

Research Article / Araştırma Makalesi

THE EFFECTS OF SELECTIVE COURSES ON STUDENT SATISFACTION AND ATTITUDES IN MEDICAL EDUCATION: THE CASE OF KOCAELİ MEDICAL FACULTY

TIP EĞİTİMİNDE SEÇMELİ DERSLERİN ÖĞRENCİ MEMNUNİYETİ VE TUTUMLARINA ETKİSİ: KOCAELİ TIP FAKÜLTESİ ÖRNEĞİ

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ABSTRACT

Objective: Elective courses offer students opportunities to gain knowledge and improve themselves in different fields. Therefore, it is important to examine the effects of elective courses on student satisfaction and attitudes. The purpose of this study is to examine the variability of the effect of elective courses on student satisfaction and attitudes with gender and board grades.

Methods: A total of 102 students (46 females, 56 males) from our faculty participated in the online elective course satisfaction survey (ECSS), which consisted of 25 questions with five options prepared using the Likert scale. The responses to the survey were analyzed using IBM SPSS Statistics 25 program.

Results: Regarding the question "Do you think the course you've chosen contributes to your school grades?" 49.1% of women responded negatively, while 79.3% of men gave a negative response ($p<0.05$). For the question "Do you think the course you've chosen will contribute to your future career?" 72.2% of women gave a positive response, while only 40% of men gave a positive response ($p<0.05$). When asked about the sufficiency and competence of the course instructor, 94.4% of women gave a positive response, whereas 66.7% of men gave a positive response ($p<0.05$). Regarding the question "Does the influence of your expectations for your future academic life affect your choice of course?" 23.5% of students with a grade below 80 gave a positive response, while 52.4% of those with a grade above 80 gave a positive response, and a statistically significant difference was found ($p<0.05$). **No significant difference was found in the other questions.**

Conclusion: It was observed that female students have higher academic expectations than male students, they make more thoughtful choices when selecting courses to meet their academic expectations, they are more likely to believe that the instructor teaching the course is well-equipped compared to males, and as the student's academic achievement level increases, it is believed that elective courses contribute more to academic life.

Keywords: Elective Course, Medical Education, Student Satisfaction.

Öz

Amaç: Seçmeli dersler öğrencilere farklı alanlarda bilgi edinme ve kendilerini geliştirme fırsatları sunar. Bu nedenle, seçmeli derslerin öğrenci memnuniyeti ve tutumları üzerindeki etkilerini incelemek önemlidir. Bu çalışmanın amacı seçmeli derslerin öğrenci memnuniyeti ve tutumlarına olan etkisinin cinsiyet ve kurul notları ile olan değişkenliğini incelemektir.

Yöntem: Likert ölçeği kullanılarak hazırlanan 5 seçenekli 25 soruluk online seçmeli ders memnuniyet anketine (SDMA) fakültemiz 102 öğrenci (46 kadın, 56 erkek) katılmıştır. Ankete verilen cevaplar IBM SPSS Statistics 25 programı kullanılarak analiz edilmiştir.

Bulgular: "Seçtiğiniz dersin okul notlarınıza katkı sağlayıp sağlamadığını düşünüyor musunuz?" sorusuna kadınların kadınların %49,1'i olumsuz yanıt verirken, erkeklerin %79,3'ü olumsuz yanıt vermişlerdir ($p<0.05$). Seçtiğiniz dersin gelecekteki kariyerinize katkı sağlayacağını düşünüyor musunuz?" sorusuna kadınların %72,2'si olumlu yanıt verirken, sadece erkeklerin %40'ı olumlu yanıt vermişlerdir ($p<0.05$). "Dersi veren öğretim üyesi yeterli ve donanımlı mıydı?" sorusuna kadınların %94,4'ü olumlu yanıt verirken, erkeklerin %66,7'si olumlu yanıt vermişlerdir ($p<0,05$). "Dersi seçmenizde ilerideki akademik hayatınızla ilgili beklentilerinizin etkisi oluyor mu? sorusuna başarı notu 80'in altında olan öğrencilerin %23,5'i olumlu cevap verirken başarı notu 80'in üstünde olanların %52,4'ü olumlu cevap vermişlerdir ($p<0,05$). Diğer sorularda anlamlı bir farklılık bulunmamıştır.

