

Opinions of Medicine Students in Turkey on Orthopaedics and Traumatology Residency and Their Expectations from the Future: National Survey Results

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ABSTRACT

Aim: The primary purpose of our study is to assess the future expectations of physicians about to graduate from medical school and their views on orthopaedics and traumatology. Secondly, determine why women are less likely to attend orthopaedic residency training and provide suggestions for overcoming gender discrimination.

Methods: An online survey was conducted on sixth- or fifth-year medical students who had completed orthopaedics internships. Demographic information; the reasons for receiving medical education; plans for the future, factors that will cause women not to prefer orthopaedics and traumatology; and the evaluation of the Orthopaedics and Traumatology education they receive were questioned.

Results: A total of 125 students participated in the study. Of these, 52 (42.6%) were male, and 73 (58.4%) were female. 64.8% of the participants had insufficient confidence to work as a physician. 45.2% of students studying at private medical schools felt sufficient, this percentage was 27.7% in the state group, and the difference was statistically significant ($p=0.048$). 83.2% of students felt that the education they received needed to be improved in a practical sense. 39% of the students would not prefer any medical school if they had the choice again. Most participants thought that orthopaedics was more suitable for men. They pointed out that the most crucial factor preventing women from choosing was the excess of interventions that require strength.

Conclusion: Health management plans should be developed to ensure medical school students have a positive outlook on our country's future and increase women physicians' participation in Orthopaedics and Traumatology.

Keywords: Medicine, Education, Orthopaedics, Residency, Gender, Career

Türkiye'de Tıp Fakültesi Öğrencilerinin Ortopedi ve Travmatoloji Uzmanlığı Hakkındaki Görüşleri ve Gelecekte Beklentileri: Ulusal Anket Sonuçları

ÖZET

Amaç: Çalışmamızın temel amacı, tıp fakültesinden mezun olmak üzere olan hekimlerin gelecekte beklentilerini, ortopedi ve travmatoloji eğitimi hakkında görüşlerini değerlendirmektir. İkinci olarak ise, kadınların ortopedi uzmanlığı eğitimine daha az katılmalarına neden olan faktörleri değerlendirmek ve kadınların katılımını artırmaya yönelik öneriler geliştirebilmektir.

Yöntemler: Ortopedi stajlarını tamamlamış olan altıncı veya beşinci sınıf tıp öğrencileri üzerinde çevrimiçi bir anket yapıldı. Demografik bilgiler; tıp eğitimi alma nedenleri; gelecek planları, kadınların ortopedi ve travmatolojiyi tercih etmemesine neden olabilecek faktörler; ve aldıkları Ortopedi ve Travmatoloji eğitimleri sorgulanmıştır.

Bulgular: Çalışmaya toplam 125 öğrenci katılmıştır. Katılımcıların 52'si (%42,6) erkek, 73'ü (%58,4) kadındı. Katılımcıların %64,8'i hekim olarak çalışmaya başlamak için yeterli özgüvene sahip hissetmiyordu. Özel tıp fakültelerinde okuyan öğrencilerin ise %45,2'si kendini hazır ve yeterli hissediyordu, bu oran devlet grubunda %27,7 idi ve bu farkın istatistiksel olarak anlamlı olduğu görüldü ($p=0,048$). Öğrencilerin %83,2'si aldıkları eğitimin pratik anlamda iyileştirilmesi gerektiğini düşünüyordu. Öğrencilerin %39'u tekrar seçme şansları olsa yine tıp fakültesini tercih etmeyeceklerini ifade ettiler. Katılımcıların çoğu ortopedinin erkekler için daha uygun olduğunu düşünmektedir. Kadınları seçim yapmaktan alıkoyan en önemli faktörün de güç gerektiren müdahalelerin sık olması olarak öngörülmüştür.

Sonuç: Ülkemizde, tıp fakültesi öğrencilerinin geleceğe olumlu bakışlarını sağlamak ve kadın hekimlerin Ortopedi ve Travmatoloji alanına katılımını artırmak için sağlık yönetim planlamaları geliştirilmelidir.

