European Journal of Therapeutics DOI: 10.5152/EurJTher.2017.06074

Original Investigation

Evaluation of attention–motivation level, studying environment and methods of medical faculty students

İlhan Bahşi[1], Murat Çetkin[1], Mustafa Orhan[1], Piraye Kervancıoğlu[1], Semih Sayın[2], Hüseyin Ayan[2]

[1]Department of Anatomy, Gaziantep University School of Medicine, Gaziantep, Turkey

[2]Gaziantep University School of Medicine Student, Gaziantep, Turkey

ABSTRACT

Objective: Evaluating study environments, attention–motivation levels while studying, and studying methods of students is extremely important for obtaining purposed results. This study aimed to determine study environments, attention–motivation levels while studying, and studying methods of medicine faculty students.

Methods: Gaziantep University School of Medicine students completed the questionnaire that included questions regarding study environments, attention–motivation levels, and studying methods. The students were asked 11 open-ended questions and 29 Likert-type questions. Statistical analyses of these questions were performed, and some of the questions correlated among them.

Results: The statistically significant differences were determined between the average grade and questions: "I have difficulty in focusing on the subject before starting to study," "I easily lose concentration while studying," "I use some pharmaceuticals (except vitamins) for increasing my motivation while studying," "I use some pharmaceuticals (except vitamins) for increasing my attention while study," and "I only study during exams." A significant association was also observed between the average grade and the accommodation of students.

Conclusion: Improving the physical conditions of the study environment of medicine faculty students will contribute to increasing their academic success. Making students aware of the components that negatively affect attention and motivation will also positively affect the academic success of students. In addition, determining studying methods of medicine faculty students will contribute to improving personal education strategies.

Keywords: Medical education, study environment, studying method

INTRODUCTION

The goal of medical education is to train doctors who are knowledgeable about the health problems of humanity, and equipped with the knowledge, skills and attitudes to overcome these problems with an inquisitive mind and intellect that allow them to continuously renew and develop themselves (1). Medical education in Turkey begins with a six-year undergraduate program for students who are first required to pass a very difficult examination before being admitted to medical faculties. The undergraduate education program, which forms the basis of the medical education process, is a process that requires dedication and long-term commitment entailing the use of highly expensive equipment, being directly related to saving human lives (2).

It is extremely important for the students to make the most out of their time at the faculty to become good physicians. To achieve that, students put a lot of time and effort into successfully completing their courses and internships. However, unless there is a good study environment, hard work will not be enough in itself to succeed. This success is related to the design of the study environment in such a fashion so as not to cause distractions and the effectiveness of the study method. Optimal learning conditions will help save time and make the learning more permanent, and increase student success. Therefore, it is important to determine the ideal learning strategies and study conditions and share these with students in terms of the improvement of medical education (3).

The purpose of this study is to determine the characteristics of the study environments of medical faculty students, their attention spans and motivation levels in the education process and their learning methods and transfer the acquired knowledge to the medical educational process.

METHODS

Study Population and Sample

No eligibility criteria has been applied to the study population whereby 1st, 2nd and 3rd term medicine students of Gaziantep

This study was presented as a 17th National Anatomy Congress, 5–9 September 2016, Eskişehir, Turkey.

Correspondence Author: İlhan Bahşi **E-mail:** dr.ilhanbahsi@gmail.com

Received: 13.06.2016 • **Accepted:** 05.08.2016

University School of Medicine have been recruited to take part in the survey. The number of students targeted for this descriptive study was 500 and this number has been achieved. Surveys completed by 20 students were disregarded due to inaccuracies, leaving us with 480 survey questionnaires to evaluate.

Ethical Remarks

Permission was obtained from the Gaziantep University Clinical Trials Ethics Committee and the students enrolled in the survey study before the survey was conducted. It was explained to the students that writing their names on the survey forms was optional. Written informed consent was obtained from students who participated in this study.

Data Collection

Students of the Gaziantep University School of Medicine were asked 11 open-ended questions about their age, sex, place of accommodation, what term they are in, in what language their courses are conducted, whether they have repeated any terms, and if so how many, grade point average, average hours of theoretical lectures per week and the average length of study hours during exam periods and other times. In addition, a questionnaire containing 29 questions prepared with the Likert scale was used to determine the study environment of the students, their attention spans and motivation levels and their study methods. Survey questions prepared with the Likert scale had 5 options (4-continuously, 3-frequently, 2-sometimes, 1-rarely 0-never).

