ARAŞTIRMA RESEARCH

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Ethical Sensitivity of Physicians in the Discipline of Orthopedics and Traumatology: A Cross-Sectional Study

Ortopedi ve Travmatoloji Disiplinindeki Hekimlerin Etik Duyarlılığı: Kesitsel Bir Çalışma

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This study was announced as a verbal announcement at the International 7. Gevher Nesibe Health Sciences Conference of 16-17 April 2021 in Türkiye.

ABSTRACT The present study was conducted to determine the ethical sensitivity of physicians in the discipline of orthopedics and traumatology. The study, conducted between March and April 2020, followed a cross-sectional design and included 234 physicians. Although sampling was not performed, physicians in the discipline of orthopedics and traumatology who complied with the selection criteria constituted the sample. Data collection was performed using an online form. Necessary permissions were obtained to conduct the study. The average age of all participants was 37.27±7.92 years. Of the participants, 96.6% were male. Further, 50.5% of the participants were specialist orthopedic physicians and 85.5% were willingly employed. Of the participants, 68.4% stated that they received ethics training during their academic life and 70.9% stated that they received no ethics training during their professional life. Of the participants, 52.1% stated that they had knowledge about ethics, 62.4% stated that they experienced ethical dilemmas and 36.8% stated that they had resolved the ethical dilemma they encountered. The total mean score for physicians in the discipline of orthopedics and traumatology on the Ethical Sensitivity Scale was 89.70±17.00. In addition, ethical sensitivity was higher for physicians who had an academic title and over 5 years of experience in the discipline of orthopedics and traumatology, who were willingly employed, who had received ethics training, and who had independently resolved an ethical dilemma. It is thought that these findings can be used to develop models based on an holistic ethical approach, especially for physicians in the discipline of orthopedics and traumatology.

Keywords: Discipline of orthopedics and traumatology; ethical sensitivity; physician

ÖZET Bu çalışma, ortopedi ve travmatoloji disiplinindeki hekimlerin etik duyarlılıklarını belirlemek amacıyla yapılmıştır. Çalışma, kesitsel olarak Mart-Nisan 2020 tarihleri arasında, ortopedi ve travmatoloji disiplinindeki hekimlerle yapılmıştır. Çalışmada örneklem seçimine gidilmeyerek, seçim kriterlerine uyan 234 hekim örneklemi oluşturmuştur. Veriler "online" form olarak, internet üzerinden elektronik posta aracılığıyla toplanmıştır. Araştırmanın yapılması için gerekli izinler alınmıştır. Tüm katılımcıların yaş ortalaması 37,27±7,92'dir. Katılımcıların %96,6'sı erkektir. Katılımcıların %50,5'inin uzman ortopedi hekimi ve %85,5'inin mesleğini gönüllü olarak yaptığı saptanmıştır. Katılımcıların %68,4'ü eğitim hayatında etik eğitimi aldığını, %70,9'u ise çalışma hayatında etik eğitimi almadığını bildirmiştir. Katılımcıların %52,1'i etik konusunda bilgi sahibi iken, %62,4'ü etik ikilem yaşamaktadır. Katılımcıların %36,8'i karşılaştığı etik ikilemi kendisi çözmektedir. Ortopedi ve travmatoloji disiplinindeki hekimlerin etik duyarlılık ölçeği toplam puan ortalamaları 89,70±17,00'dır. Ayrıca akademik bir unvana sahip olan, ortopedi ve travmatoloji alanında çalışma süresi 5 yıldan fazla olan, mesleğini isteyerek yapan, etik eğitimi aldığını belirten ve etik ikilemi çözebilen hekimlerin etik duyarlılığının daha yüksek olduğu bulunmuştur. Bu bulguların, özellikle ortopedi ve travmatoloji disiplinindeki hekimlere yönelik etik açısından bütüncül yaklaşımı temel alan modelleri geliştirilmesinden kullanılabileceği düşünülmektedir. Bu doğrultuda, tıp ve uzmanlık eğitiminde sürekliliği olan etik eğitimlerin verilmesi önerilmektedir.

