



# Professional Attitudes of Third-Year Medical Students: A Cross-Sectional Study

## Tıp Fakültesi Üçüncü Sınıf Öğrencilerinin Profesyonellik Tutumları: Kesitsel Bir Çalışma

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### Abstract

**Introduction:** Medical professionalism is one of the areas of competence in undergraduate and postgraduate medical education. In this study, we aimed to determine the medical professionalism attitudes of third-year medical students and to investigate the effect of gender, reason for preference, and presence of a doctor in the family on these attitudes.

**Materials and Methods:** A cross-sectional study was carried out with 331 third-graders who volunteered. Data was collected in 17.02.2020. As data collection tools, the Penn State School of Medicine (PSCOM) professionalism questionnaire-student form and a short sociodemographic information form were used. Data were analyzed using the SPSS 20.0 software (SPSS Inc., Chicago, IL, USA) program.

**Results:** The average age of students was  $21.45 \pm 2.00$ , and 168 (50.8%) of them were female. Average attitude scores are found as, for accountability  $30.29 \pm 4.19$  (7-35), enrichment  $24.88 \pm 3.78$  (6-30), equity  $18.26 \pm 2.12$  (4-20), honor and integrity  $36.37 \pm 3.87$  (8-40), altruism  $13.11 \pm 1.90$  (3-15), duty  $21.92 \pm 2.80$  (5-25), respect  $9.05 \pm 1.25$  (2-10). Professional attitude scores of female students were higher than men's, students who chose the medical school for their ideal and to help people had significantly higher scores than students who preferred it for other reasons. No significant difference was found between attitude scores of students with and without the presence of a doctor in their family.

**Conclusion:** Third-year medical students have a positive attitude towards professionalism. While gender and medical school preference were effective on these attitudes, the presence of doctors in the family was not found to be effective.

**Keywords:** Medical student; medical education; medical professionalism; attitude.

### Özet

**Amaç:** Sağlık profesyonellerinin mesleklerini yerine getirirken uymaları gereken tutum, değer ve davranışların bütünü olan tıbbi profesyonellik, mezuniyet öncesi ve sonrası tıp eğitimi için yeterli alanlarından biridir. Bu çalışmada, tıp fakültesi üçüncü sınıf öğrencilerinin tıbbi profesyonellik tutumlarının belirlenmesi, cinsiyet, tıp fakültesini tercih nedeni ve ailede doktor bulunmasının bu tutumlar üzerine etkilerinin araştırılması amaçlanmıştır.

**Gereç ve Yöntem:** Gönüllü, 331 tıp fakültesi üçüncü sınıf öğrencisiyle kesitsel bir çalışma yapıldı. Veriler 17.02.2020 tarihinde toplandı. Veri toplama aracı olarak kısa bir sosyodemografik bilgi formu ile Pensilvanya Eyalet Üniversitesi Tıp Fakültesi (PSCOM) profesyonellik ölçeği öğrenci formu kullanıldı. Veriler SPSS 20.0 programı (SPSS Inc., Chicago, IL, ABD) programı kullanılarak analiz edildi.

**Bulgular:** Katılımcıların yaş ortalaması  $21.45 \pm 2.00$  ve 168'i (50.8%) kadındı. Ortalama tutum puanları hesap verebilirlik  $30.29 \pm 4.19$  (7-35), zenginleştirme  $24.88 \pm 3.78$  (6-30), hakkaniyet  $18.26 \pm 2.12$  (4-20), onur ve şeref  $36.37 \pm 3.87$  (8-40), özgeçmiş  $13.11 \pm 1.90$  (3-15), ödev  $21.92 \pm 2.80$  (5-25) ve saygı alt boyutları için  $9.05 \pm 1.25$  (2-10) olarak bulundu. Kadın öğrencilerin profesyonellik tutum puanları erkeklerden, tıp fakültesini ideali olduğu için ve insanlara yardım etmek için tercih eden öğrencilerin puanları diğer nedenlerle tercih yapan öğrencilerden anlamlı şekilde yüksekti. Ailede doktor bulunan ve bulunmayan öğrencilerin profesyonellik tutumları arasında anlamlı fark saptanmadı.