Sonuç: Kadın öğrencilerin erkek öğrencilerden daha fazla akademik beklenti içinde olduğu, ders seçerken daha fazla düşünerek ve akademik beklentilerini karşılayacak ders seçimleri yaptığı, dersi veren öğretim üyesinin donanımlı olduğunu erkeklere oranla daha fazla düşündüğü ve öğrenci başarı düzeyi yükseldikçe seçmeli derslerin akademik hayata katkısının daha fazla olacağını düşünülüyor görülmüştür.

Anahtar Kelimeler: Seçmeli ders, Tıp eğitimi, Öğrenci memnuniyeti.

Introduction

In the context of medical education, elective courses are regarded as a significant phenomenon. They enable students to explore their areas of interest and experiment with their knowledge and experiences, guided by the outcomes of their choices.¹ This approach, which forms an essential component of educational diversity, can reshape educational policies by providing students with the opportunity to focus on their areas of interest.² Learning is fundamentally a physiological process, and it can become more effective when supported by appropriate enriching environments or pedagogical methods.³ These experiences require the continuity of changes in attention, movement, and behavior to transform learning into a sustainable process of change. It can be thought that the effect of elective courses taken by medical faculty students on their social lives and course success is an important issue that needs to be examined.⁴ Learning extends beyond the confines of educational periods and continues as a lifelong process. The effective shaping and direction of this process are critical for the validity of educational methodologies. Students acquire the necessary knowledge and skills through this continuous learning journey, adapting to educational environments and steering their lives appropriately during this phase. Elective course curricula should also support this process.^{5,6}

The implementation of elective courses among medical students is generally regarded positively.⁷ This approach reflects their favorable attitudes towards case-based learning, highlighting the necessity of integrating this learning style into the medical education curriculum.⁸ Elective courses in medical school curricula offer a multitude of benefits.⁹ Foremost among these is the opportunity they provide for students to engage deeply in a diverse array of disciplines beyond the traditional scope of medicine. This aspect of elective courses facilitates an expansive and comprehensive educational experience.¹⁰ Moreover, elective courses can help diversify students' learning experiences.¹¹ They are considered an important educational tool for medical students, offering them the chance to acquire knowledge in different areas, personalize their learning experiences, and enhance the variety of their learning. Therefore, incorporating elective courses into the medical education curriculum is a crucial way to provide students with a richer and more personalized educational experience.¹²

In this context, elective courses provide students with opportunities to acquire knowledge in different fields and improve themselves.¹³ The aim of this study is to examine the effects of elective courses in the field of medical education on students' success, gender and social life. Our research aims to determine how the courses students choose according to their personal interests contribute to their career goals and personal development. In this context, our research question is as follows: "What are the effects of elective courses in medical education on students' learning experiences and social interactions?"

This question aims to deeply analyze the potential advantages and challenges of integrating electives into the medical education curriculum on student development.

Methods

Participants and Survey Method

The study was conducted with the approval of the ethics committee (Ethics Committee Approval Number: E-80418770-020-408333) at Kocaeli University Faculty of Medicine. A 25-item questionnaire, prepared using a Likert scale with five options: "definitely no," "no," "undecided," "yes," and "definitely yes," was administered to second-year students at Kocaeli University Faculty of Medicine. Students were instructed to provide objective responses to the questions. Student expectations, personal experiences, and satisfaction levels from elective courses have been evaluated based on their responses. While providing these responses, gender distinctions and their grade levels from the most recent final exams were also considered to observe if there was any significant variation in the answers. Participation in the survey was entirely voluntary, and a total of 102 students (46 female, 56 male) 34.6% participated.

