

Challenges and Opportunities in Orthopedics: Do Experiences of Male and Female Surgeons Differ Vastly?

Ortopedide Zorluklar ve Fırsatlar: Kadın ve Erkek Cerrahların Deneyimleri Farklı mı?

Elif TUFAN¹

¹ Marmara University, School of Medicine, İstanbul, TÜRKİYE

Yavuz ŞAHBAT²

² Erzurum City Hospital, Department of Orthopedics and Traumatology, Erzurum, TÜRKİYE

Büşra TOKMAK³

³ Eskişehir Osmangazi University, Department of Orthopedics and Traumatology, Eskişehir, TÜRKİYE

Esra DEMİREL²

² University of Health Sciences, Erzurum City Hospital, Department of Orthopedics and Traumatology, Erzurum, TÜRKİYE



ABSTRACT

Objective: Although women comprise nearly half of medical school graduates globally, female orthopedic surgeons in many countries, including Turkey, represent less than 10% of all orthopedists. However, the number of female orthopedic residents is increasing in Turkey. The aim of this cross-sectional study was to assess and compare the experiences of female orthopedic surgeons in Turkey with their male counterparts, focusing on workplace challenges and surgical inclinations.

Methods: A survey was conducted among 110 age-matched orthopedic surgeons (54 females, 56 males). Of the 81 female orthopedic surgeons in Turkey, 54 participated in the study. The demographic data, career satisfaction, experiences of mobbing, surgical interests, and dynamics with colleagues were examined. Ethical approval was obtained.

Results: The study included residents and specialists with a mean age of 35.08±8.94 years. The largest pre-residency prejudice for women was mobbing, while for men, it was long working hours ($P = .001$). The most significant challenge for both genders halfway through residency was long working hours ($P = .453$). Women reported higher career satisfaction (67.4%) compared to men (58.9%). No significant difference was found between the genders in respect of the incidence of experiencing mobbing at least once in their professional lives ($P = .714$).

Conclusion: Mobbing is a significant issue, particularly for women in surgery, although long working hours affect both genders the most. However, the female surgeons reported experiencing more prejudice from colleagues than was reported by men, highlighting the importance of gender equity in the workplace.

Keywords: Women in orthopedics, gender-based discrimination, orthopedic residency, mobbing, minority challenges

ÖZ

Amaç: Kadınlar, dünya genelinde tıp fakültesi mezunlarının neredeyse yarısını oluştursa da Türkiye dahil birçok ülkede kadın ortopedistler, tüm ortopedistlerin %10'undan azını teşkil etmektedir. Ancak, son yıllarda Türkiye'de kadın ortopedi asistanlarının sayısında artış gözlenmektedir. Bu kesitsel çalışma, Türkiye'deki kadın ortopedistlerin deneyimlerini, iş yerinde karşılaştıkları zorlukları ve cerrahi eğilimlerini erkek meslektaşlarıyla karşılaştırmayı amaçlamaktadır.

Yöntemler: Yaşça eşleştirilmiş 110 ortopedist (54 kadın, 56 erkek) üzerinde bir anket uygulandı. Türkiye'deki 81 kadın ortopedi cerrahından 54'ü çalışmaya katılmayı kabul etti. Demografik özellikler, kariyer memnuniyeti, mobbing deneyimleri, cerrahi ilgi alanları ve meslektaşlarla olan dinamikleri değerlendirildi. Çalışma için etik kurul onamı alındı.

Bulgular: Örneklem, ortalama yaşı 35.08±8.94 olan asistan ve uzmanları içermektedir. Kadınlar için asistanlık öncesindeki en büyük önyargı mobbing iken, erkekler için uzun çalışma saatleri olmuştur ($P = .001$). Asistanlık sürecinin sonunda her iki cinsiyet için en büyük zorluk uzun çalışma saatleri olmuştur ($P = .453$). Kadınlar, erkeklere göre daha yüksek kariyer memnuniyeti bildirmiştir (%67.4, %58.9). Mesleki yaşamlarında en az bir kez mobbinge maruz kalma oranı açısından cinsiyetler arasında anlamlı fark bulunmamıştır ($P = .714$).

Sonuç: Mobbing, özellikle kadınlar için önemli bir sorun oluşturmaktayken, uzun çalışma saatleri her iki cinsiyeti de etkilemektedir. Buna karşın kadınlar, işyerinde cinsiyet eşitliğinin önemini ortaya koyan bir biçimde, meslektaşları tarafından daha fazla önyargıya maruz kalmıştır.