**Sonuç:** Tıp fakültesi üçüncü sınıf öğrencilerinin profesyonelliğe karşı tutumları olumludur. Cinsiyet ve tıp fakültesini tercih nedeni bu tutumları üzerine etkili iken, ailede doktor bulunması etkili bulunmamıştır.

**Anahtar Kelimeler:** Tıp öğrencisi; tıp eğitimi; tıbbi profesyonellik; tutum.

### Introduction

Medical professionalism is all of the professional behaviors which proves that physicians deserve patient and public trust while working for the patient's benefit and public interest (1). Numerous definitions have been made until today, but in the most abstract way medical professionalism can be described as "a whole set of attitudes, values, and behaviors that health professionals must follow when performing their professions" (1). The role of the physician has evolved over the years from

healing to professionalism, the concept of medical professionalism has also been accepted as "A medical contract with society", "Hippocratic Oath of the New Millennium" (1). In medical professionalism, the physician has responsibilities towards the patient, society, himself, and the profession. A physician must act accordingly with these responsibilities. Medical professionalism is a good sum of values. According to this, the interest of the patient and the benefit of the public; comes before the physician's interests (1). Medical

professionalism is an area of proficiency for both pre-graduation and post-graduation medical education and a requirement for accreditation boards (1, 2). Many health organizations such as the American Board of Internal Medicine (ABIM), General Medical Council (GMC) and American Association of Medical Colleges (AAMC) have accepted the importance of professionalism and defined the basic elements of professionalism (1, 3, 4). In our country, the National Medical Education Accreditation Board has determined professionalism as one of the basic physician roles (5). Although it's a topic that has been frequently discussed in medical education lately, there are shortcomings in a common understanding of medical professionalism for some reasons such as having more than one definition and meaning and being influenced by different cultures (6). To teach and evaluate professionalism through an appropriate curriculum, its components must be clearly defined (7). Medical professionalism is an inclusive concept that incorporates a common set of behaviors and attitudes. These behaviors and attitudes are the values and features like "medical knowledge, excellence, good intentions, abuse of power and duty, non-discrimination, keeping the interests of the patient and society above their interests, acting ethically, not ripping off, dedication, respect, trust, honesty, compassion, honor, accountability, knowing their limits, respecting patient rights and protecting the rights of patients, being moral, being sensitive, being humble, responsibility, virtue, leadership". Basic human values such as keeping patient interests ahead of their own, devotion to high ethical standards, excellence, the responsibility of physicians for the behavior of themselves and their colleagues, respond to social needs and behaviors that reflect a contract for community service, lifelong learning, sacrifice, empathy are also among them (1, 6). The American Board of Internal Medicine has defined six components for professionalism, which are "1) sacrifice 2) responsibility 3) excellence 4) duty 5) honor and honesty and 6) respect" (8). Studies show that professionalism significantly affects patient care and safety (9, 10). Inappropriate, unprofessional behavior threatens the health and safety of patients. This situation makes professionalism a competence area for medical students who are doctors of the future (11). It is recommended to teach, evaluate and monitor medical professionalism in the undergraduate, and postgraduate period (12). Professionalism is also included among the competencies of medical school graduates in the National Core Education