The research method employed is based on a five-point Likert scale. This approach is designed to gather information on a subject by providing a neutral option for participants who may be reluctant to choose extreme options in research designs. Our study involved Term-2 students who enrolled in elective courses during the Fall semester of the 2022-2023 academic year. The survey was administered to the participants in the subsequent term following the conclusion of the courses. Participation was entirely voluntary. Each student was required to choose one elective course. Among the courses selected by participants, 12 were in the pre-clinical field, 4 in clinical, and 14 in non-medical areas. The survey was administered to students online via the Online Forms survey application. This approach aimed to reach a larger number of participants more easily and facilitate data analysis.

The survey included questions about students' age, gender, grade point average, daily study hours, as well as specific questions related to the purpose of the study, such as the elective courses they had chosen, why they had chosen those courses, the contribution of these courses to their academic and post-educational lives, and their thoughts about the instructors of these courses.

When preparing the survey, care was taken to ensure that the questions were objective and understandable, and that they allowed for short and clear answers. Questions were presented to students with response options in the form of "definitely no," "no," "undecided," "yes," and "definitely yes," enabling students to provide objective responses within a wide framework. Additionally, open-ended questions were included to allow students to express their thoughts in their own words, ensuring that the survey remained student-focused and objective. Only

second-year students were included in the survey, in accordance with the regulations of Kocaeli University Faculty of Medicine's education, teaching, and examination regulations, which allow students to select elective courses. Students who selected multiple elective courses were not included in the study.

Statistical Analysis

The responses given by the students were analyzed using the IBM SPSS Statistics 25 program. In this program, responses of "definitely no" and "no" were considered negative, while responses of "yes" and "definitely yes" were considered positive. Those who selected the "undecided" option were also included in the statistics, and a triple correlation was examined. The relationship between negative, positive, and undecided responses to the questions and gender and grades was investigated. This statistical analysis was conducted using the IBM SPSS Statistics 25 program and correlations were examined using the Chi-Square test, with p-values determined.

As the average grade of the students participating in the study was 87.62 (± 10.31), and considering that students with an average score of 80 or above in the university's medical faculty have the right to pass the final exam without taking it, this score was accepted as 80 when analyzing the relationship between the grade and the given responses.

Since statistically significant differences were found only in 4 questions, the table of these 4 questions is provided in the findings section. Tables for questions without statistically significant differences are not included.

Results

Of the 102 students who participated in the study, 54.9% were male (56 individuals), and 45.1% were female (46 individuals). The average grade point average of the participating students was 87.62 ± 10.31 , and their average age was 20.35 ± 0.95 (Table 1). The percentage distribution of responses to the 5-item questionnaire, prepared using a Likert scale and administered to the participating students, is presented in Table 2. In response to the open-ended questions we posed to participants, we primarily encountered brief, emotion-expressing answers, often consisting of a single word or a short phrase. Due to the inability to categorize these responses in detail, they were broadly classified into positive and negative categories. Among the negative responses, four main themes emerged: 'being online,' 'examination pressure,' 'lack of practical application,' and 'ineffectiveness.' The remaining 94 responses were either positively inclined or comprised statements equivalent to 'None.'

Discussion

In medical education, "elective courses" play an important role and offer various contributions and benefits to students.⁴ Beyond the traditional medical curriculum,

elective courses allow students to explore their areas of interest. Elective courses provide medical students with the opportunity to delve into different subject areas beyond the field of medicine.¹⁴ This enables students to discover their own areas of interest and deepen their knowledge in these areas. Such experiences can help students determine their future career preferences.¹⁰ Internal motivation is an important concept for understanding students' interest and commitment to the learning process.¹⁵ In a study conducted by Ferrer Caja et al.¹⁶ In 2002, they aimed to validate a model that influenced students' internal motivation. They found that students were more eager and engaged in courses they found exciting and enjoyable. Moreover, it was stated that the topics in courses with a high likelihood of selection were within the students' areas of interest.¹⁷ In our study, when we asked students whether their personal interests and current hobbies affect their choice of courses, 47.5% of the students answered "yes," while 12.9% answered "definitely yes" (Table 2). Similarly, medical students responded with "yes" in 55% of the cases and "definitely yes" in 11% of the cases when asked if their personal abilities/interests influence their course selection (Table 2). Female participants significantly answered yes to the question "Does your future academic life affect your choice of course?" This indicates that female students among the participants have a more positive approach to elective courses in our study. Consistent with the literature, it is seen that most medical students are influenced by their areas of interest in their course choices.^{2,14}

Table 1. Demographic characteristics, grades, and age averages of participating students. Chi-Square test.