Data Analysis

The Student-t test was used for comparison of numerical data in 2 groups while ANOVA and LSD multiple comparison tests were used for comparison in more than 2 groups. Spearman rank correlation coefficient test was used for testing the relations between ordered variables while chi square test was used to test the relations between categorical variables. Analyses were performed using the Statistical package for the Social Sciences 22.0 (IBM Corp.; Armonk, NY, USA). $P<0.05$ was considered statistically significant.

RESULTS

The mean age of the 480 students who participated in the survey was 20.59±1.28 (min: 18-max: 28). 269 (56%) of the students were female and 211 (44%) were male.

The descriptive characteristics of the students, the language of the medical education, their grade point averages and places of accommodation are shown in Table 1. While the students were also asked questions about the length of study hours during exam periods and other times, no descriptive information was given about the duration of the examination period before the survey. Students were asked to work out the process on their own based on their own method of study (Table 1).

The Likert-based questionnaire contains questions about the study environment (1-6 questions), attention spans and motivation levels during study (7-15 questions) and study methods (16-29 questions) and the results are shown in Table 2.

Table 1. Demonstration of the general information of students

General information of students		Number of students (n) – (%)
Gender	Female	269 (56%)
	Male	211 (44%)
	Total	480 (100%)
Academic Term	Term I (Turkish)	86 (17.9%)
	Term I (English)	15 (3.1%)
	Term II (Turkish)	173 (36%)
	Term II (English)	67 (14%)
	Term III (Turkish)	111 (23.1%)
	Term III (English)	28 (5.8%)
	Total	480 (100%)
Repeated Courses	No	437 (91%)
	Yes	43 (9%)
	Total	480 (100%)
Language of the Courses	Turkish	370 (77.1%)
	English	110 (22.9%)
	Total	480 (100%)
Grade point average	0–59	24 (5%)
	60–69	162 (33.8%)
	70–79	199 (41.5%)
	80–100	95 (19.8%)
	Total	480 (100%)
Place of accommodation	State dormitory	88 (18.3%)
	Private dormitory	68 (14.2%)
	Stays with parents	109 (22.7%)
	Lives alone	85 (17.7%)
	Lives with friends	130 (27.1%)
	Total	480 (100%)
The length of study hours during exam periods	None	9 (1.9%)
	0–1 hours	43 (9%)
	1–3 hours	197 (41%)
	More than 3 hours	231 (48.1%)
	Total	480 (100%)
The length of study hours during non–exam periods	None	118 (24.6%)
	0–1 hours	174 (36.3%)
	1–3 hours	124 (25.8%)
	More than 3 hours	64 (13.3%)
	Total	480 (100%)

The gender of students was compared with 29 questions prepared by Likert method and it was determined through 13 questions that there was a statistically significant difference (Table 3).

4 Likert type questions about the study environment of the students allowed a comparison of students' grades. No significant differences in terms of grade point average scores were found

Table 2. Results on the study environments of students, their attention spans and motivation levels in the study process and their learning methods