Program before graduation in our country (13). "Professionalism" is defined among the graduate qualifications at the Atatürk University, Faculty of Medicine (14). As the faculty, our goal for our students is to be aware of professional identity and obligations, communication, professionalism and to graduate as adequate and competent physicians. Professionalism is the foundation of trust in patient-physician relations; however, evidence focusing on the professional attitudes of medical students is limited. Since professionalism is a field of competence, the effectiveness of the program applied and how much targets can be achieved should be evaluated regularly. Since the concept of professionalism is influenced by many factors, it is complex and difficult to evaluate. Various methods such as standardized-simulated patient interviews, role-play practices, portfolio, self-evaluation (questionnaires and attitude scales), positive and negative case studies, reflections, report writing, 360° evaluation, per-patient observation in the clinic can be used in evaluation (15, 16). Although studies on the professionalism of medical students have increased in recent years, these studies appear to focus more on the perceptions and thoughts of students (17, 18). A measurement tool with proven validity and reliability allows evaluating students' attitudes towards professionalism, to investigate the effects of time and various other factors on these attitudes, evaluating the effectiveness of the training program (7). In our institution, a study in which the professional attitudes of medical students are evaluated with the scale of professionalism of Pennsylvania State University School of Medicine (PSCOM) was not done before. In this study, it is aimed to determine the professional attitudes of third-year students of the medical school, and investigate the effects of gender, the reason for choosing a medical school, and the effects of having a doctor in the family on these attitudes.

## Materials and Methods

**Ethical approval:** Ethical permissions were taken from the Atatürk University Clinical Research Ethical Committee (IRB No:08/32, Date: 26.12.2019) The study was carried out by following the rules of the Helsinki Declaration.

**Study setting and population:** A cross-sectional study was carried out with the third-year students of Atatürk University Faculty of Medicine. Participation in the study was provided voluntarily. Data was collected in 17.02.2020 in the medical professionalism practical course.

**Table 1:** PSCOM Sample items for subdimensions of professionalism attitude scale

Scale subdimensions	Sample items
Accountability	Knows their limitations.
Enrichment	Supports the well-being and development of younger team members than himself/herself.
Equity	Adopts equal and fair standards inpatient care.
Honor and integrity	Do not accept violations of the personal and professional code of conduct.
Altruism	Shows compassion.
Duty	Respects patient autonomy and helps them make decisions while being informed.
Respect	Avoids offensive rhetoric that leads to unkind comments and unfair criticism of others

**Table 2:** PSCOM professionalism scale subdimensions and features

Scale subdimensions	Number of items	Cronbach alfa	Min-max score
Accountability	7	0.86	7-35
Enrichment	6	0.82	6-30
Equity	4	0.85	4-20
Honor and integrity	8	0.86	8-40
Altruism	3	0.78	3-15
Duty	5	0.78	5-25
Respect	2	0.68	2-10

**Table 3:** Sociodemographic characteristics of students

Variable		Count (n)	Percent (%)
Gender (n=331)	Male	163	49.24
	Female	168	50.76
Reason for preference (n=331)	Ideal	168	50.77
	The desire to help people	66	19.94
	Influenced by doctors	7	2.11
	Dignity	31	9.37
	Economic reasons	18	5.44
	Family referral	37	11.17
	Teacher referral	4	1.20
Presence of a doctor in the family (n=331)	There is	132	39.87
	None	199	60.13

After students who attended the course were informed about the study and its purpose, they were invited to participate. Students who volunteered after the course participated in the study. Informed consent of the students was obtained. Answering the survey took about 15 minutes.

**Study size:** The sample was not used in the study as it was aimed to reach all of the students. 380 third-year students who participated in a professional hands-on course were invited to participate in the survey. 45 of the students did

not participate in the study. Four people were not assessed because they left the survey incomplete. As a result, the complete data of 331 volunteer students were evaluated. 87% of the universe has been reached.

**Data collection tools:** A questionnaire that includes two parts was used to collect the data. In the form those parts are, 1) sociodemographic characteristics, 2) Pennsylvania State University Faculty of Medicine Professionalism Scale-Student Form (PSCOM-SF).

**Sociodemographic characteristics:** A short demographic information form (age, gender, the reason for choosing the medical school, and presence of doctors in the family (mother, father, siblings, and close relative) were asked.