Anahtar Sözcükler: Tıp, Eğitim, Ortopedi, Uzmanlık, Cinsiyet, Kariyer

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Received: 18 August 2022

Accepted: 11 May 2023

Although choosing a profession is one of the most critical decisions in the lives of young people, it is a complex process influenced by many factors (1). The individual is affected by several value judgments, interests, and beliefs in this decision process (2). The knowledge available in the literature shows that the individuals' characteristics are also influential in this decision, their interest in the profession, their values, and the satisfaction they will obtain (3). On the other hand, socioeconomic status and family influence also play an essential role in choosing a profession, although they differ between countries and cultures. Because violence in health has increased in recent years and deterrent measures have not been taken, medical school students feel severe reservations about starting medical practice and maintaining the profession in the conditions in our country. This study aims to put the finger on the problems experienced by the members of a strategically critical professional group who want to serve their country as physicians and to raise awareness for the development of measures and corrective policies by being aware of the seriousness of the situation.

MATERIAL AND METHODS

Sixth- or fifth-year medical students who completed orthopaedics internships from different medical schools were included in this study. The questionnaire prepared by our clinic was conducted online for six months between June and December 2021 (Microsoft Forms). Responses were collected voluntarily. The survey consists of 5 sections: firstly, demographic information; secondly, the reasons for receiving medical education; thirdly, plans for the future; fourthly, factors that will cause women not to prefer orthopaedics and traumatology; and finally, the evaluation of the Orthopaedics and Traumatology education they receive.

Statistical Analysis

Complete data from 125 students were entered into Microsoft Forms and later analysed using Microsoft Excel and SPSS version 27. The Chi-Square test was used to compare between and among different categorical variables. A p-value of < 0.05 was considered statistically significant.

RESULTS

125 students from 6 different medical schools in Istanbul participated in the study. Of these, 52 (42.6%) were male, and 73 (58.4%) were female. The type of participants' schools was 72 (57.6%) state and 53 (42.4%) private (Figure 1-2). 79% of students in state medical schools and

%55 in private medical schools had chosen to study medicine because of their ideals (Figure 1-2). Also %43 students at private schools decided based on the scores they obtained in the college examination, but this percentage was lower for state schools (20%). Also, 64.8% of the participants needed more confidence to work as a physician. However, while 45.2% of students studying at private schools felt sufficient, this percentage was 27.7% at state schools, and the difference was statistically significant ($p=0.048$). When asked about their confidence in practice, the scores were similar in both groups, and no statistically significant difference was found ($p=0.963$). 83.2% of students felt that the education they received needed to be improved in a practical sense. 39% of the students would not prefer any medical school if they had the choice again. The future plans of 83.2% of the participants want to specialise in medicine, and 44.8% want to continue working as a physician abroad (Figure 3-4). 46% want to specialise in surgery, 52% in internal medicine, and 2% in basic medical research. When we look at the factors influencing the decision to specialise in medicine, 59% want high professional satisfaction, and 36% want financial satisfaction (Figure 5).