Anahtar kelimeler: Ortopedide kadınlar, cinsiyet temelli ayrımcılık, ortopedi asistanlığı, mobbing, azınlıkların zorlukları

Received/ Geliş Tarihi 01.09.2024
Revision request/Revizyon Talebi 02.11.2024
Last Revision request/Son Revizyon Talebi 20.11.2024
Accepted/Kabul Tarihi 14.12.2024
Publication Date/Yayın Tarihi 28.12.2024

Corresponding author / Sorumlu Yazar:

Elif TUFAN

E-mail: tufanelif@hotmail.com

Cite this article: Tufan E, Sahbat Y, Tokmak B, Demirel E. Challenges and Opportunities in Orthopedics: Do Experiences of Male and Female Surgeons Differ Vastly? *Atatürk Univ Fac Med J Surg Med Sci.* 2024;3(3): 71-80



Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

INTRODUCTION

Orthopedics and Traumatology is known within the medical community as a male-dominated specialty, and the number of women in orthopedic surgery is considerably low both in Turkey and around the world.¹ Although an average of 50% of medical school graduates worldwide are women, female orthopedists in many countries account for less than 10% of all orthopedists.² However, it has been reported that the number of women in orthopedics has increased over the past decade, and it has also been observed that they are publishing an increasing number of studies in orthopedic journals.^{3,4}

The first female orthopedist in Turkey, Zahide Şefik, completed her residency at Istanbul Faculty of Medicine in 1932. While the number of female orthopedists in Turkey was 16 in 2010, today it has reached 81 according to the data obtained from the Ministry of Health in January 2024. Considering that nearly half of these 81 female orthopedists are assistant doctors, it can be inferred that orthopedics has become more attractive to women, especially in the last five years.³

There are studies in the global literature that feature the experiences and challenges faced by female orthopedic surgeons.⁵⁻⁸ In Turkey, although some studies involving surgical specialties throw light on the gender disparities in the workplace⁸⁻¹⁰, despite the significant increase in the number of female orthopedic surgeons, there are no recent studies exploring their experiences in the last decade.

The aim of this case-control study was to investigate the challenges and prejudices faced by women in orthopedics in their professional lives, in comparison to their male counterparts. The prejudices and obstacles to be overcome to make orthopedic residency training more attractive to female physicians were explored, addressing concerns such as mobbing, the amount of physical strength required, long working hours, and professional difficulties both during and after residency.¹⁰⁻¹²

METHODS

The study was conducted between November 10, 2023, and December 20, 2023, in accordance with the Declaration of Helsinki, and ethical approval was obtained from the Ethics Committee of the University of Health Sciences Erzurum University Medical Faculty (08.11.2023/07-85).

A survey was conducted with 110 age-matched physicians (54 females and 56 males) who were working as residents, attending physicians, and academics in Orthopedics and Traumatology in Turkey. Of the 81 female orthopedic surgeons in Turkey, 79 were contacted, and 54 agreed to participate in the study. Two physicians could not be reached, and 25 physicians declined to participate in the study for personal reasons. A total of 56 age-matched male physicians were selected from five different hospitals in five different cities in Turkey (Istanbul, Ankara, Bursa Eskişehir, Erzurum). All the male physicians who were contacted agreed to participate in the study. Physicians of foreign nationality or Turkish citizen doctors working in other countries were not included in the study. The reason for this was that there were no foreign physicians among the female orthopedic surgeons, and physicians working in different countries would not accurately reflect the work environment in Turkey.

Data Collection

The 14-question survey was newly developed for this study. (Table 1) The survey was administered through digital forms via WhatsApp or e-mail. All doctors had access to the Internet, and reported no problems in the process of completing the survey. Verbal and/or written informed consent was obtained from all the study participants. Privacy and data confidentiality were maintained through the participants completing the forms anonymously, with each being assigned a number. One researcher conducted interviews with the participants, and another researcher checked the anonymous forms for accuracy and completeness.

Survey Questions

The questionnaire included six demographic questions to determine age, marital status, and years of working experience in different kinds of facilities. Questions were also asked about the specific fields of orthopedic surgery the participants were interested in and what they found the most challenging.

The concept of mobbing was initially introduced to the literature by pedagogical psychologist Heinz Leymann in the late 1980s⁴, defining it as “behavioral and emotional attacks in the workplace by colleagues of any rank, aiming to inflict psychological harm for various reasons.”.

Table 1: The Survey Questions

Section	Question Number	Question	Possible Answers / Notes
A	1	The hospital you work in	University/Teaching Hospital/Private Hospital/State
A	2	Are you a Resident / Specialist?	Resident / Specialist
A	2a	How many years have you been in your profession, starting from your residency?	Number of years
A	3	Age	Age in years
A	4	Marital Status	Marital status
A	5	Your area of special interest?	Pediatrics, Trauma, Spine, Tumor, Sports Surgery, Arthroplasty, Hand Surgery (Select All That Apply)
A	6	The area you find most challenging in surgery?	Pediatric, Trauma, Spine, Tumor, Sports Surgery, Arthroplasty, Hand Surgery (Select All That Apply)
B	1	What was your biggest fear or prejudice before starting your specialization?	Mobbing, Lack of physical strength, Family life, Inability to adapt, Long working hours
B	2	What was the biggest challenge during the specialization or in the first 2.5 years?	Mobbing, Lack of physical strength, Family life, Inability to adapt, Long working hours
B	3	Did you have a role model when choosing orthopedics? If yes, was it a woman/man?	Yes/No, Woman/Man if yes
B	4	How important do you think physical strength is in orthopedic surgery?	Rate from 1-5. 1 being not important, 5 being very important
B	5	Which working group did you find most challenging in your professional life?	Senior resident team, Academics, Specialists, Nurses, Hospital staff (select all that apply)
B	6	Do you think you have been subjected to mobbing at any point in your professional life?	Yes/No
B	7	What is your current level of satisfaction and regret in your professional life?	1: very regretful, 2: regretful, 3: so-so, 4: satisfied, 5: very satisfied
B	8	What is your score out of 100 regarding question 7?	0: not satisfied at all – 100: very satisfied