**Pennsylvania State University Medical School professionalism scale student form (PSCOM-SF):** It is a scale developed by PSCOM to assess the professional attitudes of medical students (19). The adaptation of the scale to Turkish, validity and reliability studies were carried out by Demirören et al. (2015) (20). There are 36 items, and 7 subdivisions on the scale that reflect the professionalism elements of ABIM. Scale is answered and rated according to the 5-point Likert system (never-1 point, ..... largely-5 points). There are no items scored in reverse on the scale. The points for each subdivision are collected in itself and the total points of that subdivision are obtained. The higher the score in each

subdivision, the more positive the professional attitudes are considered. Total points are obtained by collecting the points of all dimensions. Sample items for scale subdivisions are shown in Table 1. It has been reported that the scale can be used to determine the professional attitudes of medical students, to monitor their change over time, to detect attitude changes before and after educational interventions, to evaluate and improve the educational program (20). Cronbach alpha levels of the scale range from 0.68-0.86. Scale subdivisions, item counts, internal consistency, and scores from each subdivision are shown in Table 2. The lowest reliability coefficient (0.51) at the original scale was achieved for respect subdivision. However it is noted that the factor load is also the lowest due to the low number of items of this dimension, so items can be added to the respect subdivision.

**Table 4:** Professional attitude scores of participants

Scale subdivisions	Mean $\pm$ SD	Med (min-max)	Number of items	Score
Accountability	30.29 $\pm$ 4.19	31.00 (13-35)	7	7-35
Enrichment	24.88 $\pm$ 3.78	25.00 (14-30)	6	6-30
Equity	18.26 $\pm$ 2.16	19.00 (11-20)	4	4-20
Honor and integrity	36.37 $\pm$ 3.87	38.00 (17-40)	8	8-40
Altruism	13.11 $\pm$ 1.90	14.00 (6-15)	3	3-15
Duty	21.92 $\pm$ 2.81	22.00 (10-25)	6	6-30
Respect	9.05 $\pm$ 1.26	10.00 (3-10)	2	2-10
Total	163.88 $\pm$ 9.97	159 (74-175)	36	36-180

SD standard deviation

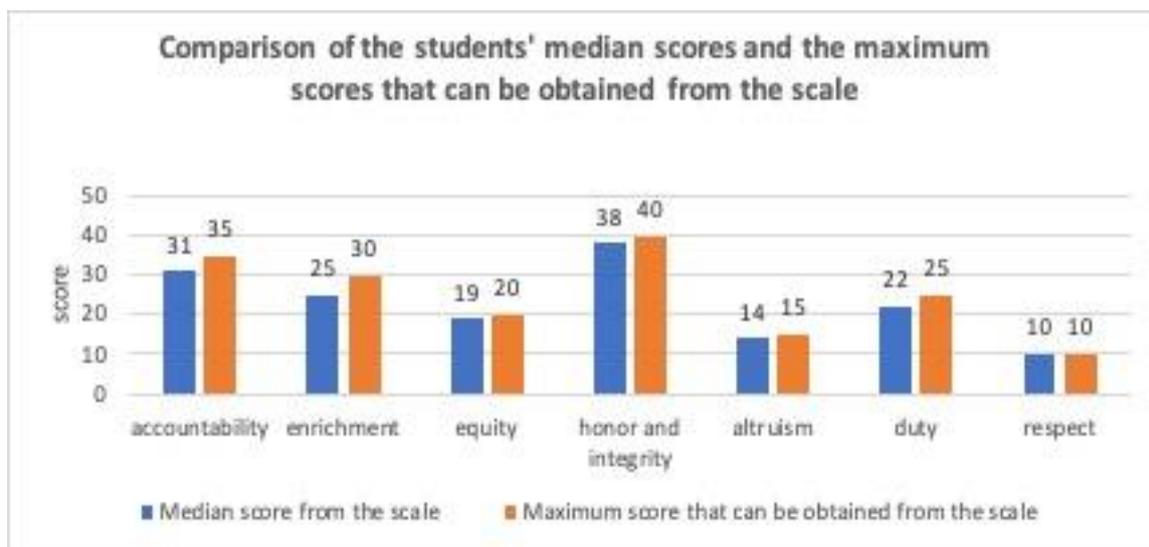


Figure 1. Comparison of the students' median scores and the maximum scores that can be obtained from the scale

The reliability level of the respect sub-dimension was found to be low in the Turkish version of the scale (0.46), and it was emphasized that the items belonging to this sub-dimension should be approached carefully. In our study, the internal consistency of respect subdivision substances was found 0.68 (Table 2).

