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Original Article

Gender differences in the factors influencing the choice of future career among the final stage Turkish medical students

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Abstract

Background: Turkey has a marked increase in the proportion of female medical students and graduates doctors compared to males. However, females are still underrepresented in some disciplines and grouped in other branches of medicine. It is essential to regularly assess the medical students' trends toward the specialty and avoid the shortage and maldistribution in some critical specialties. This study aims to investigate the gender differences in Turkish medical students' specialty preferences and influencing factors.

Methods: A descriptive cross-sectional study carried out among final year students at the Bezmialem Vakif University (BVU), Faculty of Medicine in Istanbul, Turkey. Data collected from March to April 2018 using a pre-tested self-administered questionnaire included socio-demographic characteristics of the population, first choices for specialization, and the factors influencing those choices. An independent sample t-test performed to test the gender differences in different influencing factors. Data were analyzed using SPSS version 16.

Results: A total of seventy (70) students (response rate of 69.5 %) included in the data analysis. The mean age of total respondents was 24.9 ± 0.96 (ranged 23-27), and the male to female ratio of students was approximately 1:1.4. Out of nineteen (19) factors, statistically significant gender differences noted in the mean scores of six factors. Male students were more influenced by family expectations (2.76 ± 0.87, p=0.008), geographical consideration (2.97 ± 0.91, p=0.053), and high income expectations (2.90 ± 0.90, p=0.024) compared to female students. However, female students were more influenced by personal interests (3.61 ± 0.49, p=0.041), personality characteristics (3.59 ± 0.55, p=0.010) and malpractice (2.73 ± 1.03, p=0.015) compared to male students.

Conclusion: There is a significant difference between the sexes in terms of priorities; family, income, and geographical distribution significantly impacted on men, while women were more concerned with lifestyle, well-being and avoiding responsibility.

Keywords: Medical students, Gender, Differences, Future Career, BVU, Istanbul, Turkey

Background

Historically and in different parts of the world, women have been prohibited from working in the medical field, which was often an exclusive field for males. The female has struggled for many centuries to demonstrate her ability to perform challenging professions such as medicine. However, in the societies that allowed women to practice medicine, the work was informal and limited to midwifery, nursing, and women's health [1]. Women have acquired the right to enroll in medical education institutions since the eighteenth century. However, the number of women working in the health sector continued to fluctuate until the end of the twentieth century [2]. At the beginning of the twenty-first century, women have made many gains in education and employment. Most of the industrial countries provide equal medical education opportunities for both sexes [3]. The interest that society showed towards women's education enabled them to overwhelm the nursing profession and make steady steps in the medical field. However, employment opportunities in the medical sector are not equal for both sexes.

In contrast, most developing countries lack gender equality in both medical education and employment [4]. Despite equal opportunities for both sexes in many medical specialties, deviations observed in some medical specialties, such as fully male-dominated surgery. Likewise, some disciplines wholly dominated by women [5]. Female doctors prefer specializations that include interaction with patients, and those that provide more hours used in organizing family life. Therefore, the number of females working in the field of general practitioners,

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pediatrics, gynecology, obstetrics, pathology, psychiatry, and public health exceeds the number of male workers in the same disciplines [6]. Several determinants shaped the women opportunities in medical specialties [7], such as the work-related variables [8] and the difference in the wages paid between female and male doctors, even if comparing identical segments in terms of ages, specialization and working hours [9]. Job satisfaction is often higher among female doctors than male partners but with a higher level of job burnout [8] emotional exhaustion [10]. Additionally, female doctors are facing difficulties in their career advancement because of sexual prejudice and work-related violence in the form of physical attack, verbal abuse, bullying, racial and sexual harassment [11, 12]. Female doctors are scarce in the administrative summits of medical institutions [6] because they are often excluded from administrative decision-making, obtaining promotions or higher departments, and sometimes treated with disrespect by the nursing staff or other support cadres [13]. However, we see female doctors leading large hospitals towards success and expansion, and others receive Nobel Prizes as a reward for their medical achievements. Many of the female doctors are pioneering examples of the combination of knowledge and scientific competence, on the one hand, and kindness and psychological care for the patient on the other. The future career specialties preferred by medical students is a complex process, and the factors affecting these preferences are of great importance for a balanced distribution of physicians in different specialties, particularly in times of oversupply or undersupply of physicians. It is also of concern because of its relationship with patient satisfaction and excellent patient outcomes. This study aims to report the gender differences in the specialty choices and factors influencing these choices among medical students at a private university in Turkey.