Mobbing impacts not only the victim's work life but also their workplace and society at large and is recognized as a widespread issue with serious consequences. The International Labor Organization identifies mobbing as one of the major challenges in the workplace.⁵⁻¹² In the assessment of mobbing in this study, the definition given by Leymann⁴⁻¹³ in 1990 was used.

Other questions were directed to find out what prejudices the participants had before working in orthopedics and how they evaluated their experience after 2.5 years or at the end of residency training. (Table 1) The 2.5-year criterion has been used for the determination of senior resident doctors as it constitutes half of the training period.

The attitudes of other surgeons, nurses, and hospital staff towards the participants were questioned, and

participants also rated their overall job satisfaction. The satisfaction rate was assessed with scores ranging from 0 to 100, where 0 was labeled as not satisfied at all and 100 as very satisfied.

Statistical Analysis

For statistical analyses, IBM SPSS Statistics 26 (IBM SPSS Corp. Armonk, NY, USA) software was utilized. Descriptive statistical values such as mean, standard deviation, median, frequency, ratio, minimum, and maximum were employed when evaluating the study data. The conformity of quantitative data to normal distribution was assessed using the Kolmogorov-Smirnov test, Shapiro-Wilk test, skewness-kurtosis tests, and graphical methods.

For the comparison of quantitative data exhibiting normal distribution between two groups, such as the age of

the participants, the Independent Samples t-test was used, and the Mann-Whitney U-test was applied to data not showing normal distribution, such as marital status, the number of children and experience of mobbing. For comparisons among three or more groups showing normal distribution, the One-way ANOVA test was used, and for those not showing normal distribution such as career satisfaction levels, the Kruskal-Wallis test was applied. Qualitative data such as the workplace, working position and surgical subspecialties of interest, were analyzed using the Pearson Chi-Square test, Fisher Freeman Halton Exact test, and Fisher's Exact test. The level of statistical significance was accepted as $P < .05$.

RESULTS

The study included a total of 110 orthopedic residents and attending physicians, comprising 54 females (49.1%) and 56 males (50.9%) with an average age of 35.08 ± 8.94 years (range 25-60 years). No statistically significant difference was found in the ages of physicians according to gender ($P > .05$). Of the whole group, 26 females (48,1%) and 28 males (50%) were undertaking residency, and the rest of the participants were specialist orthopedic surgeons. The

duration of working experience in the field was mean 11.17 years for women and 7.04 years for men. The demographic information is presented in Table 2.

The largest prejudice pre-residency for female physicians was mobbing, while for male physicians, it was the long working hours ($P = .001$). (Figure 1) For both genders, the greatest difficulty experienced halfway through their residency was the long working hours ($P = .453$). (Figure 2). Before choosing the specialty of orthopedics, 55.6% of female physicians and 37.5% of male physicians had a role model ($P = .058$). Of the female physicians, 40% had female role models, while 100% of the male physicians had male role models ($P = .001$). Occupational challenges are presented in Table 3.

For both groups, the area of greatest interest was trauma, and the area that presented the greatest challenge was vertebral surgery. (Figure 3) For males, the rates of interest in arthroplasty, and for female's interest in pediatrics and hand surgery were significantly higher ($P = .001$, $P = .005$, $P = .082$, respectively). Males were determined to be more likely to identify hand surgery as a challenging field of surgery ($P < .01$). (Figure 4)

Table 2: Evaluation of Demographic Characteristics by Gender

		Gender		P
		Female (n=54) n (%)	Male (n=56) n (%)	
Demographics				
Age (years)	Median (Min-Max)	35 (25-60)	32 (26-45)	.053 ^a
	Mean±Sd	37.00±11.24	33.23±5.42	
Marital Status	Single	31 (57.4)	19 (33.9)	.013 ^b
	Married	23 (42.6)	37 (66.1)	
Occupational Characteristics				
Workplace	State Hospital	10 (18.5)	9 (16.1)	.121 ^b
	Teaching Hospital	16 (29.6)	19 (33.9)	
	University Hospital	19 (35.2)	26 (46.4)	
	Private Clinic	9 (16.7)	2 (3.6)	
Position at the Workplace	Assistant Doctor	26 (48.1)	28 (50.0)	.846 ^b
	Specialist	28 (51.9)	28 (50.0)	
Experience in the profession (years)	Median (Min-Max)	5 (1-47)	5.5 (1-20)	.123 ^c
	Mean±SD	11.17±10.68	7.04±5.64	
	1-4 years	19 (35.2)	25 (44.6)	
	5-9 years	14 (25.9)	15 (26.8)	
	10-14 years	3 (5.6)	6 (10.7)	
	15-19 years	6 (11.1)	9 (16.1)	