**Statistical analysis:** Data were analyzed using the SPSS 20.0 software (SPSS Inc., Chicago, IL, USA) program. Data presented as average, standard deviation, median, minimum, maximum, percentage, and number. The suitability of the data to the normal distribution was checked by the Kolmogorov Smirnov test. Man-Whitney U test was used in comparisons of data that did not meet normal distribution. Test reliability was estimated

using Cronbach  $\alpha$ . A p-value of  $<0.05$  was considered statistically significant.

## Results

### Participants sociodemographic characteristics:

The mean age of the participants was  $21.45 \pm 2.00$ , and 168 (50.8%) were female. 50.8% of the students preferred medical school since it was their ideal, 19.9% preferred to help people. 60% of the students didn't have a doctor in their family. Sociodemographic characteristics that belong to the students are presented in Table 3. Students' scores from each subdivision of the scale were shown in Table 4, Figure 1. Mean attitude scores of female students were significantly higher than male students for all sub-dimensions ( $p < 0.05$ , Table 5, Figure 2).

**Table 5:** Attitude scores by gender

Scale subdimensions	Gender	n	Mean $\pm$ SD	Med (min-max)	P
Accountability	Male	163	29.51 $\pm$ 4.47	30(13-35)	0.001
	Female	168	31.05 $\pm$ 3.75	32(14-35)	
Enrichment	Male	163	23.99 $\pm$ 4.07	24(14-30)	0.001
	Female	168	25.74 $\pm$ 3.25	26(15-30)	
Equity	Male	163	17.77 $\pm$ 2.48	18(11-20)	0.001
	Female	168	18.73 $\pm$ 1.66	20(13-20)	
Honor and integrity	Male	163	35.66 $\pm$ 4.17	37(17-40)	0.001
	Female	168	37.05 $\pm$ 0,43	38(21-40)	
Altruism	Male	163	12.69 $\pm$ 2.14	13(6-15)	0.001
	Female	168	13.53 $\pm$ 1.52	14(9-15)	
Duty	Male	163	21.29 $\pm$ 3.03	22(10-25)	0.001
	Female	168	22.53 $\pm$ 2.42	23(13-25)	
Respect	Male	163	8.75 $\pm$ 1.42	9(3-10)	0.001
	Female	168	9.33 $\pm$ 1.42	10(5-10)	