		Average*	Standard deviation *
1	I use my own room to study	2.64	1.28
2	I use the central library to study	1.44	1.01
3	I use school or hospital study spaces to study	1.61	1.20
4	I use places like canteens and cafeterias to study	0.33	0.69
5	I am pleased with the study environment provided to me by the university	1.67	1.23
6	I think that the study environment has an impact on academic success	3.30	0.81
7	I decide in advance which lesson to study and focus only on that lesson	2.79	1.07
8	I have difficulty focusing on the subject before starting to study	1.61	0.97
9	I get easily distracted while studying	1.56	1.00
10	I drink tea / coffee / energy drinks to increase my motivation while studying	2.54	1.20
11	I drink tea / coffee / energy drinks to improve my focus while studying	2.39	1.27
12	I take various medicines to increase my motivation while studying (except vitamins)	0.29	0.77
13	I take various medicines to increase my focus while studying (except vitamins)	0.27	0.74
14	I find a noisy study environment distracting	0.99	1.10
15	Having my mobile phone with me while studying keeps me distracted	1.49	1.12
16	I attend all classes and study on a daily basis	1.46	1.11
17	I only study during exam periods	2.27	1.23
18	I use time effectively to reach my goals when studying	2.33	1.00
19	Lecture notes are my primary source while studying	3.26	0.80
20	I would rather the course slides contained a well-executed summary of the course content	3.52	0.76
21	I would rather the course slides were shorter	3.10	1.05
22	If the course slides are longer than necessary, my motivation will be adversely affected	0.61	0.90
23	I take notes and underline important points while studying	3.37	0.90
24	I use a variety of materials in addition to the lecture notes (books/atlas/articles/ internet etc.)	2.40	1.17
25	I study by reading out my notes loud	1.66	1.18
26	I find discussing with friends while studying more efficient	2.26	1.16
27	I engage in discussions with friends on the subject I study	1.59	1.05
28	I associate new stuff that I learn with previous learning	2.27	1.06
29	If there are bits I do not understand about a particular subject that I am studying, I go over those bits once before moving on to a new topic	2.12	1.02

* Evaluation of answers given to Likert type questions (4-continuously, 3-frequently, 2-sometimes, 1-rarely, 0-never)

between students studying home in their own rooms, the library and the school-hospital study areas. However, a significant difference (p=0.009) was found in the grade point averages of students who choose cafés or canteens to study (Table 4). A comparison was also made between students choosing to study in places like cafés and canteens and the grade point average subgroups (0-59, 60-69, 70-79, 80-100). According to the obtained data, it was seen that there was a statistically significant difference (p=0.002, p=0.001, p=0.001) between students with a grade point average of 0-59 and students with a grade point average of 60-69 and 70-79 and 80-100 Table 5). There was no significant difference between the groups in the comparison of the students whose grade point averages were 60-69, 70-79 and 80-100. This set of data shows that students with a grade point average of 0-59 prefer to use cafés, canteens, etc. to study.

A statistically significant difference (p=0.001, p=0.001, respectively) was found between the grade point averages of students and the answers to the questions "I have difficulty in focusing on the subject before starting to study" and "I get easily distracted while studying" (Table 4). A comparison was made between the two parameters and the grade point average subgroups. A statistically significant difference was found in the parameters "I have difficulty in focusing on the subject before starting to study" between students with a grade point average of 80-100 and students with other grade point averages (p=0.018 for 59 and be-

Table 3. Examination of the statistically significant parameters ($p<0.05$) between students' gender and Likert type questions

	Gender	Average*	Standard deviation*	p
I decide in advance which lesson to study and focus only on	Female: 269	2.69	1.03	0.016
that lesson	Male: 211	2.92	1.10	
I have difficulty focusing on the subject before starting to study	Female: 269	1.51	0.93	0.010
	Male: 211	1.74	1.01	
I get easily distracted while studying	Female: 269	1.46	1.01	0.018
	Male: 211	1.68	0.99	
I drink tea / coffee / energy drinks to improve	Female: 269	2.52	1.20	0.009
my focus while studying	Male: 211	2.21	1.34	
I find a noisy study environment distracting	Female: 269	0.88	1.08	0.008
	Male: 211	1.15	1.12	
Having my mobile phone with me while studying	Female: 269	1.31	1.06	0.001
keeps me distracted	Male: 211	1.72	1.14	
I attend all classes and study on a daily basis	Female: 269	1.30	1.08	0.001
	Male: 211	1.69	1.12	
I only study during exam periods	Female: 269	2.38	1.18	0.029
	Male: 211	2.13	1.29	
I use time effectively to reach my goals when studying	Female: 269	2.25	0.96	0.047
	Male: 211	2.43	1.06	
Lecture notes are my primary source while studying	Female: 269	3.39	0.64	0.001
	Male: 211	3.13	0.95	
I take notes and underline important points while studying	Female: 269	3.47	0.82	0.010
	Male: 211	3.26	0.98	
I study by reading out my notes loud	Female: 269	1.88	1.20	0.001
	Male: 211	1.38	1.09	
I associate new stuff that I learn with previous learning	Female: 269	2.13	1.07	0.002
	Male: 211	2.44	1.03	

* Evaluation of answers given to Likert type questions (4–continuously, 3–frequently, 2–sometimes, 1–rarely, 0–never)

low, p=0.001 for 60-69, p=0.001 for 70-79) (Table 5). A statistically significant difference was found in the parameters "I get easily distracted while studying" between students with a grade point average of 80-100 and students with other grade point averages (p=0.033 for 59 and below, p=0.001 for 60-69, p=0.001 for 70-79) (Table 5). This shows that students with a grade point average of 80-100 find it easier to focus on the subject than other students and have longer attention spans.