	INDIVIDUALS	AVERAGE GRADE	AVERAGE AGE
FEMALE	46	85.41 (± 9.77)	20.3 (± 1.18)
MALE	56	88.91 (± 10.12)	20.39 (± 1.24)
TOTAL	102	87.62 (± 10.31)	20.35 (± 0.95)

Medical education is a complex and intensive process. However, each student has a different learning style and pace.⁸ Therefore, providing personalized learning experiences for medical students should be considered an important teaching strategy. Elective courses represent an effective way to provide these personalized experiences in medical education and hold great importance in many aspects.⁴ Elective courses offer students the opportunity to personalize their learning experiences. These courses grant students the freedom to choose courses that align with their own learning needs and goals.² Considering that each student comes to medical education with a different background and has different areas of interest, elective courses offer students the opportunity to select courses that match their interests and abilities.³ This allows students to focus on their areas of interest, potentially making their education more meaningful and satisfying.⁸ Medical specialization is becoming increasingly important, and elective courses provide students with the

opportunity to determine their future areas of expertise and delve deeper into those areas. This can assist students in defining their career goals and may aid them in achieving these goals.⁴ For medical students, elective courses serve as an important tool for personalized learning experiences.¹³ These experiences can increase students' motivation, help shape their career aspirations, and enhance their independent learning skills.¹⁰ Therefore, the emphasis placed on elective courses in medical education can contribute to the successful graduation and future success of students as medical professionals.^{2,4} In our study, when we asked medical students whether their chosen courses contribute to their personal development, we received a 68% affirmative response (Table 2). Similarly, the literature also

emphasizes the positive contributions of personalized learning experiences to the success of medical students. These new methods can lead to the methodological improvement of teaching.^{10,18}

In medical education, elective courses play a significant role and provide various contributions and benefits to students. Students can gain additional knowledge and experience in areas of interest or fields they aspire to specialize in.³ Through elective courses, students have the opportunity to explore different medical specialties and acquire more knowledge in areas that interest them. This helps students make more informed decisions about their future career preferences.¹⁰ Additionally, it can assist medical students in making more suitable choices for their future specialization and accelerating their professional

Table 2. Survey questions and the percentages of responses from students.

	0-9	10-14	15-24	25-30	30+
How many hours do you study per week after school?	35.29%	11.76%	19,6%	30.39%	2.94%
	Yes	No			
Have you experienced semester failure?	6.9%	93.1%			
	Definitely No	No	Undecided	Yes	Definitely Yes
Does your choice of courses depend on your expectations for your future academic life?	8.9%	23.8%	19.8%	43.6%	4%
Does your selection of courses depend on your personal interests and current hobbies?	5.9%	16.8%	16.8%	47.5%	12.9%
Are the opinions of students who have previously taken the course affecting your choice?	16.8%	33.7%	13.9%	30.7%	5%
Does your choice of course take into account your personal abilities?	4%	13%	17%	55%	11%
Do you believe you have sufficient information about the course you selected before making your choice?	4%	35.6%	31.7%	24.8%	4%
Do you think that the course you have chosen contributes to your school grades?	15.8%	46.5%	28.7%	8.9%	0%
Do you believe that the course you have chosen contributes to your social life?	10%	20%	27%	35%	8%
Do you think that the course you have chosen contributes to your personal development?	7%	7%	18%	60%	8%
Do you believe that the course you have chosen will contribute to your future career?	8.1%	15.2%	19.2%	44.4%	13.1%
Would you prefer to choose another elective course instead of the one you selected?	8.2%	28.6%	31.6%	22.4%	9.2%
Do you find the elective course titles in the program sufficient?	9.3%	20.6%	26.8%	39.2%	4.1%
Would you have preferred the course you selected to have more practical content?	4.1%	12.2%	30.6%	34.7%	18.4%
Would you have liked to choose more elective courses than you did?	12.1%	34.3%	21.2%	26.3%	6.1%
The assignments, projects, and activities given in elective courses contribute to our learning effectively.	9,1%	14.1%	38.4%	33.3%	5.1%
Are methods and techniques used in the courses to encourage active student participation?	6.1%	10.1%	35.4%	41.4%	7.1%
Is effective communication between students and instructors ensured in the course?	3.1%	7.1%	23.7%	56.7%	9.3%
Was the instructor who taught the course competent and well-equipped?	0%	1%	17.2%	58.6%	23.2%
Did this course positively influence your knowledge and behavior?	4.1%	8.2%	26.5%	56.1%	5.1%
Are you satisfied with the number of hours of the course you selected?	0%	11.1%	21.2%	60.6%	7.1%