SD standard deviation

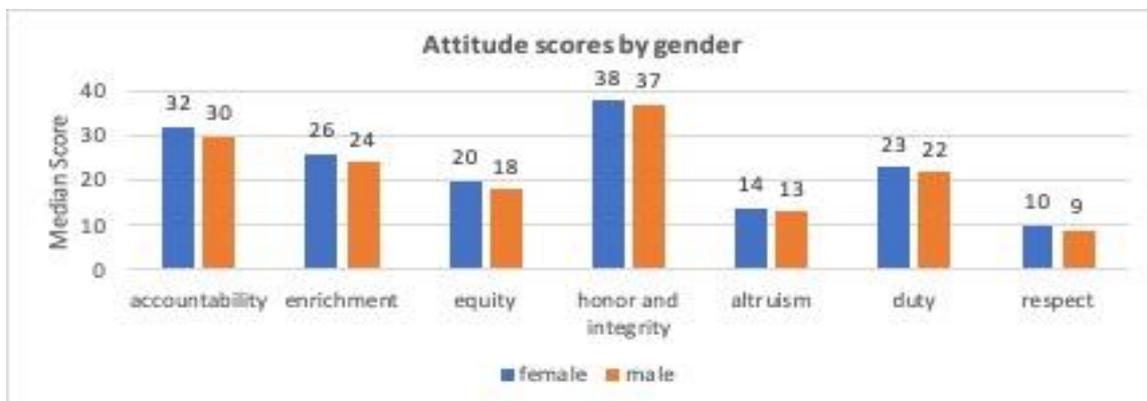


Figure 2. Comparison of the students' attitude scores according to the gender

**Table 6:** Attitude scores based on reasons for preference

Scale subdimensions	Reasons for preference	n	Mean $\pm$ SD	Med(min-max)	p
Accountability	Ideal/ to help people	234	30.82 $\pm$ 3.695	32(14-35)	0.027
	Other	97	29.03 $\pm$ 4.997	29(13-35)	
Enrichment	Ideal/ to help people	234	25.4 $\pm$ 3.414	26(14-30)	0.001
	Other	97	23.62 $\pm$ 4.312	24(14-30)	
Equity	Ideal/ to help people	234	18.51 $\pm$ 1.915	19 (12-20)	0.001
	Other	97	17.64 $\pm$ 2.571	18(11-20)	
Honor and integrity	Ideal/ to help people	234	36.9 $\pm$ 3.218	38(22-40)	0.001
	Other	97	35.09 $\pm$ 4.914	37(17-40)	
Altruism	Ideal/ to help people	234	13.38 $\pm$ 1.656	14(7-15)	0.001
	Other	97	12.47 $\pm$ 2.273	13(6-15)	
Duty	Ideal/ to help people	234	22.33 $\pm$ 2.402	23(14-25)	0.001
	Other	97	20.92 $\pm$ 3.415	21 (10-25)	
Respect	Ideal/ to help people	234	9.26 $\pm$ 1.037	10 (5-10)	0.001
	Other	97	8.54 $\pm$ 1.562	9 (3-10)	

SD standard deviation

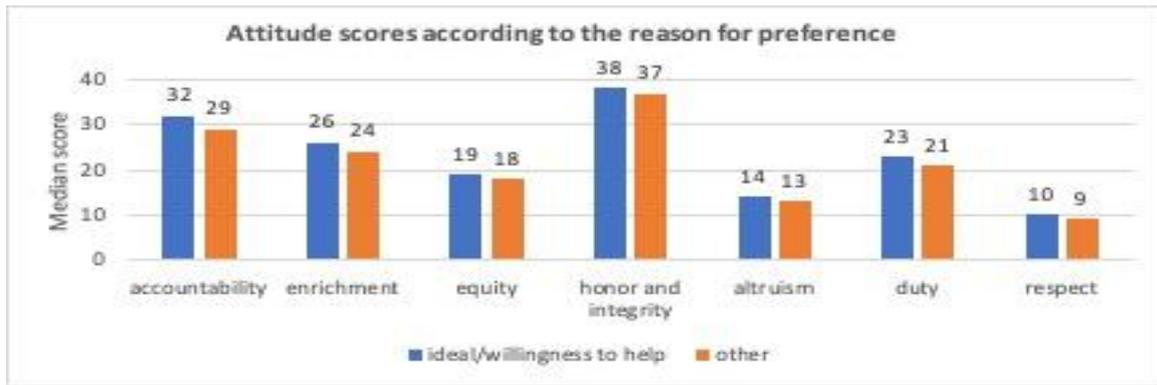


Figure 3. Comparison of the students' attitude scores to the reason according for preference

To assess the effect of reasons for preference on professional attitudes, students were divided into two groups as those who chose the medical school to help people because it was their ideal and those who chose for other reasons. 70.7% of the students who participated in our study (n= 234) preferred medical school because it was their ideal and to help people. The professional attitude scores of the students in this group were found to be significantly higher than those who preferred for other reasons for all sub-dimensions ( $p < 0.05$ , Table 6, Figure 3). There was no statistically significant difference between attitude scores of students with and without the presence of doctors in their families (Table 7, Figure 4).