^aIndependent Samples T Test

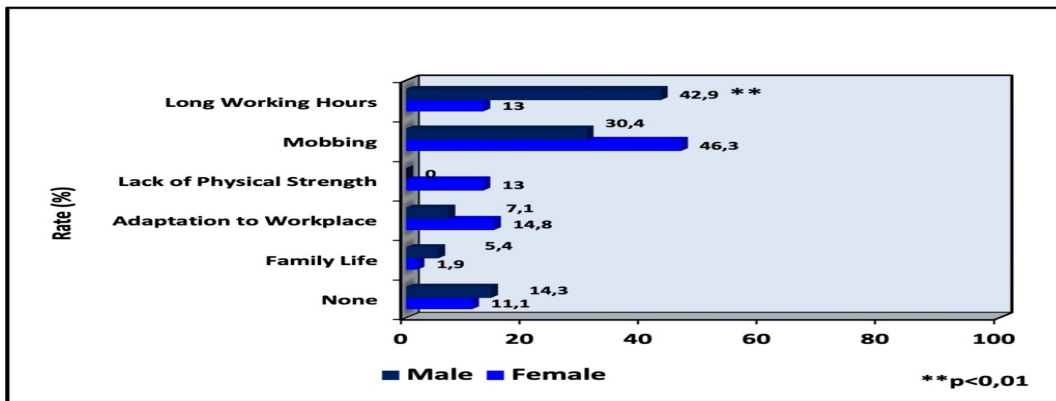
^bPearson Chi-Square Test, * $P < .05$

Table 3: Evaluation of Occupational Characteristics by Gender

Atatürk Univ Fac Med J Surg Med Sci 2024;3(3)

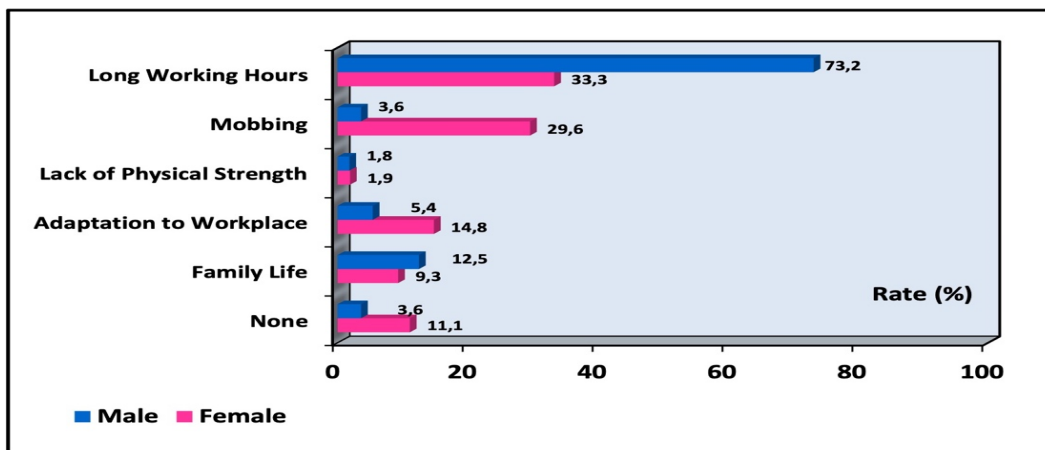
Occupational Characteristics	Gender		P	
	Female (n=54)	Male (n=56)		
	n (%)	n (%)		
The most feared prejudice before residency	None	6 (11.1)	8 (14.3)	.001 ^a
	Family life	1 (1.9)	3 (5.4)	
	Adaptation to the workplace	8 (14.8)	4 (7.1)	
	Lack of physical strength	7 (13)	0 (0)	
	Mobbing	25 (46.3)	17 (30.4)	
	Long working hours	7 (13)	24 (42.9)	
Biggest challenge in the process after 2.5 years / after residency	None	6 (11.1)	2 (3.6)	.001 ^a
	Family life	5 (9.3)	7 (12.5)	
	Adaptation to the workplace	8 (14.8)	3 (5.4)	
	Lack of physical strength	1 (1.9)	1 (1.8)	
	Mobbing	17 (31.5)	2 (3.6)	
	Long working hours	17 (31.5)	41 (73.2)	

^aFisher Freeman Halton Exact Test



**Fisher Freeman Halton Exact Test, P<.01

Figure 1: Distribution of physicians' most feared prejudices before starting their residency according to gender