Anahtar Kelimeler: Ortopedi ve travmatoloji disiplini; etik duyarlılık; hekim

Medicine is an applied health discipline involving theoretical knowledge and expertise. Physicians are involved in a dynamic process systematically evaluating the treatment services aiming to protect the physical, mental, and social health of individuals in all segments of society. Moreover, they have an

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obligation to perform their duties toward human health in the environment in accordance with the laws and regulations.[1] Physicians have several ethical duties and responsibilities toward themselves, their colleagues, their patients, and society that must be fulfilled with a certain approach.[2] Ethics is the set of principles that regulate behaviors that of the individual or the profession.[3] Medical ethics involves what health professionals do or not to do to exhibit good behavior in line with treatment principles, and includes subjective and objective thinking, reasoning, and complying with determined standard rules.[4] Simultaneously, it refers to the knowledge of ethics, which primarily indicates the patient-physician relationship, in addition to physician-physician and physician-other healthcare professional relationships.[5] Ethical principles should be observed to maintain professionalism in physician-patient, physician-physician, and physician-society relationships.[6] Ethical sensitivity includes recognizing an ethical conflict, demonstrating a contextual and intuitive understanding of the patient's vulnerability, and acknowledging the ethical consequences of the decisions taken on behalf of the patient.[7] Ethical sensitivity is influenced by culture, religion, education, and life experiences. It is developed via education and is upheld by maintaining professional competence and exhibiting behaviors in accordance with the ethical codes of the profession.[8]

In the discipline of orthopedics and traumatology, ethical issues are typically encountered in terms of informed consent, privacy, surgical decisions regarding bodily integrity, healthcare professional-patient relationships, and honest communication.[9] Physicians should provide solutions to ethical issues they encounter under the guidance of the universal principles of ethics *(beneficence, non-maleficence, autonomy, and justice)*.[10] Currently, the concept of ethical sensitivity is considered important for physicians to ensure awareness of their ethical responsibilities. Determining the ethical sensitivity of physicians in the discipline of orthopedics and traumatology, which is one of the basic fields of medicine, is also important in terms of solving ethical problems. The number of studies evaluating the ethical sensitivity of physicians is limited in the literature. This study will contribute to the literature, benefit its readers and emphasize the importance of ethical education in medicine and specialty education. Accordingly, the present study was conducted to determine the ethical sensitivity of physicians in the discipline of orthopedics and traumatology.

RESEARCH QUESTIONS

- What is the ethical sensitivity level of physicians in the discipline of orthopedics and traumatology?
- Is there a difference between the ethical sensitivity of physicians in the discipline of orthopedics and traumatology and their sociodemographic characteristics?
- Is there a difference between the ethical sensitivity level of physicians in the discipline of orthopedics and traumatology and certain ethical approaches?

MATERIAL AND METHODS

STUDY TYPE

This cross-sectional study was conducted to determine the ethical sensitivity levels of physicians in the discipline of orthopedics and traumatology.

Study Population and Sample

The study population comprised physicians employed in the orthopedic and traumatology department of hospitals in a region of Anatolia. Sampling was not performed in the study, and 234 physicians who met the selection criteria constituted the sample. At the end of the study, power analysis and effect size calculations were performed. The power of the test was calculated as 0.99 according to the post-hoc power analysis conducted for 234 subjects at an effect size of 0.50 and a confidence level of 95%. Physicians who met the following criteria were included in the study.

Inclusion criteria for the study;

- Have been employed or are employed in the discipline of orthopedics and traumatology
- Have been employed in the discipline of orthopedics and traumatology for at least 1 year
- Willingly participated in the study

ETHICAL CONSIDERATIONS

The study was conducted according to the Principles of the Declaration of Helsinki. Ethics committee approval was obtained from the ethics committee of Nevşehir Hacı Bektaş Veli University for the implementation of the study (date: March 19, 2020, no: 2020.09.76). Physicians in the discipline of orthopedics and traumatology were informed about the purpose and scope of the study and voluntarily participated in the study.