Figure 1. Reason for choosing Orthopedics Residency

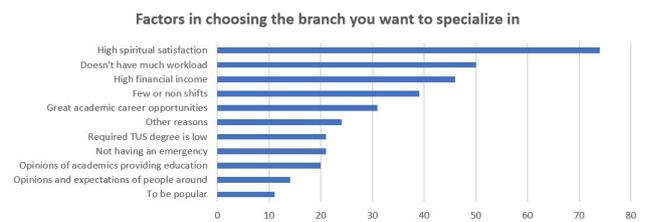


Figure 2. Factors influencing the decisions for specialisation in medicine

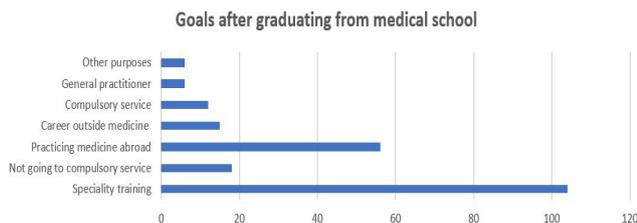


Figure 3. Future Plans of the students

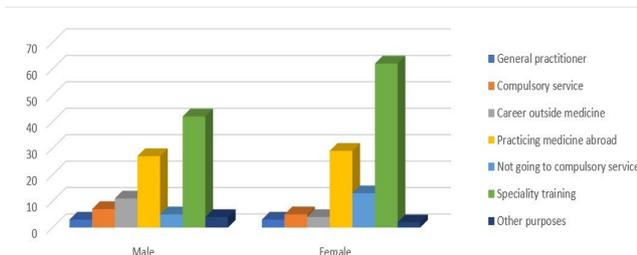


Figure 4. Future plans by gender

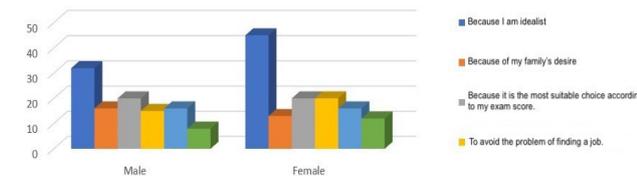


Figure 5. Reasons for choosing Medicine School by Gender

In comparison, 40% want to choose a specialisation with a low workload. 46.4% of participants said they would never prefer the speciality of orthopaedics, 24.8% might prefer it, and 28.8% would absolutely prefer it. When asked about female preference for orthopaedics, 75.2% stated that gender was not a factor, 20% said it was more appropriate for men, and 4.8% said those female orthopaedic surgeons were needed and should be preferred more often (Figure 6). It was seen that the interventions requiring strength, the number and intensity of duties were high, and the strenuous training process were the main factors that may cause women not to prefer orthopaedic residency (Figure 7).

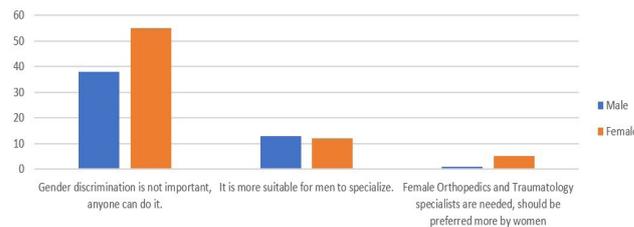


Figure 6. Opinions about the Gender Discrimination in Orthopedics Residency

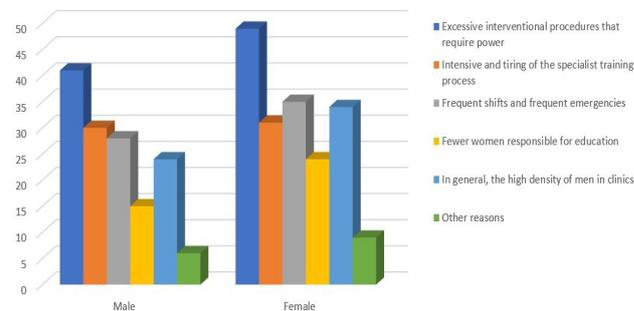


Figure 7. Answers for why women intend less to have an Orthopedic Surgery Education

DISCUSSION

We have shared an indigenously designed questionnaire with 5th and 6th-semester medical students. 57% of them were female and from different universities, and 59% of the participants were in the 5th semester.