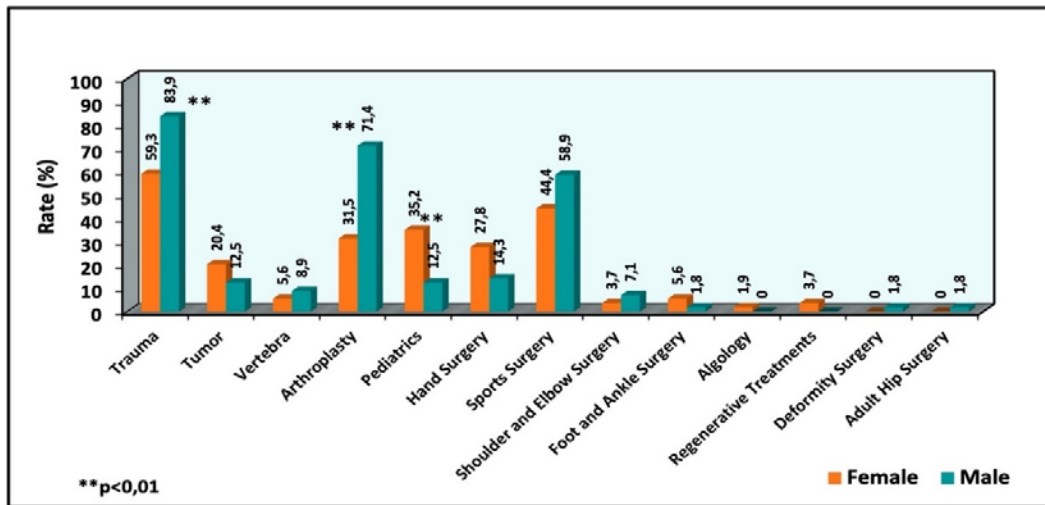
*Fisher Freeman Halton Exact Test, P<.05

Figure 2: Distribution of the greatest difficulties experienced at the end of residency / after the first 2.5 years according to gender

The most challenging workgroup for both female and male orthopedic surgeons of all ages in their professional life was the resident team (64.8% for females; 53.6% for males), with no significant difference found between the groups in terms of conflicts encountered at work ($P = .231$). When analyzed by age group, female orthopedic residents experienced higher levels of difficulties with nurses and staff compared to female specialists ($P < .05$) (Figure 5).

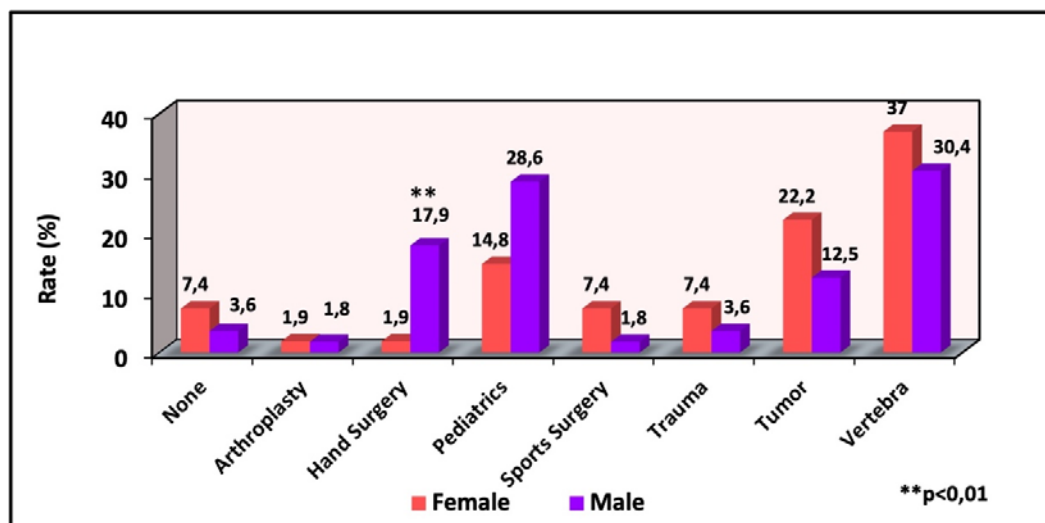
As mobbing can often be age or workplace related, the experiences of mobbing in the workplace was assessed with the question of “Do you think you have been subjected to

mobbing at any point in your professional life?”. The rates of experiencing mobbing at least once in the professional life of female and male orthopedic surgeons (79.6%, 73.2% respectively) did not differ significantly between the genders ($P = .714$). Satisfaction with the career was assessed with the questions “What is your current level of satisfaction and regret in your professional life?” (Likert Scale) and “What is your score out of 100 regarding question 7?” Satisfaction levels were determined to be 67.4% for female physicians and 58.9% for male physicians, with a significant difference identified between the groups ($P = .048$).



