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"Structured with contemporary education methods" regarding anaesthesiology and reanimation internship education evaluation of student feedback

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ABSTRACT

Aims: This study aims to evaluate our training program, which is carried out with contemporary education methods in anaesthesia internship, for the students of our faculty, with student feedback.

Methods: In order to evaluate the comments of the students about the internship content, 1051 feedback forms filled out since 2008 were examined. There were 16 questions in the form, 15 of which were closed-ended and 1 open-ended.

Results: In the general evaluation of the internship program, 48.4% (n=509) of the students evaluated it as very productive and 46.1% (n=484) as productive. The percentage of respondents who said they were proficient in the "skill of vascular access," one of the abilities taught on models during clinical skills training and later used on patients, was 95.1% (n=999). 29.7% (n=312) of the students admitted that their "intubation practice" was inadequate.

Conclusion: It is crucial that the anaesthetic internship, which teaches one of the most fundamental medical skills—airway safety—be developed in accordance with the feedback received from the students. Standardised applied training programs increase the successful outcome of anaesthesia internship education.

Keywords: Anaesthesiology, educational methods, medical education

INTRODUCTION

In recent years, the increase in the knowledge and skills desired by the physician who graduated from the medical faculty necessitates the use of "learning to access information" in the education process and "learning by doing" techniques in skill education.[1] One of the critical steps of training good physicians is that these techniques, whose validity has been accepted by the medical faculties, are made effective by the education units.[2]

Few would contest the importance of providing medical undergraduates with clinical training in anaesthesia and intensive care medicine, even though these are postgraduate fields.[3] The literature discussed changes to undergraduate medical school curricula as well as the special advantages anaesthesiologists working in operating rooms, intensive care units, and pain clinics may offer medical students at all levels of their training.[4]

Renewal and standardisation studies in the medical education curriculum, which started with the contributions of the Health Sciences Education Council in our country in 2000, also pioneered the implementation of new educational techniques. This program was implemented in medical faculties as the National Core Education Program (NCEP) in the 2003-2004 academic year.[5]

The World Federation of Medical Education published the universal standards for the improvement of quality in medical education in 2007. This standardisation was translated into our language by the Turkish Medical Association in 2010 and a recommendation was made to apply it to the medical faculties of our country.[6] In our faculty, these standardisations and the structuring of our education and examination system were carried out in 2008.

In the educational process, it is crucial to understand the learning preferences of medical faculty students. Education should follow the concepts of adult education.[7] In 2005, our clinic started to work on the use of modern education methods in our internship. The content of the NCEP was examined in terms of the knowledge and

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skills to be acquired during the anaesthesia internship. In addition, the subjects that may be related to the internship content were also examined. For each subject, the aims and learning objectives were determined by the faculty members and the appropriate educational techniques were reviewed. At the same time, measurement and evaluation techniques were restructured.

This study aims to evaluate our training program, which is carried out with contemporary education methods in anaesthesia internship, for the students of our faculty, with student feedback.

METHODS

The study was carried out with the permission of Mersin University Clinical Researches Ethics Committee (Date: 12.02.2015, Decision No: 2015-40). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. In order to evaluate the comments of the students about the internship content, 1051 feedback forms filled out since 2008 were examined.

Internship Education Program

Settings: Students take 20 hours of practical and 16 hours of theoretical lessons in a two-week period until 2018. Since 2019, this period has been updated as 3 weeks. Three internship groups were formed, each undergoing rotating training in pain clinics and intensive care units for three days each, and anaesthesia for seven days. After the students practice their skills training on models, working one-on-one with the lecturer, they perform these skills on the patient in anaesthesia, algology, and intensive care departments.

Assessment and Evaluation

It is performed with the objective structured exam technique (OSCE). It consists of three phases: skill practices, multiple choice questions and verbal (structured).

Filling the Form

The feedback forms are distributed to the students by the internship group representative (student) after each final exam, and the forms filled in by the student are sent to the training officer (lecturer) by the group representative. There are no student names or any identifying marks on the forms. There were 16 questions in the form, 15 of which were closed-ended and 1 open-ended. In its content, questions are asked about the general evaluation of the internship, the duration of the internship, the course hours, the course environment, the proficiency in patient practices and the evaluation of the exam. There are also areas to write their own comments on them freely.