DATA COLLECTION TOOLS

Study data were collected using an introductory information form and an ethical sensitivity scale.

Introductory Information Form: This comprised a total of 12 questions that included the characteristics of physicians in the discipline of orthopedics and traumatology such as sex, age, education level, department in which they are employed, and duration of employment in the discipline of orthopedics and traumatology, as well as whether they are willingly/unwillingly employed and their level of ethical knowledge (Appendix 1).

Ethical Sensitivity Scale: The scale was developed by Kim Lutzen to determine ethical sensitivity, and its validity and reliability study in Türkiye was conducted by Hale Tosun.[11] The Moral Sensitivity Questionnaire comprises 30 items (Appendix 2). The scale has six sub-dimensions including autonomy, benefit, holistic approach, conflict, practice, and orientation. The lowest score that can be obtained from the questionnaire is 30 and the highest score is 210 (the scale has no cut-off point). In terms of ethics, a low score indicates high sensitivity and a high score indicates low sensitivity. In the validity and reliability study for the questionnaire, the Cronbach's alpha value of the scale was 0.84.[12] In the present study, the Cronbach's alpha coefficient, which provides the general reliability coefficient for the scale, was 0.80, determined using the SPSS (Statistical Package for Social Sciences for Windows 22.0, Inc, IL, USA) program.[13]

COLLECTION OF DATA

Data were collected between March-April 2020 using an online form prepared by the investigators. Before the implementation of the study, the form was applied

APPENDİX 1: Introductory Information Form.

1. **Yaşınız:**
2. **Cinsiyetiniz:** 1. Kadın 2. Erkek
3. **Eğitim Durumunuz:**
   a. Asistan Doktor
   b. Uzman Doktor
   c. Yandal Uzmanı
   d. Akademisyen Doktor
4. **Mesleki Deneyiminiz:** 1,1-5 yıl arası 2,5-10 yıl arası 3,10-15 yıl arası 4,15 yıl ve üstü
5. **Nerede Çalışmaktasınız?**
   1. Tıp Fakültesi Hastaneleri
   2. Devlet Hastanesi
   3. Eğitim ve Araştırma Hastanesi
   4. Özel Hastane
6. **Mesleğinizi isteyerek mi yapıyorsunuz?** 1. Evet 2. Hayır. 3. Kararsızım
7. **Eğitim hayatınızda etik duyarlılık konusunda bir eğitim aldınız mı?** 1. Evet 2. Hayır 3. Kararsızım
8. **Çalışma hayatınızda etik duyarlılık konusunda bir eğitim aldınız mı?** 1. Evet 2. Hayır 3. Kararsızım
9. **Çalışmakta olduğunuz kurumda etik komite var mı?** 1. Evet 2. Hayır 3. Bilmiyorum
10. **Etik duyarlılık konusunda bilgi sahibi misiniz?** 1. Evet 2. Hayır 3. Kararsızım
11. **Çalıştığınız süre içerisinde herhangi bir etik ikilemle karşılaştınız mı?** 1. Evet 2. Hayır 3. Kararsızım
12. **Evetse nasıl çözdünüz?** 1. Kendim çözdüm 2. Yardım alarak çözdüm 3. Çözemedim 4. Diğer