According to our survey, 64.8% of the participants had insufficient confidence to work as a physician. The study by Kathamandu (4) has shown that female physician candidates have less confidence than males. This may lead female physicians to choose areas that require less attention, which may keep them away from surgical fields, even if they have experienced them. An article by Stacia Dearmin stated that the physician's confidence is essential to promote the patient's trust. After all, when we need treatment, we prefer the doctor who seems to know what he is doing (5). Research in India had shown that most medical students feel their expectations before medical school were unmet. In Turkey, on the other hand, most medical students enter medical school because they believe they have the best qualifications to become a doctor (6). Our study found that a family member's influence on the decision to have a medical education is also more significant than in other countries. Our cultural structure may have influenced this result, as students may believe taking up a medical profession gives higher prestige to their families.

According to a meta-analysis, the most crucial factor in physicians' decision to study medicine in 1988, 1998 and 2008 was "interest in people" and "the presence of a physician in the family or close relatives", which ranked only seventh compared to other factors. Still, it was constantly on the rise, so today, we can see that it has a noticeable impact on the decision of physician candidates (7). 65% of respondents believe they do not have an excellent education to become a doctor, and most medical students do not consider themselves ready to become a doctor. Many factors could cause this; Buja et al. mentioned the risk that the new integrated curricula would produce graduates who lack the qualities distinguishing physicians from other health professions (8). That could result in some newly trained physicians working in other occupations and being useless in the health sector. This could affect the substructure of the health care organisation because of the shortage of physicians in most countries when most students refer to the loss of self-confidence and education, which leads us to some problems that need to be fixed in how medicine is taught in different countries.

46% of medical students want to specialise in surgery, 52% in internal medicine, and 2% in basic medical research. Medical students prefer internal medicine specialities more than surgical specialities because internal medicine specialities have fewer work hours and fewer emergencies. Still, on the other hand, surgical specialities offer better income. In an article from Germany, most students preferred internal medicine specialities. The factors influencing students' preferences for a speciality were frequently work-life balance, career goals, and expected workload (9). According to these articles, most physicians would work in a speciality offering a higher quality of life. However, to balance the distribution of physicians, higher salaries are provided in surgical specialities.

According to survey research in Turkey, 13 factors affect the doctor candidate's decision about their future preference career; these are interest, ability, money (guaranteed job-job security, high-income opportunity, expenses), influencer (family, colleague), reputable status, acceptable and manageable working conditions, narrow and focused/general application area, speciality on medicine (TUS) examination score, professional satisfaction, relations with patients and their relatives, ethical relations (mobbing), abroad career counselling. (10) Young physician candidates have expectations and demands regarding personal life and career planning. Regarding work-life balance, career choice is the most critical factor for the student generation. Of course, work-life balance is based on

subjective perceptions and may vary from person to person. However, it is generally true that "work and private life can be balanced." causing Less interest in specialities that are considered very labour-intensive or high-risk, especially surgical specialities that require more extended training. This situation may cause deficiencies in students' career planning according to their skills and interests.

In health and social care, positive professional training and guidance models are becoming increasingly important to ensure a balanced distribution of services and regulate working conditions and pre-service training. During medical school, we must provide career guidance to students and be positive role models. (10)

Most participants believe the main reason for the shortage of female physicians in orthopaedic and traumatology surgery is that it requires much strength and involves long working hours. Hence, most women prefer to specialise in other specialities that offer more comfort and quality of life, such as dermatology or radiology. However, 75.2% of respondents believe women can work in orthopaedic surgery. In addition, according to a study made in the UK in 2019, myriad factors affect women's decisions about being an orthopaedist and the "Hidden Curriculum" is one of them (11). The Hidden Curriculum shows the misconception of orthopaedic surgeons that orthopaedics is a speciality for men and that orthopaedic surgeons are old-fashioned, big men with hammers, etc. The article shows how these perceptions negatively impact candidate decision-making. This causes us to lose good orthopaedic candidates, has more impact on female candidates, and lowers the percentage of female orthopaedic surgeons. And even if orthopaedic candidates say that women can become orthopaedic surgeons, the hidden curriculum could unconsciously affect the female candidates.