Methods

A cross-sectional descriptive study carried at the Bezmialem Vakif University (BVU), Faculty of Medicine, Istanbul. All students in the final year of medical school in 2018, willing to participate and citizens of Turkey, were included. International students and those who were absent excluded from this study.

Sample size

The formula of Bill Godden [14] to calculate a finite population recruited to calculate the sample size. With a 95 % confidence level and a 5.0 % margin of error, the sample size calculated at 70 students.

Study tool

Data was collected using a close-ended self-administered semi-structured questionnaire in the Turkish Language. The study tool was test-piloted among Ten students (not included in the study), and content validated [15] to check for any ambiguity before distribution among the students. The Turkish version forward-backward translated into English for publication.

Variable

The outcome variable was "the gender" categorized as male and female. The independent variables included variables such as type of graduated school (government or private), number of trials to enter college (1st, second and more than two), education level of the parent (lower education and higher education), parents health-related job (yes, no), parents academician (yes, no), Source of tuition fees (self-sponsored, government scholarship and mixed) and accommodation places for students (homestay, others). Nineteen factors are affecting 'Choice of Specialty' included as independent variables. These answered as either 'Strongly Agree,' 'Agree' or 'Disagree,' 'Strongly Disagree.' Data was entered into Excel© spreadsheets and transferred to statistical package SPSS© version 16 for analysis.

Results

Socio-demographic factors

A total of seventy (70) questionnaires (response rate of 69.5 %) filled and included in the data analysis. The male to female ratio of students was approximately 1:1.4. The mean age of total respondents was 24.9 ± 0.96 (ranged 23-27). The mean age for male students (n = 29) was 25.29 ± 0.91 years. The mean age for female students (n = 41) was 24.61 ± 0.92 years. Two-thirds of students who entered college from the first attempt were females, while students who needed two or more attempts were males. Male students were more likely to be government-sponsored when compared to female students (Table 1).

Specialization choices

Female students, in general, had an orientation to medical specialties and male students towards the surgical fields. Females were two times more likely to select internal medicine and Pediatrics than male students. Dermatology, physical therapy, and rehabilitation, ophthalmology, radiology, anesthesia, and pathology were chosen exclusively by females compared to general surgery, orthopedics, neurology, and neurosurgery were chosen exclusively by males (Table 2).

Factors affecting the choice of specialization

An independent-sample t-test was run to determine if there were differences in the factors influencing the choice of future career between male and female students (Table 3). There were no significant gender differences in most of the influencing factors; however, the personal interest ($m = 3.61 \pm 0.49$, 95% CI (0.01, 0.65), $t(68) = 2.088$, $p = 0.041$), the personality characteristics ($m = 3.59 \pm 0.55$, 95% CI (0.10, 0.72), $t(68) = 2.648$, $p = 0.010$) and the malpractice ($m = 2.73 \pm 1.03$, 95% CI (0.13, 0.99), $t(68) = 2.492$, $p = 0.015$) were significantly more influencing the female students, compared to males ($m = 3.26 \pm 0.84$), ($m = 3.17 \pm 0.76$) and ($m = 2.17 \pm 0.76$) respectively. Moreover, expectations of family ($m = 2.76 \pm 0.87$, 95% CI (0.16, 1.02), $t(68) = 2.741$, $p = 0.008$), geographical consideration ($m = 2.97 \pm 0.90$, % CI (0.01, 0.91), $t(68) = 1.969$, $p < 0.053$), and the high income expectations ($m = 2.90 \pm 0.78$, % CI (0.06, 0.90), $t(68) = 2.302$, $p = 0.024$) were significantly more influencing the male students compared to female students ($m = 2.17 \pm 0.89$), ($m = 2.51 \pm 0.98$), ($m = 2.41 \pm 0.84$) respectively. Although it was not statistically significant, female students' interest in lifestyle or the amount of time remaining for activities independent of medical practice (3.15±0.76) was higher than that of their male peers (2.7 ±0.86). Nevertheless, male students showed more interest in the scarcity of specialization (2.66 ± 0.86) in Turkey, and the qualification tests (2.83 ± 1.10) devoted to choosing specialization than their counterpart female students (2.29±0.75), (2.37±1.02) respectively.