There was a statistically significant difference (p=0.001, p=0.001) between answers to the questions "I use a variety of medications to increase my motivation when I am studying (except vitamins)" and "I use a variety of medications to help focus my attention when I am studying (except vitamins)" and the grade point averages of the students (Table 4). The grade point average subgroups were compared using the two parameters and it was found that there was a significant difference (p=0.001 for all subgroups) between students with a Grade Point Average between 0-59 and those with other grade point averages (Table 5). These data show that students with a Grade Point Average of between 0-59 use more medication than other students to increase their attention and motivation. In general, however, students have been found to rarely use medication to increase their attention and motivation.

There was a statistically significant difference (p=0.001) between the grade point average of the students and the parameter "I

Table 4. Examination of the statistically significant parameters (p <0.05) between students' grade point average and Likert type questions

	Grade point average (out of 100)	Average*	Standard deviation*	p
I use places like canteens and cafeterias to study	59 and below	0.79	1.10	0.009
	60–69	0.32	0.65	
	70–79	0.31	0.68	
	80 and above	0.27	0.63	
	Total	0.33	0.69	
I have difficulty focusing on the subject before starting to study	59 and below	2.46	0.88	0.001
	60–69	2.64	1.00	
	70–79	2.40	0.94	
	80 and above	1.95	0.88	
	Total	2.39	0.97	
I get easily distracted while studying	59 and below	2.46	0.83	0.001
	60–69	2.62	1.04	
	70–79	2.51	0.95	
	80 and above	1.95	0.96	
	Total	2.44	1.00	
I take various medicines to increase my motivation while studying (except vitamins)	59 and below	0.96	1.33	0.001
	60–69	0.35	0.84	
	70–79	0.27	0.69	
	80 and above	0.06	0.43	
	Total	0.29	0.77	
I take various medicines to increase my focus while studying (except vitamins)	59 and below	1.00	1.38	0.001
	60–69	0.30	0.77	
	70–79	0.26	0.66	
	80 and above	0.06	0.43	
	Total	0.27	0.74	
I only study during exam periods	59 and below	2.38	1.06	0.001
	60–69	2.54	1.10	
	70–79	2.20	1.24	
	80 and above	1.91	1.38	
	Total	2.27	1.23	

* Evaluation of answers given to Likert type questions (4–continuously, 3–frequently, 2–sometimes, 1–rarely, 0–never)

only study during exam periods" (Table 4). A comparison of subgroups showed no significant difference between the groups.

There was no statistically significant difference between the accommodation choice of the students and the parameter "I get easily distracted while studying" (p=0.445). Therefore, it was seen that there was no significant difference in terms of attention spans of students staying at a private dormitory, state dormitory, parent's house, sharing room with a friend or living alone.

There was a statistically significant relationship between the students' grade point average and the place of residence (p=0.001), and 23.8% of the cases of changes in the grade point averages were accounted for by the place of residence through a statistical analysis with a symmetrical measurement. According to the statistical analysis, it was seen that the grade point average of students staying at a state or private dormitory was higher than the grade point average of students living with their parents, living alone at a house, or sharing a house with their friends.

