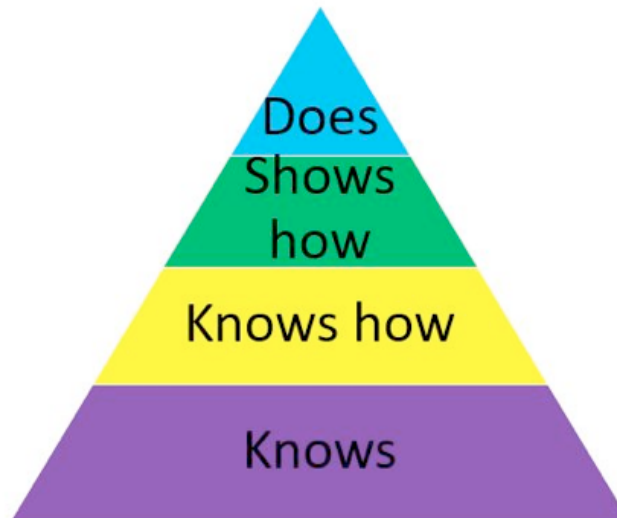


Figure 1. Miller's Pyramid

The aim of this study is to determine how Intern students felt about some of their practice and skills after six years in the medical school, using the questionnaire method, which is one of the evaluation methods that can be used in the clinical period.

### Methods

The research was conducted on 6 semester students of medical faculty. The calculated sample size of the students with 400 students is 150. All students were reached and informed about the research via Whatsapp and E-mail. A questionnaire was sent via Google forms, and the research was conducted by collecting the data filled in as a result of clicking this link.

In the research, the frequency and distribution tables of the students were calculated in SPSS 23.0 by using the percentage method. Sociodemographic variables such as age and gender, grade repetition were requested from the students. These comparisons were made with the chi-square test and / or the t-test.

Apart from these variables, some of the skills required to be done in the National Core Education Program were asked using the Likert scale (UAK; 2014; Standards in Medical Education in Turkey).

The questions were related to these topics:

The ability to make the Patient Problem / Diagnosis.

Medical Interview Skills

Physical Care Skill

Patient Approach / Professionalism

Clinical Decision Making

Consulting and Communication Skills

Patient Management / Event

Story taking, Information and data evaluation

Hypertension diagnosis, treatment initiation, information

DM diagnosis, treatment initiation, information

Interpreting Pulmonary Function Test

Interpreting chest radiography

ECG interpretation  
 Being able to do first aid  
 Being able to do IV injection  
 Ability to insert a urinary catheter  
 Ability to wear an RIA  
 Ability to suture  
 Being able to do CPR  
 Heart and Lung auscultation  
 General Clinical competence

### Ethics

Participation in the research is on a voluntary basis. The fact that the students are not asked for names and any identifying information increases the reliability of the answers in the form.

Approval was obtained from Gazi University Ethical Research Commission.

### Results

172 students participated in the study in which practical skills of medical faculty senior students were examined. Of the participants 62.8% was female and 37.2% was male. Senior female students' ages are lower than male medical students ( $p=0.04$ ).

Table 1. The sociodemographical features of the students

	Male		Female		p
	N=64	%	N=108	%	
Age (mean±SD)	24.63±0.9		24.29±0.6		<b>0.04</b>
23	-	-	3	2.8	
24	39	60.9	77	71.3	
25	12	18.8	24	22.2	
26	11	17.2	2	1.9	
27	2	3.1	2	1.9	
Grade repetition	14	21.9	14	13.0	0.126

Basic skills were asked using likert scale. According to the responses; male students are more comfortable with taking anamnesis, interpreting pulmonary function test, inserting a urinary catheter, wearing a RIA, suturing and doing CPR ( $p:0.048$ ;  $p:0.006$ ;  $p:0.006$ ;  $p:0.05$ ;  $p:0.029$  respectively). According to the senior students; male students have higher general clinical competence than female students ( $p:0.002$ ) (Table 2).

Table 2. The Response Percentages for Practical Skills\*

Basic Skills	Male		Female		p
	N	%	N	%	
The ability to make the Patient Problem / Diagnosis.	56	87.5	83	76.9	0.086
Medical Interview Skills	62	96.9	97	89.8	0.090
Physical Care Skill	57	89.1	91	84.3	0.380
Patient Approach / Professionalism	57	89.1	88	81.5	0.186
Clinical Decision Making	47	73.4	72	66.7	0.353
Consulting and Communication	52	81.2	97	89.8	0.111
Patient Management / Event	52	81.2	82	75.9	0.416
Anamnesis, Information and data evaluation	60	93.8	90	83.3	<b>0.048</b>
Hypertension diagnosis, treatment initiation, information	47	73.4	84	77.8	0.518
DM diagnosis, treatment initiation, information	49	76.6	79	73.1	0.620
Interpreting Pulmonary Function Test	41	64.1	52	48.1	<b>0.043</b>
Interpreting chest radiography	55	85.9	83	76.9	0.148
ECG interpretation	60	93.8	91	84.3	0.066
Being able to do first aid	61	95.3	94	87.0	0.079
Being able to do IV injection	61	95.3	101	93.5	0.627
Ability to insert a urinary catheter	64	100.0	96	88.9	<b>0.006</b>
Ability to wear an RIA	11	17.2	5	4.6	<b>0.006</b>
Ability to suture	61	95.3	86	79.6	<b>0.005</b>
Being able to do CPR	61	95.3	91	84.3	<b>0.029</b>
Heart and Lung auscultation	59	92.2	95	88.0	0.382
General Clinical competence	57	89.1	74	68.5	<b>0.002</b>

\*Gets a score 5 and over from likert scale

The scale scores were evaluated under three topics. According to Table 3; male students have higher sufficiency in clinical topics ( $p < 0.001$ ), have higher clinical knowledge ( $p < 0.001$ ) and have better medical skills ( $p < 0.001$ ).

Table 3. Evaluation of Responses Under Three Topics

Responses	Male			Female			p
	mean±SD	min-max	N	mean±SD	min-max	N	
Clinical sufficiency	6.83±1.9	1-9	64	5.44±1.8	1-9	108	<0.001
General Clinical Knowledge	50.03±15.1	16-70	64	42.86±12.0	7-60	108	<0.001

Medical Skills	98.9±18.7	50-124	64	82.54±18.8	23-112	108	<0.001
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## Conclusion

This study presents the survey results for intern students to evaluate the effectiveness of the basic clinical skills education. To do that, the questionnaire (25 questions) is developed by the medical education specialist according to the curriculum. Through the survey results, it is observed that 29.2% of interns gave a score of 5 (among total 10 grade) and below to the question of gaining the ability to make the diagnosis of the patient. And, the analytical results also show that 40.3% of interns didn't gain the ability to make decisions on both the therapy and the tests; %93 didn't gain the implementation of intrauterine device skill, 20.9% didn't gain the ability to suture, %15.3 didn't gain the ability of CPR. 40.3% thought that they're not clinically sufficient.

In conclusions, the medical education and the curriculum performed in the study might be revised and the theoric burden on students can be reduced. Moreover use of simulation in medical training today has a scope of teaching and learning with offering potential advantages in the realm of clinical assessment. The simulation technologies can have bigger roles in training of medical students (Olle Ten C. et al., 2007; Peer teaching in medical education: twelve reasons to move from theory to practice).

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