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Research Article

EFFECTIVENESS OF INTEGRATED TRAINING IN OPHTHALMOLOGY FOR FIFTH-YEAR MEDICAL STUDENTS: A COMPARATIVE STUDY

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ABSTRACT

This study aimed to assess the effectiveness of integrated training in ophthalmology for fifth-year medical students. Traditionally, medical education has focused on faculty expertise, often neglecting the clinical importance of irrelevant details. Integrated teaching, covering all aspects of a subject, provides an alternative approach. Fifth-year students completed evaluation questionnaires and final examinations after training with integrated teaching methods. Results showed that students trained with integrated learning scored significantly higher on their final exams compared to those trained conventionally, satisfaction among students increased significantly after implementing integrated teaching. Over the past eight years, our department has incorporated integrated teaching into the curriculum, emphasizing interactive assessment and small group learning for both clinical and theoretical training in ophthalmology.

Keywords:- Integrated training, Ophthalmology education, Medical curriculum, Student satisfaction, Small group learning.



INTRODUCTION

The current medical education curriculum lacks emphasis on clinical skills and patient interactions, posing challenges for students' real-world preparedness. Fragmented teaching across multiple departments results in disjointed course materials, hindering students' ability to grasp a comprehensive understanding. [1] This disconnects between theoretical knowledge and clinical relevance diminishes the value of courses in practical settings. Integrative curricula have emerged to address these gaps, integrating basic science with clinical practice to enhance understanding. Teachers play a crucial role in ensuring comprehensive coverage of expertise across all areas of study. Through vertical integration, students gain deeper insights into medical principles and develop essential clinical skills alongside theoretical learning. Small group discussions led by experienced tutors facilitate context-based learning and problem-solving, fostering skill development. [2] The implementation of integrated teaching in ophthalmology at Thessaloniki's Medical School offers a structured approach to enhance students' theoretical and practical knowledge. Evaluation using structured questionnaires and examination scores provides insights into the effectiveness of this approach.

MATERIALS AND METHODS

A small number of student groups covered all clinical skills in an integrated teaching environment during. Faculty numbers decreased slightly (8 - 10) and students increased slightly (112 vs 123), and the faculty to student ratio dropped slightly (12.8 vs 13.9). In the last 3 years, there have been fewer postings due to the ongoing economic crisis, which resulted in a slight

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increase in faculty to student ratio. [3]

Integrated teaching in our department has been implemented throughout the previous eight academic years through a process that is interactive, objective, and interactive. As a result of students' critiques and evaluations, integrated teaching began. Seminars were substituted for lectures for the students. In addition to the theoretical background and clinical skills reading materials, all students were given access to all supplementary teaching materials prior to every classroom session. [4] Throughout each session, students demonstrated both theoretical and clinical skills. By spending equal time on both theory and practice, all students received standardized training. The students included in this survey were from the academic. During the finals week following fifth-year finals, anonymous questionnaires were administered to the students at a hospital's amphitheater.

Ten questions were included in the questionnaire, and students were asked to evaluate various aspects of their training, with the primary focus being on the readiness to practice ophthalmology. Grades ranged from one to two: unacceptable, three to four: inadequate, five to six: adequate, seven to eight: good, and nine to ten: very good. [5] Training posts, clinical skills lab content, and training time were also evaluated in addition to hospital access and department access. Medical students are trained in 45 theoretical skills and 64 clinical skills in the ophthalmology program, and they are prepared for general practice by the quality of their training, as well as by the clinical skills taught, who are qualified to teach in general practice. As well as providing inpatient examinations and clinical training, the department identified five potential areas for improvement in ophthalmology education. An almost unchanged questionnaire was used to collect data during nine academic years. Since only a few changes were made to the faculty, only minor changes were made to the questionnaire regarding trainer assessments. A 28question multiple-choice exam was required each semester for all students. [6] Each semester, clinical skills were assessed by oral examinations before written exams. There was a 70% theoretical skill examination component, while there was a 30% clinical skill examination component. The statistical analysis was conducted using SPSS (19.0, SPSS Inc, Chicago, IL, USA). The averages were calculated for each academic year and question. Independent samples and teacherstudent interactions were tested using t-tests.