APPENDİX 2: Ethical Sensitivity Scale.							
Aşağıdaki ifadeler etik duyarlılıkla ilgilidir. Her ifade 1-7 puan arasında verilerek değerlendirilecektir. Lütfen bu ifadelere uygun gördüğünüz değerlendirmenin karşısına X işareti koyarak belirtiniz. Lütfen her ifadeye mutlaka TEK yanıt veriniz ve kesinlikle BOŞ bırakmayınız. En uygun yanıtları vereceğinizi ümit eder, katkılarınız için teşekkür ederim.	Tamamen Katılıyorum						Hiç Katılmıyorum
1. "Hekim olarak sorumluluğum, hastanın genel durumu hakkında bilgi sahibi olmaktır."	1	2	3	4	5	6	7
2. "Hastalarımda bir iyileşme göremezsem, işimin bir anlamı olmadığını hissederim."	1	2	3	4	5	6	7
3. "Yaptığım her işimde hastadan olumlu bir yanıt almak benim için önemlidir."	1	2	3	4	5	6	7
4. "Hastanın isteği dışında bir karar verme ihtiyacı hissettiğim zaman, hasta için en yararlı olduğuna inandığım şeyi yaparım."	1	2	3	4	5	6	7
5. "Hastanın güvenini kaybedersem, hekim olarak işimin anlamını yitirdiğini düşünürüm."	1	2	3	4	5	6	7
6. "Güç bir karar vermek zorunda kaldığımda, hastaya karşı dürüst olmak her zaman önemlidir."	1	2	3	4	5	6	7
7. "İyi bir bakımın, hastanın kendi seçimine saygıyı içerdiğine inanırım."	1	2	3	4	5	6	7
8. "Hastanın hastalığını anlama/kavrama eksikliği varsa az da olsa onun için yapabileceğim bir şeyler vardır."	1	2	3	4	5	6	7
9. "Hastaya nasıl yaklaşmam gerektiği konusunda sıklıkla çelişkiler yaşarım."	1	2	3	4	5	6	7
10. "Hastaların bakım/tedavisinde kesin ilkelere sahip olmanın önemli olduğuna inanırım."	1	2	3	4	5	6	7
11. "Etik olarak doğru eylemin ne olduğuna karar vermekte zorlandığım durumlarla sık sık karşılaşırım."	1	2	3	4	5	6	7
12. "Hastanın kişisel geçmişi ile ilgili bilgiye sahip değilsem, standart işlem/prosedürlere güvenirim."	1	2	3	4	5	6	7
13. "Bakım/tedavi uygulamalarında hemşire-hekim-hasta ilişkisinin çok önemli bir bileşen olduğuna inanırım."	1	2	3	4	5	6	7
14. "Hastanın kendisi hakkında karar vermesine ilişkin durumlarla sık sık karşılaşırım."	1	2	3	4	5	6	7
15. "Hasta karşı çıksa bile her zaman en iyi yaklaşımlar konusunda inandığım bilgiler doğrultusunda hareket ederim."	1	2	3	4	5	6	7
16. "Çoğu kez iyi bakım/tedavinin hasta için karar vermeyi de içerdiğine inanırım."	1	2	3	4	5	6	7
17. "Ne yapacağım konusunda emin olmadığımda çoğunlukla diğer hekimlerin hasta hakkındaki bilgilerine güvenerek hareket ederim."	1	2	3	4	5	6	7
18. "Doğru karar verip vermediğimi her şeyden çok hastanın yanıtı belirler."	1	2	3	4	5	6	7
19. "Norm ve değerlerimi sıklıkla eylemlerime yansıtırım."	1	2	3	4	5	6	7
20. "Etik açıdan doğru ya da yanlış olanı bilmekte zorlandığım durumlarda teorik bilgilerden daha çok kendi deneyimlerimi yararlı bulurum."	1	2	3	4	5	6	7
21. "Bir hasta istemi dışında hastaneye yatmayı/tedaviyi reddettiğinde izleyeceğim birtakım kuralların olması önemlidir."	1	2	3	4	5	6	7
22. "İyi bir bakım/tedavinin hasta katılımını içerdiğine inanırım."	1	2	3	4	5	6	7
23. "Hastanın katılımı olmaksızın karar vermek zorunda kaldığım hoş olmayan durumlarla sıklıkla karşılaşırım."	1	2	3	4	5	6	7
24. "Hasta isteği dışında hastaneye yatırılmış ise hastanın arzusuna karşın hareket etmeye hazırlıklı olmam gerekir."	1	2	3	4	5	6	7
25. "Oral tedavi hasta tarafından reddedildiğinde, hastayı enjeksiyon yapmakla tehdit etmenin bazen geçerli nedenleri vardır."	1	2	3	4	5	6	7
26. "Hastanın karşı çıkması hâlinde iyi bir bakım/tedavi vermenin zor olduğunu düşünüyorum."	1	2	3	4	5	6	7
27. "Neyin doğru olduğuna karar vermenin güç olduğu durumlarda ne yapılması gerektiğini meslektaşlarıma danışırım."	1	2	3	4	5	6	7
28. "Hasta için zor bir karar almak zorunda kaldığımda çoğu zaman kendi duygularıma güvenirim."	1	2	3	4	5	6	7
29. "Bir hekim olarak servisimde bulunan hastaların ne tarz bir özel bakım/tedavi alma hakkına sahip olduğunu her zaman bilmem gerekir."	1	2	3	4	5	6	7
30. "Hastanın hastalığını anlamasında/kavramasında yardım etmede başarılı olmasam bile mesleki rolümü anlamlı bulurum."	1	2	3	4	5	6	7