Table 1 Socio-demographic characteristics of respondents (n=70)

No.	Variables	Categories	Total N (%)	Male N (%)	Female N (%)	Sig.
	Number of observations		70	29 (41.4)	41(58.6)	
1	Type of graduated school	Government	39(55.7)	16(41.0)	23(59.0)	0.967
		Private	31(44.3)	13(41.9)	18(58.1)	
2	Trial to enter college	1st trial	54(77.1)	18(33.3)	36(66.7)	0.019
		2nd or more trials	16(22.9)	11(68.8)	5(31.2)	
3	The education level of the mother	Lower education	43(61.4)	25(58.1)	18(41.9)	0.000
		Higher education	27(38.6)	4(14.8)	23(85.2)	
4	The education level of father	Low education	22(31.4)	13(59.1)	9(40.9)	0.067
		Higher education	48(68.6)	16(33.3)	32(66.7)	
5	Parents health-related job	No	53(75.7)	21(39.6)	32(60.4)	0.778
		Yes	17(24.3)	8(47.1)	9(52.9)	
6	Parents Academician	No	43(61.4)	21(48.8)	22(51.2)	0.139
		Yes	27(38.6)	8(29.6)	19(70.4)	
7	Source of tuition fees	Self-sponsored	26(37.1)	7(26.9)	19(73.1)	0.136
		Government (scholarship)	16(22.9)	9(56.2)	7(43.8)	
		Mixed	28(40.0)	13(46.4)	15(53.6)	
8	Accommodation places for students	Homestay	51(72.9)	19(37.3)	32(62.7)	0.283
		Other	19(27.1)	10(52.6)	9(47.4)	

Table 2 First choice specialty among gender (n=70)

No.	Specialty	Total N(%)	Male N(%)	Female N(%)
1	Internal medicine	13 (18.6)	4(5.7)	9(12.9)
2	No Choice	6(8.6)	3(4.3)	3(4.3)
3	Pediatrics	6(8.6)	2(2.9)	4(5.7)
4	ENT	5(7.1)	2(2.9)	3(4.3)
5	Orthopedics	5(7.1)	5(7.1)	0
6	Dermatology	4(5.7)	0	4(5.7)
7	Physical therapy and rehabilitation	4(5.7)	0	4(5.7)
8	Ophthalmology	4(5.7)	0	4(5.7)
9	General surgery	4 (5.7)	4 (5.7)	0
10	Psychiatry	4 (5.7)	2(2.9)	2(2.9)
11	Cardiology	3(4.3)	1(1.4)	2(2.9)
12	Radiology	3(4.3)	0	3(4.3)
13	Gyn Obstetrics	3 (4.3)	2(2.9)	1(1.4)
14	Plastic Surgery	2(2.9)	1(1.4)	1(1.4)
15	Neurology	1(1.4)	1(1.4)	0
16	Neurosurgery	1(1.4)	1(1.4)	0
17	Anesthesia	1(1.4)	0	1(1.4)
18	Pathology	1(1.4)	0	1(1.4)

Discussion

Among male and female medical students together, internal medicine (18.6%), pediatrics (8.6%), ENT (7.1%), and orthopedics (7.1%) were the most preferred specialty choices at Bezmialem Vakif University in Turkey. The findings of this study were similar to those reported in other national and international studies. For example, in a study in Jordan, surgery, internal medicine, and pediatrics were the most preferred specialties [16]. From the same region, in Saudi Arabia, it was reported that internal medicine, surgery, and pediatrics were the most chosen specialties [17]. In Canada, medical students mostly preferred internal medicine, surgery, and pediatrics [18]. In Japan, most preferred specialties were internal medicine, surgery, pediatrics, and emergency medicine [19]. These results were matching with other studies conducted in other European countries [20,21] and in the USA [22], which may indicate that there is a tendency for a possible selection of specialties among medical students worldwide.