## Discussions

In this study, which investigated the professional attitudes of third-year students of medical school, it was observed that the attitudes of the students towards professionalism were positive, their average scores were good and close to the highest scores that could be obtained for all sub-dimensions. Studies which are evaluating medical students with PSCOM-SF are very limited in the national literature (20, 21). In our study, the professionalism attitude scores of the students were found to be higher than the scores which obtained in studies conducted in our country (20, 21) and in a study with preclinical students made in Pakistan (17). In this difference, it is thought that professionalism may have

**Table 7:** Attitude scores based on presence of a doctor in the family

Scale subdimensions	Presence of a doctor in the family	n	Mean $\pm$ SD	Med (min-max)	p
Accountability	There is	234	30.39 $\pm$ 4.04	31(13-35)	0.879
	None	97	30.21 $\pm$ 4.31	31(14-35)	
Enrichment	There is	234	24.71 $\pm$ 3.64	24(14-30)	0.260
	None	97	25.02 $\pm$ 3.89	26(14-30)	
Equity	There is	234	18.03 $\pm$ 2.28	19(11-20)	0.095
	None	97	18.44 $\pm$ 2.03	19(12-20)	
Honor and integrity	There is	234	36.01 $\pm$ 4.06	37(22-40)	0.161
	None	97	36.67 $\pm$ 3.69	38(17-40)	
Altruism	There is	234	12.90 $\pm$ 1.97	13(6-15)	0.066
	None	97	13.29 $\pm$ 1.82	14(6-15)	
Duty	There is	234	21.68 $\pm$ 2.82	22(10-25)	0.098
	None	97	22.12 $\pm$ 2.78	23 (10-25)	
Respect	There is	234	9.07 $\pm$ 1.153	10(5-10)	0.792
	None	97	9.03 $\pm$ 1.33	10(3-10)	

SD standard deviation

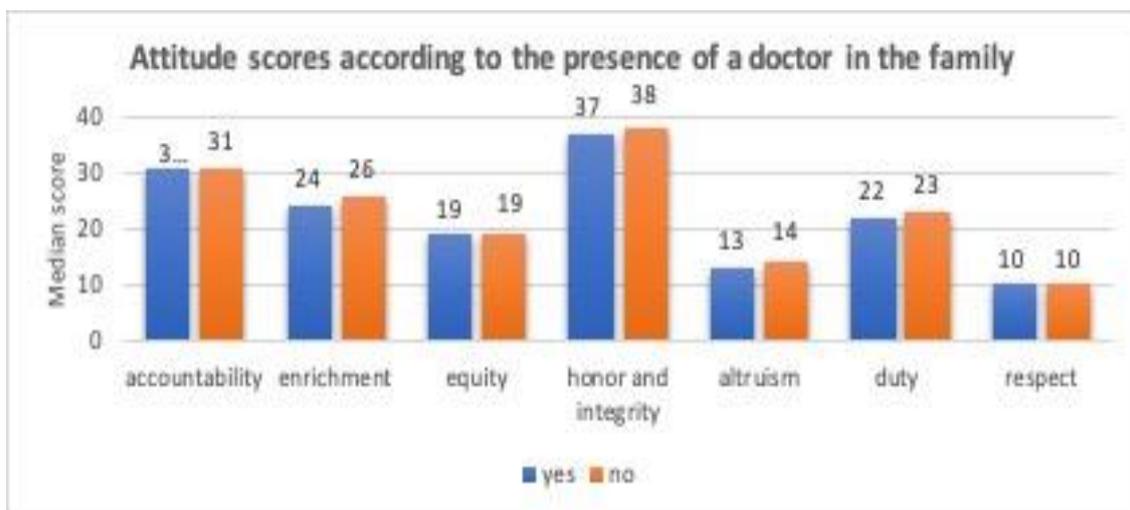


Figure 4. Comparison of the students' attitude scores according to the presence of a doctor in the family