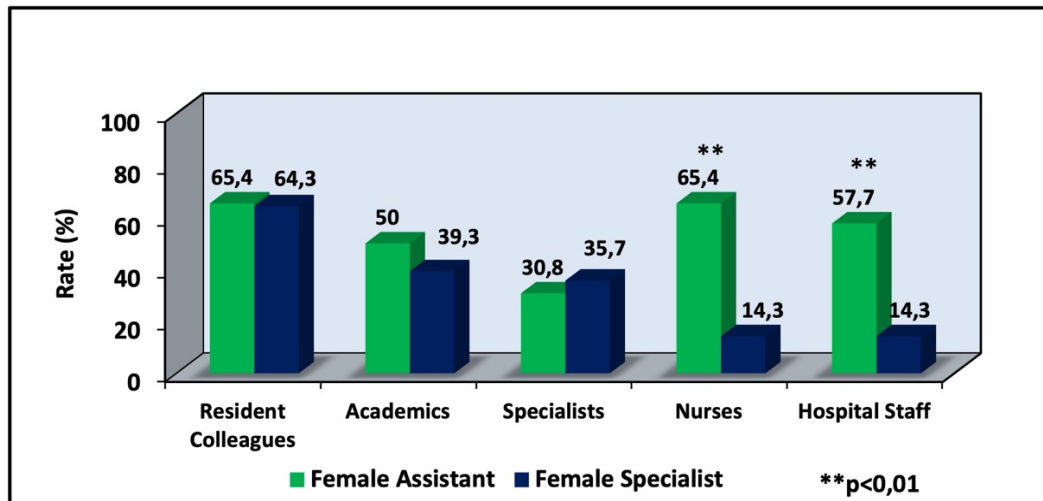
**Pearson Chi-Square Test, $P < .01$

Figure 3: Distribution of physicians' specific areas of interest according to gender



*Fisher Freeman Halton Exact Test, $P < .01$

Figure 4: Distribution of the most challenging areas in surgery according to gender



*Fisher Freeman Halton Exact Test, $P<.05$

Figure 5: Other healthcare personnel with whom female orthopedists had the most difficulties according to their position in the workplace

DISCUSSION

The findings of this study showed that 31.5% of female orthopedic surgeons indicated mobbing as the biggest challenge during their residency, compared to 3.6% of males. However, the rates of experiencing mobbing at least once during the course of their career did not statistically differ between the genders. (79.6% for females, 73.2% for males) Correspondingly, Balch et al., reported that 81% of female orthopedic surgeons were subjected to discrimination, bullying, and mobbing, compared to 35% of male surgeons.¹²⁻¹⁴ Dikmetaş et al., also reported in their study that there was no gender difference in terms of mobbing perception amongst resident doctors in all specialties. However, the rates of mobbing were significantly higher in residents of surgery than internal medical branches.¹³⁻¹⁵

The current study results showed that 31.5% of women and 73.2% of men in orthopedic surgery experience long working hours as the most significant issue, necessitating the implementation of new measures at the level of the Ministry of Health. In this context, specific regulations related to on-call duties are currently being established in Turkey.¹⁶⁻²³ Innovations in this field may lead to changes in the parameters of satisfaction and experiences of mobbing for doctors, since stressful work environments can negatively impact physicians' overall health, putting their mental well-being in a more vulnerable position. The implementation of new regulations would be a crucial step in breaking these cycles.

No regret about having selected orthopedics was stated

by 94.4% of the female participants, and 61.1% stated that they are "Satisfied" or "Very satisfied" in their career path, significantly higher than their male counterparts. Similarly, Çopuroğlu et al. reported in their study conducted in Turkey that all 11 female orthopedists responded "No" to the question, "Have you ever regretted choosing orthopedics and traumatology during your residency?"³ It can be suggested that despite the difficulties in their professional lives, women are satisfied with their fulfillment in the field of orthopedics. However, this situation may also arise from the motivation of women to stand firm and strong in a field where they constitute the minority.

While no statistically significant difference was found in the challenges faced by female orthopedic residents compared to female specialists in their relationships with specialists and academics, it was determined that they encountered more difficulties in their relationships with nurses and other staff ($P <.01$, $P <.01$). Brown et al. highlighted the negative attitudes of nurses towards female surgeons and their contribution to professional burnout.¹⁴⁻¹⁷ The rates at which female resident doctors report gender-based discrimination by nurses are statistically significant. Similarly, the current study found it statistically significant that female orthopedic residents experience the most problems with nurses and hospital staff. This may stem from the fact that younger female residents are more vulnerable to negative attitudes compared to more experienced specialists.

The current study female participants were more likely to be interested in hand surgery and pediatric orthopedics in comparison to their male counterparts. Bratescu et. al.

also reported that female surgeons were more interested in pediatric surgery, and hand and foot surgery than male surgeons.¹⁵⁻¹⁸ More mentorship in these areas was stated by the participants as the reason for this. The current study findings showed that of the female surgeons who had a role model in their career, 40% identified other female surgeons as their role model. In contrast, none of the male surgeons reported having a female surgeon as a role model.

Similar to many western countries, females constitute 14% of the residents and 7% of the consultants in orthopedic surgery in the UK, and in the USA, 7.2% of practising orthopedic surgeons are women.^{16,17-20} Van Heest reported that efforts were being made to ensure that 30% of orthopedic residents are women, and with the current rate of "improvement," this goal would be reached by 2072.¹⁸⁻²¹ It has been shown that clinical experience in orthopedics, musculoskeletal system education, and mentorship promoting gender diversity are effective in attracting female medical students to orthopedic surgery.¹⁹⁻²⁴ Although the number of female orthopedists in Turkey has increased almost 5-fold in the last 13 years, we are still far from reaching Van Heest's projection. The rate of female orthopedic surgeons is approximately 2.5% in Turkey, according to the most recent information obtained from the Ministry of Health.