to 3 physicians who were not included in the study sample, and the online form was finalized. The online form was designed so that participants could complete it only once. Participants were reached by using the chain method, one of the purposeful sampling methods.

ANALYSIS OF DATA

Evaluation of the data was conducted using statistical software. Descriptive statistics of the variables are presented as number of units (n), percentage (%), mean (X), and standard deviation (SD). The normality of numerical data distribution was evaluated using the Shapiro-Wilk test. This test result was found to be $p<0.05$ for the variables. Homogeneity of the variances was assessed using the Levene test. After this test, it was concluded that non-parametric tests should be used. Mann-Whitney U test, Wilcoxon test, and chi-square analysis were used for non-normally distributed variables. $p<0.05$ was considered statistically significant.

RESULTS

According to Table 1, 96.6% of the physicians participating in the study were male. The average age of all participants was 37.27±7.92 years. Further, 50.5% of the physicians were specialist orthopedic physicians, 30.8% were employed for 1-5 years, and 85.5% were willingly employed.

Of the physicians in the discipline of orthopedics and traumatology, 68.4% stated that they received ethics training during their educational life and 70.9% reported that they received no ethics training during their professional life. Further, 51.3% stated that there was an ethics committee in the institution where they were employed. Only 52.1% of physicians in the discipline of orthopedics and traumatology stated that they were knowledgeable about ethics. Of the participants, 62.4% stated that they experienced ethical dilemmas and 36.8% stated that they had resolved the ethical dilemma they encountered.

The mean total score of physicians on the ESS was 89.70±17.00, and mean scores for the subdimensions were 19.70±5.65 for "autonomy," 14.57±3.76 for "benefit," 12.62±4.20 for "holistic ap-

TABLE 1: Distribution of data regarding sociodemographic characteristics of physicians and some ethical variables (n=234).

Ave. age±SS (minimum-maximum): 37.27±7.92 (24-57)	**n (234)**	**% (100)**
Gender		
Male	226	96.6
Female	8	3.4
Status		
Resident	68	29.1
Specialist orthopedic pyhsician	118	50.5
Faculty member	48	20.4
Years of professional experience (resident training time included)		
1-5 years	72	30.8
5-10 years	62	26.5
10-15 years	48	20.5
Over 15 years	52	22.2
Current I-institutions		
University hospitals	80	34.2
Public hospital	66	28.2
Training and research hospital	52	22.2
Private hospital	36	15.4
Status of performing their profession		
Willingly	200	85.5
Unwilling	6	2.6
Unstable	28	12.0
State of receiving ethics education in education life		
Yes	160	68.4
No	64	27.4
Can't remember	10	4.3
State of receiving ethics education in professional life		
Yes	60	25.6
No	166	70.9
Can't remember	8	3.4
Status of ethics committee in the ınstitution		
Yes	120	51.3
No	50	21.4
Don't know	64	27.4
State of being knowledgeable of ethics		
Yes	122	52.1
No	64	27.4
Unstable	48	20.5
State of solving ethical dilemma in professional life		
I figured it out myself	86	36.8
I solved it with help	28	12.0
I could not solve	32	13.6
I had no ethical dilemmas	88	37.6
Total	n (234)	% (100)

Resident term corresponds to physicians who continue their specialty education after medical education. Specialist Orthopedic Pyhsician term corresponds to physicians who have completed their specialty education after medical education. Faculty member term corresponds to physicians owning academic title such as assistant professor, associate professor and Professor.

proach," 13.60±2.80 for "conflict," 12.06±3.87 for "practice," and 8.11±3.51 for "orientation."