been influenced by many personal and environmental factors such as social environment, past experiences, culture (19, 22). In our study, female students had significantly higher attitude scores than men for all sub-dimensions. In a study made with medical students in Slovenia (23) and also in the studies of Şenol (21) and Demirören (20) in our country, professionalism attitude scores of female students were found to be higher than men. In various studies, it has been reported that traits such as communication and empathy

are higher in women than in men, which may be related to women's gender characteristics (24). More than two-thirds (70.7%) of the students who attended the survey emphasized that they preferred medical school because it was their dream profession and they wanted to help people. This is very valuable in terms of showing that students make conscious choices willingly. Because the medical profession, which is shown at the top of professional professions, requires complete belonging and dedication. Due to the

responsibilities such as long and challenging training process, intensive curriculum, lifelong learning, continuous professional development, continuous updating of knowledge and skills; it is not easy to sustain the medical profession for life without the individual's own will and/or ideal. However, those who prefer medicine with ideals and a sense of helping people will be able to take more professional attitude in the profession. In our study, the professionalism attitude scores of students who preferred medical school because it was their ideal and to help people were found to be significantly higher than those who preferred it for other reasons such as guidance from parents and teachers, economic return, dignity, etc. These results suggest that the development of professional attitudes extends to the medical school preference process and that the reason for preference has a significant precursor effect on professionalism attitudes. Respecting patients in the patient-physician relationship is such an important professional element. Patients should be informed before making their own autonomous decisions, but the patient's decision must be respected. In our research, it was found that there was a student who scored three while the lowest score from the respect subdivision of the scale was two. Attention should be paid to these students with such negative attitudes, more effort should be made for developing a positive attitude and they need to be followed. Studies show that disciplinary punishments taken during student years can foresee unprofessional attitudes in the years of medicine (25). Professionalism is a whole of values which develop over time. Although each student has some attitudes arising from previous experiences, the teaching of professionalism in medical education should be started at the earliest stage and should be continuously monitored and evaluated both before and after graduation in medical education. This study is the first to evaluate the professional attitudes of students at Atatürk University Faculty of Medicine using PSCOM-SF. The results give an idea of where we are about achieving our professionalism goals. Indeed, these results can be a guide in the preparation and evaluation of the training program for professionalism.

**Limitations:** The first and most important limitation of the study is the collection of data in a single institution. This situation restricts the generalizability of the results. The scale used in the study is an attitude scale and although there is a relationship between attitudes and behaviors, it may not always be consistent. Therefore, a single assessment of students' attitudes towards

professionalism will not confirm that these attitudes will turn into behaviors in the future. Finally, clinical term students were not included in the study, and the effects of education and time on attitudes were not evaluated. The strength of our study is that the professional attitudes of students in our institution have not been evaluated with PSCOM-SF before and provide data on how far we have achieved our goal of medical professionalism.

## Conclusion

The results of the study show that medical students have a good level of professional attitudes and it shows that gender and reason for medical school preference has a significant precursor effect on the professional attitudes. Professionalism attitude scores of female students were higher than men's, students who chose the medical school because it was their ideal and to help people had significantly higher scores than students who preferred it for other reasons. No significant difference was found between attitude scores of students with and without the presence of a doctor in their family. Given that medical professionalism is an area of proficiency, more extensive research is needed, including regular monitoring of students and comparing the effects of time and educational models.

**Ethical Approval:** Ethical permissions were taken from the Atatürk University Clinical Research Ethical Committee. (IRB No:08/32, Date: 26.12.2019)

**Informed Consent:** Students were informed about the purpose and scope of the study and their consent was obtained.

**Conflict of Interest:** There is no conflict of interest.

**Funding:** No financial support has been received for the study.

**Author Contribution:** The planning, data collection, analysis and writing stages of the study were carried out by ECT.

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