development.⁴ Elective courses also offer students the chance to enhance their problem-solving and critical thinking skills. They encounter various scenarios in different fields, allowing them to practice these skills and reduce their concerns.¹⁹ This can contribute to their effectiveness and competence in medical practice after graduation. Elective courses are also crucial for developing interdisciplinary collaboration skills.¹³ Medical students gain the opportunity to engage with instructors across diverse scientific fields, thereby enriching their comprehension of the multifaceted nature of healthcare and boosting their competency in addressing patient needs. Electing courses aligned with their interests equips these students with advanced preparation and insight as they progress towards their chosen areas of specialization.⁴ Elective courses taken in the early stages of medical education play a critical role in shaping their careers after graduation. For all these reasons, elective courses significantly contribute to the individual and professional development of medical students and are considered an integral part of medical education.^{3,14} Female participants reported that elective courses had a positive impact on their future careers. They expressed a statistically significantly more positive opinion than male participants. In our study, 47.6% of students answered "yes" to the question, "Do your expectations regarding your future academic life affect your choice of courses?" Additionally, 57.5% of students believe that the elective course they chose will contribute to their future careers (Table 2).

In medical education, the importance of elective courses in diversifying learning experiences is quite evident.¹³ Beyond traditional medical courses, elective courses provide students with various learning opportunities. These opportunities allow students to explore different learning environments and pedagogical approaches beyond classroom lectures.¹⁵ Through elective courses, students can be exposed to various learning methods such as case-based learning, laboratory experience, fieldwork, and patient care. This diversity enables students to discover their learning styles and preferences.² Elective courses empower students to determine their own learning preferences and choose courses that align with their choices. This enhances learning motivation and assists students in more effective learning.¹⁵ Moreover, elective courses can make medical education more engaging. Particularly in a demanding and intensive field like medical education, the opportunity for students to learn subjects they are interested in is a significant advantage.¹⁴ This contributes to the more effective training of medical students and equips them to be more competent as future medical professionals. Therefore, elective courses are an integral part of medical education and greatly contribute to students' professional development.²⁰ In our study, 61.2% of the students stated that the elective courses they chose positively influenced their knowledge and behaviors (Table 2).

Within the scope of medical education, elective courses play a significant role in providing students with opportunities to develop independent learning skills. These

courses also offer students autonomy and a sense of self-direction in their education.³ Medical students participating in elective courses are encouraged to take an active role in shaping their educational experiences. They have the chance to create their own study schedules, explore various educational resources, and develop original research projects aligned with their interests and career goals.^{10,21} Elective courses form the foundation of this process focused on enhancing medical students' independent learning skills, providing an indispensable skill set for medical students and future healthcare professionals.¹⁵ These courses expect students to take greater responsibility for their education and encourage them to set personalized learning goals and pursue individualized inquiry paths.²² This process not only promotes a deeper understanding of the subject matter but also enhances critical thinking, problem-solving, and research skills. These scientific endeavors extend beyond mere academic exercises; they serve as a catalyst for the expansion of the students' knowledge base. Engaging in these activities encourages students to delve deeper into their subjects, fostering a robust intellectual curiosity.²¹ Furthermore, elective courses provide a platform for students to engage in scientific activities such as conducting in-depth literature reviews, designing research studies, or participating in clinical investigations. In the course of our research, it was observed that a substantial proportion of the student body, accounting for 38.4%, reported that their educational experience was notably enriched by various components of their elective courses (Table 2). These components included a range of assignments, comprehensive projects, and extensive engagement in scientific activities. This notable percentage of students recognized that these aspects of their elective coursework played a significant role in deepening their understanding and enhancing their learning. The diversity and depth of these assignments and projects, coupled with the practical application of scientific activities, provided a multifaceted educational experience that was instrumental in advancing their academic growth. This multifaceted engagement not only enhances their academic prowess but also prepares them for future challenges in their medical careers. The impact of these activities is profound, as they contribute significantly to the holistic development of the students, shaping them into well-rounded, inquisitive, and competent future healthcare professionals. These scientific activities not only broaden students' knowledge but also contribute to the development of intellectual curiosity.²³