In our study, neurology, neurosurgery, anesthesia, and pathology were the least attractive specialties. Academic and basic medical sciences and other non-clinical subjects had no takers, which is consistent with a few other studies conducted in India, Saudi Arabia, Gambia, and Kenya [23,24,25,26]. It was claimed that medical students think the amount of respect that society gives is relatively less for nonclinical specialties. Furthermore, academic and basic sciences considered an inferior career as compared to the other popular clinical medicine topics, which may be explained by the minimal exposure of students to these topics due to their low weight in the curriculum [27]. If the trend towards these subjects persists in the future, there is likely to be a scarcity of academicians and teachers in non-clinical and basic sciences departments [28]. A detailed study to determine the reasons for less choice of these subjects will be useful. We found that only 8.6% of the medical students in the sample had no decision about their specialty choice. In some studies, this percentage of no choice ranges from 19% to 60% [29, 17,30]. Our results confirm that there are strong orientation and sufficient career support services in Turkey, which can also be seen as an opportunity to influence the career paths of Turkish medical students correctly. This study showed gender differences in the choice of specialties among Turkish medical students. Male medical students primarily chose orthopedics, internal medicine, and general surgery, compared with the preferred choices of internal medicine, pediatrics, dermatology, physical therapy and rehabilitation, and ophthalmology by female medical students. This result is in line with several previous studies that specialties preferred female students were generally pediatrics. In contrast, male students found to be more likely to choose surgical specialties and orthopedics [31,32,33].

Table 3 Results of student t-test gender differences on factors influencing the choice of future career (n=70)

No	Influencing factors	Total Mean (±SD)	Male Mean (±SD)	Female Mean (±SD)	t. test	p-value	95% CI L-U
	Number of observations	70	29	41	-	-	-
1	Expectations of family (parents, husband / wife, children, relatives)	2.41(0.92)	2.76(0.87)	2.17(0.89)	2.741	0.008	0.16-1.02
2	Account the geographical (Geographical consideration)	2.70(0.97)	2.97(0.91)	2.51(0.98)	1.969	0.053	0.01-0.91
3	Lifestyle (the amount of time remaining for activities independent of medical practice)	3.00(0.82)	2.79(0.86)	3.15(0.76)	1.812	0.074	0.04-0.74
4	Personal Interests	3.47(0.68)	3.26(0.84)	3.61(0.49)	2.088	0.041	0.01-0.65
5	High income expectations	2.61(0.89)	2.90(0.90)	2.41(0.84)	2.302	0.024	0.06-0.90
6	Year of Specialization	2.60(0.95)	2.66(1.08)	2.56(0.87)	0.404	0.687	0.37-0.56
7	Personality characteristics	3.41(0.67)	3.17(0.76)	3.59(0.55)	2.648	0.010	0.10-0.72
8	Rarity of the specialty (Scarcity of specialization in the Turkey)	2.44(0.81)	2.66(0.86)	2.29(0.75)	1.878	0.065	0.02-0.75
9	Competition	2.84(0.75)	2.90(0.86)	2.80(0.68)	0.498	0.620	0.28-0.46
10	Plenty of subspecialty choices	2.60(0.94)	2.59(1.02)	2.61(0.89)	0.274	0.919	0.43-0.48
11	Research opportunities	2.79(0.92)	2.72(1.03)	2.83(0.83)	0.471	0.639	0.34-0.55
12	The college programs or facilities helping in specialty selection in Turkey	2.36(1.01)	2.59(1.02)	2.20(0.98)	0.882	0.110	0.09-0.87
13	Influence of a role model physician (Advisory impact / doctor ideal)	2.83(0.76)	2.76(0.69)	2.88(0.81)	0.644	0.522	0.25-0.49
14	Occupational prestige	2.90(0.78)	2.93(0.88)	2.88(0.71)	0.277	0.783	0.33-0.43
15	Dealing with patients (Interfering with patients)	3.19(0.67)	3.10(0.67)	3.24(0.66)	0.868	0.389	0.18-0.46
16	Capacity tests or personality tests (Qualification exams or selection exam)	2.56(1.07)	2.83(1.10)	2.37(1.02)	1.814	0.076	0.05-0.97
17	Few responsibilities (for example to avoid on call shifts)	2.54(0.97)	2.41(0.91)	2.63(1.02)	0.932	0.355	0.25-0.69
18	Safety medical practice (for example to avoid physical, verbal violence)	2.67(1.02)	2.79(1.05)	2.59(0.99)	0.840	0.404	0.29-0.70
19	Malpractice	2.50(0.96)	2.17(0.76)	2.73(1.03)	2.492	0.015	0.13-0.99

Heavy workloads of surgical specialties may partly explain the lower preference in female students. Additionally, prestige, financial reward, and career opportunities were factors promoting surgical specialties, which in return may attract more male medical students [34,35].