The relationship between the total and sub-dimension scores of ESS is given in Table 2. High positive correlations exist between the sub-dimensions of ESS ($p<0.05$). The ethical sensitivity of physicians in the discipline of orthopedics and traumatology was high with an increase in their autonomy, benefit, holistic approach, practice, and orientation scores.

Distributions of ESS scores for physicians in the discipline of orthopedics and traumatology according to certain variables are shown in Table 3. In the study, a significant difference was observed between status and the conflict and orientation sub-dimensions of ESS ($p<0.05$). In the advanced (post-hoc) analysis, this difference was determined to be caused by resident and faculty member groups. Ethical sensitivity (conflict and orientation) of the residents and faculty members appeared to be higher than specialist orthopedic physicians.

A significant difference was observed between the employment period of physicians in the discipline of orthopedics and traumatology and the orientation sub-dimension of ESS ($p<0.05$). In the present study, physicians in the discipline of orthopedics and traumatology with an employment period of 1-5 years exhibited a low level of ethical orientation (Table 3).

In the present study, a significant difference was noted between the status of performing their profession and the total scores on the ESS ($p<0.05$). Further, a significant difference was observed between performing the profession and the holistic approach and conflict sub-dimensions of ESS ($p<0.05$).

A significant difference existed between the status of having received ethics training during education and the holistic approach sub-dimension of ESS ($p<0.05$). Further, physicians in the discipline of orthopedics and traumatology who stated that they received ethics training in their educational life had higher ethical sensitivity (holistic approach sub-dimension).

Further, a significant difference was found between the status of having resolved an ethical dilemma for physicians in the discipline of orthopedics and traumatology and the EES total scores ($p<0.05$). A significant difference was noted between the status of having resolved any ethical dilemma in their career and the autonomy, holistic approach, and practice sub-dimensions of ESS ($p<0.05$).

In addition, a significant relationship was observed between status of having received ethics training in their education for physicians in the discipline of orthopedics and traumatology and their status of having resolved an ethical dilemma ($p=0.002$, χ^2:17.993).

TABLE 2: Relationship between the total and sub-dimension scores of the ethical sensitivity scale.

Scale sub-dimension		Autonomy	Benefit	Holistic approach	Conflict	Practice	Orientation	Scale total
Autonomy	r							
	p value							
Benefit	r	0.293						
	p value	0.002						
Holistic approach	r	0.396	0.321					
	p value	0.000	0.001					
Conflict	r	-0.125	-0.030	0.027				
	p	0.188	0.757	0.774				
Practice	r	0.474	0.255	0.381	0.023			
	p value	0.000	0.007	0.000	0.806			
Orientation	r	0.431	0.131	0.497	-0.037	0.314		
	p value	0.000	0.170	0.000	0.696	0.001		
Scale total	r	0.705	0.558	0.700	0.175	0.694	0.562	
	p value	0.000	0.000	0.000	0.640	0.000	0.000	

r=Spearman's correlation coefficient; the correlation coefficient was interpreted as: 0.00-0.20 very weak relationship; 0.20-0.40 weak relationship; 0.40-0.60 medium level relationship; 0.60-0.80 high level relationship; 0.80-1.00 very high level relationship.

TABLE 3: Comparison of physicians' ethical sensitivity scale sub-dimension scores and total scores according to certain variables.