Many medical faculties aim to diversify and personalize education for their students by offering elective courses. These elective courses provide students with the opportunity to gain in-depth knowledge in disciplines outside the core medical curriculum.^{14,20} This allows students the freedom to choose courses aligned with their interests and career goals, enabling them to shape their education according to their objectives.¹⁰ Additionally, elective courses provide students with the opportunity to personalize their learning experiences. These courses

enable students to experiment with different learning styles and methods, potentially making their learning experiences more effective and efficient.²⁰ They offer students greater freedom and experience in learning. By selecting courses related to their interests, students become more motivated, positively impacting their learning processes. Satisfaction can contribute to increased motivation and success among students.^{19,22} Similarly, in our study, 43% of students mentioned that elective courses contributed to their social lives. It is observed that elective courses have a positive impact on satisfaction levels (Table 2).

In our study, when asked the question "Do you think the course you've chosen contributes to your school grades?" 49.1% of women responded negatively, while 79.3% of men gave a negative response. There is a statistically significant difference between women and men in their responses to this question ($p < 0.05$), and women are more optimistic than men about the contribution of the courses they have chosen to their school grades (Table 3).

Table 3. Distribution of Percentage Responses to the Question "Does your future academic life affect your choice of course?", Question "Do you believe that the course you have chosen will contribute to your future career?" and "Was the instructor who taught the course competent and well-equipped?" by Gender and p-value. Chi-Square test.

	Negative	Positive	Undecided	p
Do you think the course you've chosen contributes to your school grades?				
Female	49.1%	10.9%	40.0%	0.009
Male	79.3%	6.5%	15.2%	
Do you believe that the course you have chosen will contribute to your future career?				
Female	9.3%	72.2%	20.0%	0.001
Male	27.3%	18.2%	18.5%	
Was the instructor who taught the course competent and well-equipped?				
Female	0%	94.4%	5.6%	0.002
Male	2.2%	66.7%	31.1%	

For the question "Do you think the course you've chosen will contribute to your future career?" 72.2% of women gave a positive response, while only 40% of men gave a positive response. There is a statistically significant difference between women and men in their responses to this question ($p < 0.05$), and women believe that the courses they have chosen will contribute more to their academic lives than men (Table 3).

When asked the question "Was the instructor of the course sufficient and competent?" 94.4% of women gave a positive response, while 66.7% of men gave a positive response. There is a statistically significant difference between women and men in their responses to this question ($p < 0.05$), and women are more likely than men to think that the instructor of the course was sufficient and competent (Table 3).

When we analyzed the responses to the questions based on the academic achievement, there was only one question where a statistically significant difference was observed. For the question "Does the influence of your expectations for your future academic life affect your choice of course?" 23.5% of students with a grade below 80 gave a positive response, while 52.4% of those with a grade above 80 gave a positive response, and a statistically significant difference was found ($p < 0.05$). There is a positive relationship between students' academic achievement and the contribution of the courses they choose to their academic lives (Table 4).

Education encompasses the holistic development of individuals, acquiring new and necessary skills, being aware of the knowledge they possess, and continuously renewing that knowledge.²⁴ The effectiveness of the education process is greatly influenced by an individual's attitudes toward the educational environment and subjects. The ability of students to develop positive attitudes towards their education and courses is related to the organization of education in line with the interests and needs of the students.^{6,15} Elective courses hold a significant place in medical education because they provide students with the opportunity to explore their interests, experience personalized learning experiences, support their professional development, diversify their learning experiences, enhance their independent learning skills, and increase their satisfaction.¹⁹ We believe that these courses can better prepare medical students and help them progress successfully in their careers.