There was a statistically significant difference between student evaluation of the curriculum modification and the other relevant questions (the content of clinical skills laboratories, available training times, and ophthalmology training quality as a means of preparing medical students for general practice) between 1) the years when conventional methods were used last three years during which integrated teaching has been implemented (P<0.05).

Students consider integrated teaching to be more effective than traditional teaching methods. Clinical skills and participation in clinics should be more important than studying theory when preparing students to practice inpatient and outpatient care. [7] Compared to traditional and integrated students , curriculum modifications had a significant impact on the final examination grade. Compared to students in the first group (5.52 out of 10) in the second group, the second group achieved a significantly higher grade (6.17 out of 10/mean + standard deviation). For students trained with the integrated method, graduation rates have improved statistically significantly since (P 0.001, ANOVA).

Number of medical students	Teaching method	Final examination score ^a (mean ± SD)
60	Conventional	7.00±1.31
57	Conventional	5.18±1.45
45	Conventional	2.48±1.33
70	Conventional	6.44±2.45
56	Conventional	2.45±2.44
47	Conventional	2.42±2.36
54	Integrated	3.15±2.25
70	Integrated	3.30±2.25
62	Integrated	3.45±2.34

Table-1: Comparing teaching methods, final exam scores, and semester assessments.

DISCUSSION

Traditional medical school curricula separate the preclinical and clinical years. A specialist teacher teaches the students in the area of their interest through lectures.

Specialist topics are sometimes placed a great deal of emphasis by doctors since they do not encounter them frequently during their clinical practice. [8] Medical students have difficulty integrating clinical knowledge

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with basic science knowledge because of this teachercentered approach. This method does not link medical students' ophthalmic curriculum together. Teaching styles vary among the teachers, which is also causing a problem. The curriculum is delivered to students by a specialist with appropriate subspecialty training. The focus of specialists on their areas of expertise leaves little time for primary care training. [9]

The curriculum of our department has been transformed from conventional to integrated after eight academic years and a transparent, interactive evaluation process. In terms of undergraduate learning, studies showed that exams and curriculum were crucial. As part of this significant curriculum modification, students participate more in seminars than lectures. [10] The students acquired both theoretical and clinical skills in addition to clinical skills. Regardless of their subspecialties, tutors distributed their teaching time evenly between theoretical and clinical components.

Using integrated teaching instead of conventional teaching significantly affected students' grades, according to this study [11]. Students' final examination grades are higher after implementing integrated teaching, and this is an objective metric. Active student participation may have been facilitated by the availability and preparation of teaching materials before each class. In addition to the curriculum revision, lectures that reduced student participation and attention were eliminated and a large portion of the teaching time was devoted to small groups. [12-13]This study used student evaluations of their training as a subjective outcome measure, and related research indicates that students in an integrated curriculum make more accurate diagnoses than those in a conventional curriculum. [14] Posttraining evaluations showed that students thought their ophthalmology training had been adequate from a theoretical and clinical perspective. Continuity of clinical skills training and constant availability of a single member of the teaching staff have been reported to improve student satisfaction with integrated teaching.

CONCLUSION

There has been extensive research on the benefits of integrated teaching in medical education. An integrated teaching study of this kind shows how the concept can be applied to a particular specialty before being adopted by medical faculty members. The evidence also supports the claim of superiority of integrated teaching over conventional instruction over a long period of time. The teaching process improved significantly in terms of student satisfaction as a result of this process compared to prior years. Additionally, integrated teaching also improved student grades in Ophthalmology after it was introduced. Adding problem-based learning to the clinical skills section of an ophthalmology curriculum may improve clinical skills. This study's results may also be beneficial to other medical schools as well as curriculum innovations. Students can learn both theoretical and clinical skills in small groups in a successful ophthalmology training program.

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