Survey questions were as follows:

- What is your general evaluation of the anaesthesia internship?
- What is your general opinion about the internship period?
- Were the lecture hours sufficient?
- Was the environment conducive to learning?
- Did you contact enough patients during the internship?
- Who provided you the necessary practical skills and inspection techniques?
- Do you believe that enough time is focused on teaching clinical skills?
- What practical skills did you acquire at the end of this internship?
- What practical abilities do you believe will be lacking after this internship?
- The courses that I thought I benefited the most during my internship were as follows;
- The courses that I thought I did not benefit the most during my internship were as follows;
- In the exam; The questions were consistent with the topics covered.
- In the exam; the questions serve to measure my real knowledge.
- Everyone is evaluated equally in the exam.
- I think my performance during the internship is taken into consideration during the exam
- Your thoughts and recommendations on internship.

Statistical Analysis

The Statistical Package for Social Sciences version 24 (SPSS v.24) program was used to enter the data for the statistical analysis. Additionally, calculations were performed using the E-PICOS tool in accordance with the MedicReS Good Biostatistical Practice guidelines. For categorical data, descriptive statistics were used, and percentages were used to describe frequency calculations. Cross-comparison tables used the chi-squared test. To compare the mean values, independent-group and dependent-group t-tests were run. Statistical significance was defined as a p-value of 0.05.

RESULTS

All 1051 forms filled out by students were evaluated. The number of internship groups to which the questionnaire was applied was 66. The number of students in the groups was at least 12 and at most 20.

In the general evaluation of the internship program, only 0.9% (n=9) of the participants found the internship unproductive. Other assessments are detailed in **Table 1**. Those who did not find the course environment

suitable were students belonging to a single internship group. In this internship group, it was determined that the applications were made in the operating room environment. Students' comments; it was that they were distracted in the operating room. Students who stated that the internship period was short stated they could not find enough time, especially for skills. Those who used the expression insufficient in response to the question of whether the course hours are sufficient also stated that the time for skill training should be increased.

Table 1. Evaluation of the internship program

Evaluation	% (n)*
General evaluation	
Productive	48.4 (509)
Agreeable	46.1 (484)
Might be improved	4.3 (45)
Unproductive	0.9 (9)
Duration of internship	
Adequate	71.2 (748)
Insufficient	22.7 (239)
Long	5.1 (54)
Lecture hour adequacy	
Adequate	89 (935)
Inadequate	12 (31)
Is the classroom appropriate?	
Appropriate	83.6 (879)
Inappropriate	16.1 (169)

n*: the number of respondents

The clinic practices were given enough time, according to 72.2% (n=748) of the students. In contrast to the 77.9% (n=819) who said they could contact to the patient, 20.8% (n=219) said they were unable to. The proportions of those that assisted the student during the clinical practice are displayed in Table 2. Of the 239 participants who believed the internship period was too short, 64.4% (n=154) indicated they had experienced enough patients, while 35.6% (n=85) said they had not been able to contact enough patients ($p<0.001$).

Table 2. The proportions of instructors who assisted the student with applications on the patient

	% (n)*
Lecturer	32.5 (342)
Research assistant	12.5 (131)
Allied health personnel	19.2 (202)
More than one group	35.5 (373)

n*: the number of respondents

The percentage of respondents who said they were proficient in the "skill of vascular access," one of the abilities taught on models during clinical skills training and later used on patients, was 95.1% (n=999). 29.7% (n=312) of the students admitted that their "intubation practice" was inadequate. Table 3 lists further outcomes.

Table 3: Clinical skill competence assessment

Lecture	Adequate % (n) *	Inadequate % (n)*
Vascular access	95.1 (999)	4.9 (52)
Adult advanced life support	92.8 (975)	7.1 (75)
Intubation	82.6 (868)	17.4 (183)
Bag-mask ventilation	92.3 (970)	7.7 (81)
Serum set preparation	91.2 (958)	8.8 (92)
Laryngeal mask airway	88.5 (930)	11.4 (120)
Medication (adrenaline) preparation	74.0 (778)	26.0 (273)

n*: the number of respondents

The rates related to the answers to the survey questions about measurement and evaluation are given in Table 4. Comments written concerning the evaluation; It was stated that the oral exam was stressful, had three stages, and was tiring.

Table 4. The responses to the questions about the measurement-evaluation at the end of the internship.