Variables	ESS sub-dimension 1: autonomy (25p%-75p%)	ESS sub-dimension 2: benefit (25p%-5p%)	ESS sub-dimension 3: holistic approach (25p%-75p%)	ESS sub-dimension 4: conflict (25p%-75p%)	ESS sub-dimension 5: practice (25p%-75p%)	ESS sub-dimension 6: orientation (25p%-75p%)	Scale total (25p% -75p%)
Gender							
Male	15.00 (12.00-19.00)	14.50 (12.00-17.00)	12.00 (10.00-15.00)	14.00 (12.00-15.00)	12.00 (9.00-14.75)	7.00 (5.25-10.00)	87.50 (78.25-87.00)
Female	15.00 (11.00-16.75)	15.50 (07.25-17.00)	10.00 (08.25-17.75)	15.00 (13.25-16.75)	10.50 (7.75-12.50)	8.50 (6.25-10.00)	87.50 (78.00-93.25)
p value	0.553	0.862	0.527	0.265	0.259	0.757	0.653
Status							
Resident1	15.00 (12.25-19.00)	14.00 (13.00-17.75)	13.00 (10.25-16.00)	13.00 (11.00-14.00)	12.00 (10.00-14.75)	6.00 (5.00-8.00)	88.50 (82.00-96.75)
Specialist orthopedic pyhsician2	15.00 (11.25-18.75)	15.00 (12.00-17.00)	11.00 (9.00-15.00)	14.00 (13.00-15.00)	13.00 (9.00-14.75)	7.00 (5.00-10.00)	88.00 (76.00-99.25)
Faculty member3	16.00 (13.00-18.00)	14.00 (11.00-17.00)	13.00 (10.00-16.00)	13.00 (11.00-14.00)	11.00 (7.00-1.00)	6.00 (5.00-8.00)	85.00 (78.00-95.00)
p value	0.508	0.528	0.599	0.010	0.384	0.030	0.543
Post-hoc[1-2-3] [ ]				[1-3]		[1-3]	
Years of professional experience (resident training time included)							
1-5 years	14.00 (12.00-19.00)	14.50 (12.75-17.00)	13.00 (10.00-15.25)	13.00 (11.50-15.25)	12.00 (9.00-14.00)	9.00 (7.75-11.00)	89.00 (81.00-97.00)
5-10 years	17.00 (15.00-19.00)	14.00 (11.00-17.00)	12.00 (10.00-16.00)	14.00 (13.00-15.00)	14.00 (9.00-16.00)	7.00 (6.00-10.00)	89.00 (79.00-102.00)
10-15 years	13.00 (10.00-18.00)	16.00 (12.00-19.00)	11.00 (8.00-16.00)	14.00 (12.00-16.00)	11.00 (8.00-14.00)	6.00 (5.00-7.00)	83.00 (74.00-93.00)
Over 15 years	15.50 (13.00-18.00)	14.50 (11.00-17.00)	12.00 (10.00-14.50)	15.00 (13.00-16.00)	12.00 (9.25-14.00)	7.00 (5.00-10.00)	86.50 (76.25-101.75)
p value	0.225	0.544	0.517	0.193	0.499	0.008	0.508
Current institutions							
University hospitals	16.00 (12.00-19.00)	14.00 (12.00-17.25)	12.50 (9.75-16.00)	14.00 (12.00-16.00)	12.00 (10.00-14.25)	9.00 (6.00-11.00)	87.00 (80.50-97.00)
Public hospital	15.00 (11.00-19.00)	14.00 (12.00-16.00)	12.00 (10.00-15.00)	14.00 (13.00-16.00)	13.00 (9.00-14.00)	7.00 (5.00-10.00)	87.00 (76.00-97.00)
Training and research hospital	15.00 (13.50-19.00)	16.00 (11.50-18.00)	13.00 (10.50-16.00)	13.00 (12.00-15.00)	10.00 (7.50-15.00)	8.0 (6.00-9.50)	92.00 (79.00-99.00)
Private hospital	15.00 (10.75-12.75)	15.50 (12.00-18.50)	10.00 (8.00-13.00)	14.00 (12.75-15.25)	12.50 (9.75-14.25)	6.50 (5.00-8.25)	83.50 (78.75-95.50)
p value	0.429	0.520	0.209	0.522	0.614	0.065	0.756
Status of performing their profession							
Willingly	15.00 (12.00-18.00)	14.00 (12.00-17.00)	12.00 (9.25-15.00)	14.00 (12.00-15.00)	12.00 (9.00-14.00)	7.00 (6.00-10.00)	87.00 (78.00-96.00)
Unwilling	19.00 (13.00-21.00)	12.00 (10.00-14.00)	16.00 (15.00-17.00)	16.00 (13.50-16.50)	16.00 (13.00-16.00)	7.00 (5.00-9.00)	94.00 (76.00-101.00)
Unstable	18.00 (14.00-21.00)	16.00 (12.50-18.50)	16.00 (12.50-17.00)	16.00 (13.50-16.50)	13.00 (9.00-16.00)	9.00 (5.50-11.00)	103.00 (87.00-108.50)
p value	0.071	0.747	0.015	0.032	0.118	0.501	0.022