The presence of different genders in a community not only facilitates effective decision-making, innovation, and creativity but also leads to a better understanding of patients. Gender diversity is also a diversity of talents and through many studies has been shown to improve the working environment, patient care and accurate diagnoses.²⁵ However, more research is needed regarding the situation in Turkey.

Limitations

This study had some limitations, such as the Gender Inequality in the Workplace Survey in Turkish not being used, due to its long application time and potential to reduce accessibility to participants.²⁶ Another limitation was the small sample size of female participants, with only 54 out of 81 female orthopedic surgeons participating, while 79 surgeons were able to be contacted. The most likely reasons for not wishing to participate are the intense working conditions of physicians and personal reasons. In male surgeons, evaluating a smaller group from a larger available sample might mean that the findings do not reflect the trends of the entire population.

Another limitation could be considered to be that as the collected data were based on personal statements, these

can be subject to recall bias. In addition, questions related to gender may create social desirability bias among women in a field predominantly occupied by men, leading them to under or over-report the data. This study may also be subject to survivor bias, as it did not include individuals who had left orthopedic residency training.

CONCLUSION

While mobbing continues to be a problem for female orthopedic surgeons, long working hours contribute to professional burnout for both genders. Nevertheless, women in Orthopedics and Traumatology are mostly satisfied with their profession. Ensuring gender diversity is crucial for future generations so that female physicians can set goals and progress towards those without concerns of social pressures.

Recommendations that can be made in the light of the findings of this study, are to create more flexible working hours for surgeons and to promote more women into mentorship positions in male-dominated fields. This approach could encourage future generations of medical students to pursue careers in orthopedics and traumatology.

Ethics Committee Approval: This study was approved by the institutional ethics committee (SBÜ Erzurum University Medical Faculty: 11.2023-85).

Informed Consent: All participants were informed about the study and informed consent was obtained.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – YŞ, ED, ET; Design- YŞ, ED, ET; Supervision- YŞ, ED ; Resources- YŞ,ED; Data Collection and/or Processing- ET, BT; Analysis and/or Interpretation- YŞ, ET; Literature Search- ED, ET, YŞ; Writing Manuscript- ET; Critical Review- YŞ, ED.

Conflict of Interest: The authors declare that they have no conflicts of interest.

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

Etik Komite Onayı: Bu çalışma yerel etik kurul tarafından onaylandı (SBÜ Erzurum Üniversitesi Tıp Fakültesi: 11.2023-85).

Hasta Onamı: Tüm katılımcılara çalışma hakkında bilgi verildi ve aydınlatılmış onamları alındı.

Hakem Değerlendirmesi: Dış bağımsız.

Yazar Katkıları: Fikir- YŞ, ED, ET; Tasarım- YŞ, ED, ET; Denetleme- YŞ, ED; Kaynaklar- YŞ, ED; Veri Toplanması ve/veya İşlemesi - ET, BT; Analiz ve/veya Yorum- YŞ, ET; Literatür ED, ET, YŞ; Yazıyı Yazan- ET Eleştirel İnceleme- YŞ, ED.

Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.

Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

REFERENCES

1. Clawson DK. Orthopaedic manpower: an overview. *Clin Orthop Relat Res.* 2001;(385):7-12.
2. Green J, Vivian C, Laurie H et al. Diversity: Women in orthopaedic surgery-a perspective from the International Orthopaedic Diversity Alliance. *J Orthop Trauma.* (2020): 44-51.
3. Çopuroğlu C, Ulusam A, Özcan M, Çiftdemir M. Ortopedist olmak için erkek cinsiyet şart mıdır?. *Acta Orthopaedica et Traumatologica Turcica.* 2011;44(6). doi:10.3944/aott.v44i6.4831
4. Peterman NJ, Macinnis B, Stauffer K, Mann R, Yeo EG, Carpenter K. Gender Representation in Orthopaedic Surgery: A Geospatial Analysis From 2015 to 2022. *Cureus.* Published online July 26, 2022. doi:10.7759/cureus.27305
5. Rohde RS, Wolf JM, Adams JE. Where Are the Women in Orthopaedic Surgery?. *Clin Orthop Relat Res.* 2016;474(9):1950-1956. doi:10.1007/s11999-016-4827-y
6. Hoof MA, Sommi C, Meyer LE, Bird ML, Brown SM, Mulcahey MK. Gender-related Differences in Research Productivity, Position, and Advancement Among Academic Orthopaedic Faculty Within the United States. *J Am Acad Orthop Surg.* 2020;28(21):893-899. doi:10.5435/JAAOS-D-19-00408
7. Genç;ARDA Kİ. What Can We Say About Gender Discrimination in Medicine? A Limited Research From Turkey. *Ankara Üniversitesi Tıp Fakültesi Mecmuası.* 2010;63(1):1-8. doi:10.1501/tipfak_00000000758
8. Çelik B, Canbaz S. Work-related strain and the prevalence of burnout syndrome in thoracic surgeons and research assistants in turkey. *Current Thoracic Surgery.* 2021;6(3):94. doi:10.26663/cts.2021.0019
9. Gürsu S, Yıldırım T, Demir B, Şahin V. Kadından ortopedist olmaz! Efsaneyi yıkanlar. *Acta Orthop Traumatol Turc* 44(1): IV-IX, 2010
10. Leymann H. Mobbing and psychological terror at workplaces. *Violence Vict.* 1990;5(2):119-126.
11. Chappell D, Di Martino V. eds. Violence at Work. Geneva: International Labour Organization; 2006.
12. Srikumaran U. CORR Insights®: What Associations Exist Between Comorbidity Indices and Postoperative Adverse Events After Total Shoulder Arthroplasty? *Clin Orthop Relat Res.* 2019;477(4):891-893. doi:10.1097/CORR.0000000000000675
13. Chambers CC, Ilnow SB, Monroe EJ, Suleiman LI. Women in Orthopaedic Surgery: Population Trends in Trainees and Practicing Surgeons. *J Bone Joint Surg Am.* 2018;100(17):e116. doi:10.2106/JBJS.17.01291
14. Erickson BJ, Shishani Y, Bishop ME, Romeo AA, Lederman E, Gobeze R. Tuberosity Repair in Reverse Total Shoulder Arthroplasty for Fracture Using a Stem-based Double-row Repair: A Cadaveric Biomechanical Study. *J Am Acad Orthop Surg.* 2020;28(23):e1059-e1065. doi:10.5435/JAAOS-D-19-00667
15. Dikmetaş E, Top M, Ergin G. An examination of mobbing and burnout of residents. *Turk Psikiyatri Derg.* 2011;22(3):137-149.
16. Newcomb AB, Duval M, Bachman SL, Mohess D, Dort J, Kapadia MR. Building Rapport and Earning the Surgical Patient's Trust in the Era of Social Distancing: Teaching Patient-Centered Communication During Video Conference Encounters to Medical Students. *J Surg Educ.* 2021;78(1):336-341. doi:10.1016/j.jsurg.2020.06.018
17. Bratescu RA, Gardner SS, Jones JM, et al. Which Subspecialties Do Female Orthopaedic Surgeons Choose and Why?: Identifying the Role of Mentorship and Additional Factors in Subspecialty Choice. *J Am Acad Orthop Surg Glob Res Rev.* 2020;4(1):e19.00140. Published 2020 Jan 20. doi:10.5435/JAAOSGlobal-D-19-00140
18. Peterman NJ, Macinnis B, Stauffer K, Mann R, Yeo EG, Carpenter K. Gender Representation in Orthopaedic Surgery: A Geospatial Analysis From 2015 to 2022. *Cureus.* Published online July 26, 2022. doi:10.7759/cureus.27305
19. British Orthopaedic Trainee's Association. Women in surgery. Accessed May 6, 2024. Available at: <http://www.bota.org.uk/women-in-surgery>.
20. Van Heest A. Gender Diversity in Orthopedic Surgery: We All Know It's Lacking, but Why? *Iowa Orthop J.* 2020;40(1):1-4.
21. Lattanza LL, Meszaros-Dearolf L, O'Connor MI, et al. The Perry Initiative's Medical Student Outreach Program Recruits Women Into Orthopaedic Residency. *Clin Orthop Relat Res.* 2016;474(9):1962-1966. doi:10.1007/s11999-016-4908-y
22. Mason BS, Ross W, Ortega G, Chambers MC, Parks ML. Can a Strategic Pipeline Initiative Increase the Number of Women and Underrepresented Minorities in Orthopaedic Surgery?. *Clin Orthop Relat Res.* 2016;474(9):1979-1985. doi:10.1007/s11999-016-4846-8
23. Mason BS, Ross W, Chambers MC, Grant R, Parks M. Pipeline program recruits and retains women and underrepresented minorities in procedure-based specialties: a brief report. *Am J Surg.* 2017;213(4):662-665. doi:10.1016/j.amjsurg.2016.07.022.
24. Gomez LE, Bernet P. Diversity improves performance and outcomes. *J Natl Med Assoc.* 2019;111(4):383-392. doi:10.1016/j.jnma.2019.01.006.
25. Mevzuat Bilgi Sistemi. Accessed October 20, 2023. Available at: <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=85319&MevzuatTur=3&MevzuatTertip=5>.
26. Ünlüoğlu, DÜ, Sungur Taşdemir, Z. Avrupa Sosyal Şartı Çerçevesinde Türkiye'de Kadın İşgücünün

Değerlendirilmesi: Eskişehir Özel Sağlık Sektörü Örneği.
Anadolu Akademi Sosyal Bilimler Dergisi, 2(1), 113-130.