	% (n)*
Exam questions were consistent with the internship content	89.1 (936)
Equally evaluated	87.3 (917)
The knowledge and skills taught were measured in detail	86.4 (908)
Exam results were impacted by internship performance	70.5 (741)

n*: the number of respondents

DISCUSSION

In our country, the process of medical education is undergoing significant changes. The number of medical education institutions and units is growing daily and is becoming more academically robust. The practice of learning clinical skills and attitudes is improving medical education.[8] Nkabinde et al.[9] stated that the lack of structured internship training in anaesthesia and other branches in their country caused the students to lack skills. In the general evaluation of the internship program, only 0.9% (n=9) of the participants found the internship unproductive. We believe that our structured educational system is related to this pleasure.

Education is fast moving toward a student-centred structure, increasing the student's influence on the curriculum, and emphasising the evaluation of student feedback.[10] Karabilgin et al.[11] published an article on the use of student feedback in the evaluation of educational effectiveness. They claimed that student feedback is a part of the educational process in formative assessment. It was stated that the feedback forms should be created and evaluated and that the groups should not be less than ten. Structured feedback forms have been applied and evaluated in our clinic for 15 years. Since our internship groups consist of at least 12 people, students can openly share their thoughts.

Due to their extensive knowledge and workload, students focus solely on the course or courses that will be evaluated. As a result, the examination should also be educational, and students should fill in what is missing in their knowledge and abilities based on test results. In terms of convenience, evaluation is the best technique to review and impart the curriculum.[12]

In the study of 187 research assistants conducted by Hacıbeyoğlu et al.[13], aimed to measure the contribution of Anaesthesiology and Reanimation rotation to airway management. Ninety-five per cent of respondents said they had received training on airway equipment and its usage; 82% said they had received their first instruction on its use during their anaesthetic rotation. 56.7% of the participants stated that they performed the first endotracheal intubation during their anaesthesia rotation, and 59.2% stated that they used the airway device first time during their anaesthesia rotation. 34.2% stated that they used a laryngeal mask airway before, and 50% said they performed it for the first time during anaesthesia rotation. With 1051 participants, our study has one of the largest sample sizes in the literature for this subject. In our study, 82% of participants said that they performed intubation, and 88% claimed that they performed laryngeal mask adequately in their anaesthesia internship. When we look at all these, it can be predicted that research assistants who do not receive appropriate airway training in anaesthesia internship continue working careers with inadequate airway management. However, we believe that our students' success in practice is higher as we have been applying the standards of the World Medical Education Federation since 2008.

In the study Budakoglu et al.[14] conducted in different medical faculties, it was stated that anaesthesia internship was 5 days. The duration of our faculty's anaesthesia internship was 2 weeks until 2018. With the feedback received from the students, this period has been updated as 3 weeks since 2019. Although 22.7% of our participants found the anaesthesia internship period to be short, it is pleasing that 64.4% of them stated that they contacted a sufficient number of patients.

Muray[15] indicated that simulation training programs have been shown to increase the skill of anaesthesiology physicians. Hauben et al.[16] indicated that one of the most significant advances aimed at developing effective residency programs is the portfolio. The importance of cooperation in anaesthetic procedures and instruction has previously been demonstrated in the literature.[17,18] In our clinic, the operating room is shared by faculty, senior assistants, and allied health professionals. Professors and senior research assistants train students. Yet anaesthetic technicians can also help students with practical abilities. In our study, 19% of participants said they only received assistance from allied health professionals. Despite the anaesthetic technician's assistance, this situation leads us to assume that the operating room physician was forgotten about while responding the question.

According to the literature, while the tests are being designed as part of the medical faculty's end-of-internship evaluation, comprehensive, fair, and related questions should be asked regarding the internship's subject matter.[19] Additionally, Dökmeci et al.[20] suggested that student report cards be used to evaluate internship performance. Ninety per cent of the students agreed that the tests were equally evaluated, measured in detail and relevant to the course content. However, 70% of the participants claimed that the exam considered how well they performed during their internship.

CONCLUSION

It concluded that learning by doing is a successful strategy for clinical skills training to improve the student's sense of satisfaction and demonstrate the power of hands-on training. It is crucial that the anaesthetic internship, which teaches one of the most fundamental medical skills—airway safety—be developed in accordance with the feedback received from the students. We believe that standardising anaesthesiology internship programs and adopting contemporary teaching techniques improves medical education.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Mersin University Clinical Researches Ethics Committee (Date: 12.02.2015, Decision No: 2015-40).

Informed Consent: All participants signed and free and informed consent form.

Referee Evaluation Process: Externally peer reviewed.

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

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