According to a study, It will take more than 200 years to achieve gender balance in all medical professions, but orthopaedic surgery increased by 2% between 2010 and 2019 (12). The subspecialties of foot and ankle surgery (2%) and pediatric orthopaedics (2%) experienced the highest growth in achieving gender balance. Conversely, adult reconstruction (0%) and spine surgery (1%) experienced the most nominal growth. However, the increasing rate will take a long time to reach parity. And this is because orthopaedic surgery primarily requires forcing interventions in operations such as extracting an intramedullary nail.

Health management plans should be developed to ensure medical school students have a positive outlook on our country's future and increase women physicians' participation in Orthopaedics and Traumatology.

DECLARATIONS

Ethics Approval and Consent to Participate

Ethical approval was taken from the Istinye University Ethics Committee for Social and Human Sciences Research (date: 09.06.2022, no: 2022/06.06). The consent to participate was obtained in the digital platform over the online survey service.

Availability of Data and Materials

This study does not contain any third material.

Competing Interests

The authors declare that they have no competing interests.

Funding

There is no funding source.

Authors' Contributions

KT and TE designed the study and wrote the paper. BN has collected the data and analysed the results, and HÇ has drafted the work and revised the manuscript.

REFERENCES

1. Bozionelos N. Managing Careers: Theory and Practice. *Acad Manag Perspect.* 2007 Aug 1;21:110–1.
2. Mignonac K, Herrbach O. Managing individual career aspirations and corporate needs: a study of software engineers in France. *J Eng Technol Manag.* 2003 Sep 1;20(3):205–30.
3. Genç G, Kaya A, Genç M. İnönü üniversitesi tıp fakültesi öğrencilerinin meslek seçimini etkileyen faktörler. *İnönü Üniversitesi Eğitim Fakültesi Derg.* 2007;15.
4. Shrestha B, Yadav S, Dhakal S, Ghimire P, Shrestha Y, Singh Rathaur E. Status of self-esteem in medical students at a college in Kathmandu: A descriptive cross-sectional study. *F1000Research.* 2021;10:1031.
5. Physician self-confidence: Why it matters and how to build it [Internet]. [cited 2022 Aug 1]. Available from: <https://www.wolterskluwer.com/en/expert-insights/physician-selfconfidence-why-it-matters-and-how-to-build-it>
6. Pruthi S, Pandey R, Singh S, Aggarwal A, Ramavat A, Goel A. Why does an undergraduate student choose medicine as a career. *Natl Med J India.* 2013 Jun;26(3):147–9.
7. Heikkilä TJ, Hyppölä H, Vänskä J, Aine T, Halila H, Kujala S, et al. Factors important in the choice of a medical career: a Finnish national study. *BMC Med Educ.* 2015 Oct 5;15:169.
8. Buja LM. Medical education today: all that glitters is not gold. *BMC Med Educ.* 2019 Apr 16;19(1):110.
9. Grasreiner D, Dahmen U, Settmacher U. Specialty preferences and influencing factors: a repeated cross-sectional survey of first- to sixth-year medical students in Jena, Germany. *BMC Med Educ.* 2018 May 9;18(1):103.

10. Tengiz Fİ, Babaoğlu AB. Tıp Fakültesi Son Sınıf Öğrencilerinin Kariyer Tercihleri ve Bu Tercihleri Etkileyen Faktörler. *SDÜ Tıp Fakültesi Derg* [Internet]. 2021 Sep 1 [cited 2022 Jul 13]; Available from: <https://dergipark.org.tr/tr/doi/10.17343/sdutfd.560350>
11. Howieson W, Cloke D. The hidden curriculum and its implications for surgical specialties. *Bull R Coll Surg Engl.* 2019 Nov;101(7):282–4.
12. Acuña AJ, Sato EH, Jella TK, Samuel LT, Jeong SH, Chen AF, et al. How Long Will It Take to Reach Gender Parity in Orthopaedic Surgery in the United States? An Analysis of the National Provider Identifier Registry. *Clin Orthop.* 2021 Jun;479(6):1179–89.