Although, in our general study, surgery has predominantly chosen by male students, and no female student chose general surgery, neurology, neurosurgery, specialties which involve surgical skills, such as ENT, plastic surgery, and ophthalmology, were more likely to be preferred by female students. Consequently, the surgery as a male-dominated area may be diminishing in Turkey. Nevertheless, serious medical policies that influence work and home balance are needed to attract more female students to surgical specialties for a more balanced distribution in the field.

Remarkably, in contrast to the previous international studies [17,36,16], gynecology or obstetrics was not in the most preferred list of female medical students in Turkey. Female students' reluctance to choose gynecology or obstetrics should not be seen as a lack of enthusiasm or motivation towards the specialty. Instead, it can be attributed to concerns about a challenging workload and a balanced lifestyle. Furthermore, it also noticed that no male medical student has chosen to pursue a career in anesthesia, pathology, or radiology. Female students' career opportunities are perceived to be less in these fields as more nurse anesthetists are working in university hospitals, and radiology has long seen as a female-dominated field in Turkey.

In this study, the medical students asked about the effects of various factors that might impact their perception of their future specialty. Our study reaffirmed the previous literature that male and female students put different priorities in choosing their specialty careers. For both male and female students, personal interest, personality characteristics, and dealing with patients ranked as the most significant determinants controlling specialty preference. Similar to our results, in other studies [37,23,38,16,24], medical students highly rated intrinsic factors such as personal interest and personality characteristics as compared to extrinsic factors. This fact reflects the continuing influence of traditional perspectives on doctors on our society and families. Besides, in our study, female medical students were more likely to identify personal interests and personality characteristics as motivating factors for choosing specialty ($p<0.05$). These results partially explain the increasing number of female students in medical schools in Turkey.

Male medical students attributed geographical consideration ($p<0.05$), occupational prestige, high-income expectations ($p<0.05$), and competition as the next most significant perceived reasons for the choice of specialty. In contrast, female students perceived lifestyle, the influence of a role model, occupational prestige, research opportunities, and malpractice

($p<0.05$) as the next leading contributing reasons for the choice of specialty.

Today, both female and male medical students prefer to have a sufficient amount of time for activities independent of medical practice. This societal trend has particularly been affecting females as previous studies from the 1980s report lifestyle factors as being of least importance in making a career choice [39,40].

In our study, although not statistically significant, Turkish female medical students identify lifestyle characteristics as more critical in specialty choice than males. As found in previous studies [33,41,42,43], personal values, including lifestyle preferences, have become more important for all doctors in general, indicating that preferences of female medical students for specialties allowing more flexible working hours have been increasing [42]. Today, doctors in many disciplines have long and irregular working hours, which makes medical students think about how appropriate their chosen specialties are for their lifestyle when making decisions about their future. Some other studies have shown that female students are more likely to consider career choices that can integrate family responsibilities into careers and allow flexibility of work [44,45]. Similar results found in our study. Particularly female students in our sample chose controllable lifestyle specialties such as pediatrics, radiology, dermatology, and physical therapy. Knowing that the perceptions of lifestyle differ among students will help provide counseling to medical students in decision-making on the path of their specialties.

As previously reported in other international studies [16,46,47,48], higher-income expectations found to be an important motivating factor for specialty choice of male medical students in this study. Male students also stated that they were looking for a specialty with a sound prestige and competitive environment when choosing a specialty.

Occupational prestige has been found as a significant factor for medical students when they choose a medical specialty in the earlier literature [16,49], and it is known that male students were more likely to identify technical challenges as a significant factor in their choices. Also, our study revealed that males were more likely to be affected by geographical factors when choosing a specialty than females. Geographical location is a particular concern for Turkey and several other developing countries which need to be addressed in national-level policies for a balanced doctor's distribution across different regions.

The influence of role models was substantial for female medical students in our study. Previous studies have shown that doctor role models play important roles in medical students' career decisions [50,51,31]. For instance, female students were discouraged from specializations, such as surgery, because there are few female surgeons to look at as role models [19,52]. As a result, these students turn to other specialties with more female representation, such as pediatrics [53], which also shows why pediatrics preferred among female students was high. Studies have also reported that female students exposed to more gender discrimination than males in their male-dominated specialties, which eventually prevent their choices [54,55].