Table 4. Distribution of Percentage Responses to the Question "Does your future academic life affect your choice of course?" by academic achievement and p-value. Chi-Square test.

Does your choice of course depend on your expectations for your future academic life?	Negative	Positive	Undecided	p
Below 80	52.9%	23.5%	23.5%	0.04
Above 80	28.6%	52.4%	19%	

Limitations

This study has some limitations that should be taken into account. Here are the limitations of this study:

1. **Sample Size:** The study has a limited sample size (102 individuals). Studies conducted with a larger sample size can help in making the results more generalizable.
2. **Voluntary Basis:** This study was conducted on a voluntary basis. The students who agreed to participate may have been selected from a specific group that could potentially affect the results. Therefore, the potential for representing the entire student population in the sample might be limited.
3. **Subjective Responses:** In survey studies, participants respond subjectively to the questions. This means that responses are based on personal opinions or experiences, which can limit objectivity.
4. **Number of Variable:** This study has primarily focused on establishing relationships with specific parameters, which include gender and grade point averages. Adding more parameters or assessing relationships with different variables can contribute to a more comprehensive understanding of the results.

Conclusion

Considering the advantages that elective courses offer to medical education, it can be concluded that these courses increase the satisfaction levels of medical students and enrich their educational experiences.

In conclusion, the majority of students in our study stated that they choose elective courses based on their interests (60.4%). Furthermore, students mentioned that these courses contribute to their future academic life (47.6%), social life (43%), and personal development (68%). They also indicated that elective courses positively affect their abilities (66%).

From all these results, it can be inferred that female students have higher academic expectations compared to male students, make more thoughtful choices when selecting courses, believe that the instructors of the courses are more qualified than male students do, and think that elective courses contribute more to academic life as the students' academic performance increases.

Elective courses provide students with the freedom to choose courses that align with their interests and career goals, allowing them to personalize their learning experiences. Moreover, they help students become more motivated and effectively guide their learning processes. Elective courses offer students the opportunity to experiment with different learning styles and methods, diversifying their learning. Therefore, it can be said that elective courses in medical education increase student satisfaction and contribute to their professional development. Medical faculties and programs should consider integrating elective courses into their curricula more extensively, taking these advantages into account.

Compliance with Ethical Standards

Our study was conducted with ethical approval obtained from Kocaeli University Faculty of Medicine. The ethical approval number is E-80418770-020-408333.

Conflict of Interest

The authors declare no conflicts of interest.

Author Contribution

TÇ, PDK, MDY, EK: Study idea, hypothesis, study design; MDY, EK: Material preparation, data collection and analysis; TÇ, MDY, EK: Writing the first draft of the article; TÇ, EK: Critical review of the article finalization and publication process.

Financial Disclosure

None.