Table 5. Examination of the statistically significant results ($p<0.05$) of the parameters in Table 4 in relation to comparison of the subset of grade point averages

	Grade point average	Grade point average	P
Using places like canteens and cafeterias to study	59 and below	60–69	0.002
		70–79	0.001
		80 and above	0.001
I have difficulty focusing on the subject before starting to study	80 and above	59 and below	0.018
		60–69	0.001
		70–79	0.001
Getting easily distracted while studying	80 and above	59 and below	0.033
		60–69	0.001
		70–79	0.001
I take various medicines to increase my motivation while studying	59 and below	60–69	0.001
(except vitamins)		70–79	0.001
		80 and above	0.001
I take various medicines to increase my focus while studying	59 and below	60–69	0.001
(except vitamins)		70–79	0.001
		80 and above	0.001

It was determined that there was no significant relationship between the grade point average of the students and the average study hours during non-exam periods ($r=0.075$, $p=0.102$). It was also determined that there was no significant relationship between the grade point average of the students and the average length of study hours during exam periods ($r=0.047$, $p=0.303$).

It was found that there was a very weak correlation in a positive direction between what term a student is in and the average length of study hours during exam periods ($r=0.167$, $p=0.001$). According to the data, the students in the upper classes probably need to study more due to the intensity of their courses.

DISCUSSION

In our country, student doctors go through a long and challenging education process in medical faculties. In the process, the students are offered training models with different learning strategies which aim at enabling them to achieve optimum success by helping them use their time effectively. However, students' study environments, their attention spans, motivation levels and learning methods are important parameters contributing to academic success.

In medical education, it is imperative for students to have the appropriate physical conditions in terms of social and study environment. However, studies show that the level of satisfaction of medical faculty students about the physical conditions is very low in our country. 86.1% of the senior students of Istanbul University Faculty of Medicine stated that the state of social and educational spaces such as lecture halls and the library were not in good condition (4). In another study, 61.3% of second-year students of the Scholl of Medicine of Fırat University stated that the library was inadequate (5). Similarly, the study found that the satisfaction level of the students with the study environment presented to them was very low. Furthermore, it was determined that students preferred not to study in study areas inside the hospital and the faculty and the central library (Table 2). These results are in agreement with students' negative views about physical conditions. The majority of students prefer to study in their own rooms. While places like cafés and canteens are not much preferred as places of study, it was also seen that the academic achievement of students who prefer to work in such places was lower. In light of these results, we think that the physical conditions of the study spaces of students should be improved. We also believe that students should be made aware of the negative impact of unsuitable study environments on academic results.

Attention is a complex cognitive process, whereby other distracting stimuli are ignored when one deals with a subject that is of importance to him (6). Motivation is also one of the important factors that determines the direction, intensity, and determination of student's behavior and the speed with which educational goals are achieved (7). Motivation indicates the amount of time that a student wants to spend in a particular learning situation and affects his / her ability to study (8). Attention and motivation, which are the basic components of learning, also have positive effects on memory (9). Attention and motivation can be influenced by different internal and environmental factors in the learning process. A study by Shah and Saleem (10) on secondary school students found that students with high levels of attention had a high academic achievement. The same study found that anxiety, a negative home environment, lengthy lessons, and financial-health issues were the main factors negatively affecting attention spans. The same study found that the proportion of students experiencing attention problems when

studying was very high. It was also determined that students with low academic achievement experienced problems associated with lack of attention and focus while studying. It was seen that mobile phones and noisy environments had a negative impact on the attention spans of students. The fact that students prefer tea, coffee and energy drinks instead of medication to increase their attention and motivation levels shows that there is a certain level of awareness about the irresponsible use of medications. However, students with lower academic achievement are more interested in resorting to medication than those who have a higher grade point average. This shows that some students are willing to put their health at risk in order to increase their attention spans and motivation. We believe that providing correct guidance for the student group with a low academic achievement level will help reduce the tendency of such students to resort to medication for success.

This study found that the students usually study during the exam periods rather than on a daily basis, which may be due to the committee system applied. We think that making an exam covering all the subjects at the end of the committee discourages students from studying on a daily basis. On the other hand, although students who participated in the study prefer to study exclusively during the exam periods, most of the students think that they use their time effectively. Contrary to the findings of this study, Tümkaya and Bal (11) stated that medical faculty students allocated less time for efficient study and had lower attendance rates than the other faculty students.

The identification of the learning strategies of medical school students is important in terms of the improvement of teaching methods that are offered to them. Students use lecture notes (course slides) as their main source and would rather these slides were shorter. Another study on medical faculty students found that lecture notes were the most common educational material used by students (12). Therefore, lecture course notes should be succinct and relevant because they are important in terms of motivating the students to study more. Medical students mostly prefer to study by underlining important points and taking notes (3). In this study, it was observed that students mostly used this method while they were studying.