In our study, the family (parents, partner, children, or relatives) were more guiding male students to choose a specific specialty. This finding showed that the differences between the male and female students in the basic preferences towards specialties have been diminishing, and family expectations were no longer solely a female issue. In contrast, female students are more likely to be affected by malpractice litigation when choosing a specialty. Similar to a few other studies, this finding may explain the high rate of low-risk specialties chosen by female students, such as pediatrics, dermatology, and psychiatry.

This study clearly states that it is a balance of factors that play a role in any medical student's specialty decision. Future studies should consider the impacts on medical students' specialty preference from several institutions over the years. Further research will be useful to identify ongoing trends in the specialty choices of medical students. Knowledge and understanding of trends can lead to the identification of departments and topics at the universities that need to be strengthened. Such information would help strengthen individual programs and planning for a relatively new university, yet it would provide a great experience and good model to other medical schools in Turkey.

Similar to previous studies from other countries, this study also showed that gender differences were associated with factors such as lifestyle, role models, and personal interests. Factors associated with gender differences in specialty preferences in Turkey should be examined in more detail. Considering these factors, improving the working environment will significantly contribute to changing medical students' preferences and doctors. As shown in previous studies, prestige and income are other important factors affecting the choice of specialty. Neither the prestige of specialties nor the salaries of the doctors sufficiently considered in Turkey. In order to guide medical students to specialties requiring long-term education or heavy workloads, prestige and financial incentives should be improved.

Moreover, these policies should also include specific targets to increase the number of female doctors in male-oriented specialties, such as surgery. Supporting the working environments of female doctors and effective policies aiming to eliminate violence against doctors are starting points. Systematic changes considering gender differences in specialty choices are needed to create a more balanced distribution of doctors and to solve the potential problems of shortage of, and malpractice, and violence against doctors.

This study has several limitations. First, being confined to final-year medical students from a single private university, the results might not represent all medical students' career preferences in Turkey. Secondly, we measured the specialty choices only at one point in time. Nevertheless, it has already stated in the literature that the specialty choice of medical students is not stable over the medical education years. Lastly, this study only focused on the choices of medical students regarding their future specialties. There is no data on the actual decisions of the Turkish medical students who have taken or will take. However, this study has been informative to medical students in Turkey to reveal numerous factors that influence the decision to choose a particular specialty, and it may serve as a pilot for future studies.

The findings regarding gender differences in medical students' specialty preferences may have implications for both medical education and career counseling. More such studies and robust, longitudinal studies are needed to be able to fully

understand the career preferences of medical students and the factors affecting them in Turkey.

Conclusion

This study revealed gender differences and similarities in specialty preferences of medical students, and the most significant factors influencing their choices at Bezmialem Vakif University, a private university in Turkey. The most preferred specialties of male students were orthopedics, internal medicine, and general surgery, compared with the preferred choices of internal medicine, pediatrics, dermatology, physical therapy and rehabilitation, and ophthalmology by female medical students. Specialty choices of medical students mainly result from personal interests, personality characteristics, and dealing with patients. However, gender differences revealed that male medical students attributed geographical consideration, occupational prestige, high-income expectations, and competition as other significant reasons for the choice of specialty. In contrast, female students perceived lifestyle, the influence of a role model, occupational prestige, research opportunities, and malpractice as the other leading reasons. Systematic changes considering gender differences in specialty choices are needed to create a more balanced distribution of doctors and solve the potential problems in Turkey's health labor market.

Abbreviations

BVU: Bezmialem Vakif University (BVU); WHO: World Health Organization

Declarations

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Availability of data and materials

Data will be available by emailing drsaadalezzi@gmail.com.

Authors' contributions

SAAJ is the principal investigator of the study who designed the study and coordinated all aspects of the research, including all steps of the manuscript preparation. SAAJ is responsible for the study concept, design, writing, reviewing, editing, and approving the manuscript in its final form. ID and AAJ contributed to the interpretation of data, drafting the work, writing the manuscript, and reviewed and approved the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the Declaration of Helsinki, and the Ethics Committee of the Faculty of Medicine, Bezmialem Vakif University, approved the protocol (Ref: 8/75 on 27-March -2018). Moreover, written informed consent was obtained from each student willing to participate after an explanation of the study objectives and the guarantee of secrecy.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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