References

1. Norman G. Medical education: past, present and future. *Perspect Med Educ.* 2012;1:6-14. DOI: 10.1007 /s40037-012-0002-7
2. Stys D, Hopman W, Carpenter J. What is the value of global health electives during medical school? *Med Teach.* 2013;35(3):209-218. DOI: 10.3109/0142159X.2012.731107
3. Lumb A, Murdoch-Eaton D. Electives in undergraduate medical education: AMEE Guide No. 88. *Med Teach.* 2014;36(7):557-572. DOI: 10.3109/0142159X.2014.907887
4. Jeffrey J, Dumont RA, Kim GY, Kuo T. Effects of international health electives on medical student learning and career choice. *Fam Med.* 2011;43(1):21-28. PMID: **21213133**
5. Dai A, Wu LQ, Jacobs RC, Raghuram A, Dhar SU. Implementation of a medical school elective course incorporating case-based learning: a pilot study. *Med Sci Educ.* 2020;30:339-344. DOI: 10.1007/s40670-019-00911-1
6. Özdirek S, Cicerali EE. Üniversite öğrencilerinde uzaktan eğitime yönelik tutumlar ile akademik öz-yeterlik arasındaki ilişkiler. *Troyacademy.* 2021;6(3): 836-863. <https://doi.org/10.31454/troyacademy.972045>
7. Vora N, Chang M, Pandya H, Hasham A, Lazarus C. A student-initiated and student-facilitated international health elective for preclinical medical students. *Med Educ Online.* 2010;15(1):4896. DOI: 10.3402/meo.v15i0.4896
8. Lee J, Graham AV. Students' perception of medical school stress and their evaluation of a wellness elective. *Med Educ.* 2001;35(7):652-659. DOI: 10.1046 /j.1365-2923.2001.00956.x
9. Thompson MJ, Huntington MK, Hunt DD, Pinsky LE, Brodie JJ. Educational effects of international health electives on US and Canadian medical students and residents: a literature review. *Acad Med.* 2003;78(3):342-347. DOI: 10.1097/00001888-200303000-00023
10. Keating EM, O'donnell EP, Starr SR. How we created a peer-designed specialty-specific selective for medical student career exploration. *Med Teach.* 2013;35(2): 91-94. DOI: 10.3109/0142159X.2012.731110

11. Holmes D, Zayas LE, Koyfman A. Student objectives and learning experiences in a global health elective. *J Community Health*. 2012;37:927-934. DOI: 10.1007/s10900-012-9547-y
12. Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: a call for more training and opportunities. *Acad Med*. 2007;82(3):226-230. DOI: 10.1097/ACM.0b013e3180305cf9
13. Wiskin C, Barrett M, Fruhstorfer B, Schmid ML, compiled on behalf of the MSC UK Electives Committee. Recommendations for undergraduate medical electives: a UK consensus statement. *Med Educ*. 2018;52(1):14-23. DOI: 10.1111/medu.13445
14. Agarwal A, Wong S, Sarfaty S, Devaiah A, Hirsch AE. Elective courses for medical students during the preclinical curriculum: a systematic review and evaluation. *Med Educ Online*. 2015;20(1):26615. DOI: 10.3402/meo.v20.26615
15. Brami C, Sultan S, Robieux L, Piot MA, Gartili H, Zenasni F. Understanding students' motivations for participating in a mindfulness course: a qualitative analysis of medical students' views. *BMC Complement Med Ther*. 2023;23(1):163. DOI: 10.1186/s12906-023-03949-2
16. Ferrer-Caja E, Weiss MR. Cross-validation of a model of intrinsic motivation with students enrolled in high school elective courses. *J Exp Educ*. 2002;71(1):41-65. DOI:10.1080/00220970209602056
17. Graham KW, Achenreiner G, McDermott M, Crosby E. Is what students want what they really need? A values view of undergraduate marketing elective course offerings. *Mark Educ Rev*. 2020;30(3):140-149. DOI:10.1080/10528008.2020.1773277
18. Kelly L, Walters L, Rosenthal D. Community-based medical education: Is success a result of meaningful personal learning experiences? *Educ Health*. 2014;27(1):47-50. DOI: 10.4103/1357-6283.134311
19. Finkelstein C, Brownstein A, Scott C, Lan Y. Anxiety and stress reduction in medical education: an intervention. *Med Educ*. 2007;41(3):258-264. DOI: 10.1111/j.1365-2929.2007.02685.x
20. Mahajan R, Singh T. Electives in undergraduate health professions training: Opportunities and utility. *Med J Armed Forces India*. 2021;77:S12-S15. DOI: 10.1016/j.mjafi.2020.12.005
21. Svoboda M, Kamal Y, Pinto-Powell R. Science Scholars: integrating scientific research into undergraduate medical education through a comprehensive student-led preclinical elective. *MedEdPORTAL*. 2021;17: 11144. DOI: 10.15766/mep_2374-8265.11144
22. Ramalho AR, Vieira-Marques P, Magalhães-Alves C, Severo M, Ferreira M, Falcão-Pires I. Electives in the medical curriculum—an opportunity to achieve