CONCLUSION

The improvement of the physical conditions of the study areas of medical faculty students who go through a challenging educational process will contribute to increased academic achievement. Raising awareness about the factors that affect the attention spans and motivation of the students will also have a positive effect on their academic achievements. The identification of learning strategies of medical school students will contribute to the development of subjective educational strategies. We believe that the data obtained from this study will be useful in determining the plans and strategies to improve the academic achievement of medical faculty students.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Gaziantep University Clinical Trials Ethics Committee (Decision no:2015/343).

Informed Consent: Written informed consent was obtained from students who participated in this study.

Peer-review: Externally peer-reviewed.

Author contributions: Concept - İ.B., M.O.; Design - İ.B., M.Ç., M.O.; Supervision - P.K., M.O.; Resource - İ.B., M.Ç., M.O., P.K.; Materials - İ.B., M.Ç., M.O., P.K.; Data Collection and/or Processing - İ- İ.B., S.S., H.A.; Analysis and/or Interpretation - İ.B., M.Ç., M.O., P.K.; Literature Search - İ.B., M.Ç., S.S., H.A.; Writing - İ.B., M.Ç.; Critical Reviews - P.K., M.O., M.Ç., S.S., H.A.

Acknowledgements: The authors thank to Seval Kul, MD for performing the statistical analysis of this study.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

1. Yakıncı C, Almiş H, Kavruk H. Tıp eğitiminde hikâyenin gücü. Çocuk Sağlığı ve Hastalıkları Dergisi 2012; 55: 211-5.
2. Uskun E, Doğan M, Kişioğlu AN, Baylan S, Uzun E, Akkaya VB. Opinions and practice of teachers on medical education in Süleyman Demirel University Medical Faculty. SDÜ Tıp Fakültesi Dergisi 2004; 11: 19-24.
3. Baykan Z, Naçar M, Mazıcıoğlu M. Effect of learning strategies on success of student's. Erciyes Tıp Dergisi 2007; 29: 220-7.
4. Yalçınoğlu N, Kayı İ, Işık Ş, Aydın T, Zengin Ş, Karabey S. The views of intern doctors on medical education in İstanbul Faculty of Medicine, İstanbul University. İstanbul Tıp Fakültesi Dergisi 2012; 75: 41-5.
5. Edirne T, Deveci A, Kolusarı A, Can T. Medical faculty class 2 students and medical education. Van Tıp Dergisi 2008; 15: 18-22.
6. Lamba S, Rawat A, Jacob J, Arya M, Rawat J, Chauhan V, Panchal S. Impact of teaching time on attention and concentration. IOSR Journal of Nursing and Health Science (IOSR-JNHS) 2015; 3: 1-4. [CrossRef]
7. Akbaba S. Eğitimde motivasyon. Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi 2006: 343-61.
8. Bay E, Tuğluk MN, Gençdoğan B. Üniversite öğrencilerinin ders çalışma becerilerinin incelenmesi. Türk Eğitim Bilimleri Dergisi 2004; 2: 223-34.
9. Steinert Y, Snell LS. Interactive lecturing: strategies for increasing participation in large group presentations. Medical Teacher 1999; 21: 37-42. [CrossRef]
10. Shah SMH, Saleem S. Level of Attention of Secondary school students and ıts relationship with their academic achievement. Journal of Arts and Humanities 2015; 4: 92-106.
11. Tümkaya S, Bal L. An evaluation of Çukurova University students have study habits with some variables. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 2006; 15: 313-26.
12. Öğetürk M, Kavaklı A, Kuş İ, Songur A, Zararsız İ, Sarsılmaz M. Tıp öğrencileri nasıl bir anatomi eğitimi istiyor? Tıp Eğitimi Dünyası 2003; 10: 7-13.

How to cite:

Bahşi İ, Çetkin M, Orhan M, Kervancıoğlu P, Sayın S, Ayan H. Evaluation of attention–motivation level, studying environment and methods of medical faculty students. Eur J Ther 2017; 23(1): 1–7.