TABLE 3: Comparison of physicians' ethical sensitivity scale sub-dimension scores and total scores according to certain variables *(devamı)*.

Variables	ESS sub-dimension 1: autonomy (25p%-75p%)	ESS sub-dimension 2: benefit (25p%-5p%)	ESS sub-dimension 3: holistic approach (25p%-75p%)	ESS sub-dimension 4: conflict (25p%-75p%)	ESS sub-dimension 5: practice (25p%-75p%)	ESS sub-dimension 6: orientation (25p%-75p%)	Scale total (25p% -75p%)
State of receiving ethics education in education life							
Yes	16.00 (12.00-19.00)	14.00 (12.00-17.00)	12.00 (9.00-15.00)	14.00 (13.00-15.00)	12.00 (8.00-14.00)	7.00 (6.00-10.00)	87.00 (78.00-95.00)
No	15.00 (11.50-18.00)	16.00 (12.00-18.00)	13.00 (11.00-16.50)	14.00 (12.00-16.00)	12.00 (9.00-14.50)	7.00 (5.00-9.50)	90.00 (79.50-103.50)
Can't remember	18.00 (13.00-24.50)	13.50 (12.25-17.75)	15.50 (11.50-24.00)	13.00 (10.50-15.50)	13.50 (11.00-16.75)	10.00 (6.00-19.25)	96.50 (83.25-130.00)
p value	0.256	0.426	0.019	0.860	0.329	0.220	0.116
State of receiving ethics education in professional life							
Yes	16.00 (11.75-18.25)	15.00 (13.00-17.00)	11.00 (9.00-14.25)	14.00 (13.00-15.00)	11.50 (8.00-14.00)	7.00 (5.75-9.25)	86.00 (77.5-94.25)
No	15.00 (12.00-19.00)	14,00 (11.00-17.00)	12.00 (10.00-16.00)	14.00 (12.00-16.00)	12.00 (9.00-15.00)	7.00 (5.00-11.00)	87.00 (78.00-97.00)
Can't remember	14.00 (13.00-15.00)	15.00 (14.00-17.00)	16.00 (10.00-18.00)	14.00 (13.00-16.00)	13.00 (11.00-15.00)	10.00 (8.00-11.00)	94.00 (92.00-98.00)
p value	0.743	0.774	0.250	0.925	0.517	0.148	0.255
Status of ethics committee in the institution							
Yes	15.50 (12.75-18.25)	14.00 (11.75-17.00)	12.00 (10.00-15.00)	14.00 (11.75-15.00)	12.00 (10.00-15.25)	7.00 (5.00-10.00)	87.00 (78.75-96.00)
No	15.00 (11.50-22.50)	16.00 (12.50-18.00)	12.00 (10.00-17.50)	14.00 (13.00-15.00)	13.00 (8.00-14.50)	7.00 (5.00-10.50)	87.00 (80.00-106.00)
Don't know	15.00 (12.00-18.00)	16.00 (12.50-17.00)	12.00 (9.00-16.00)	14.00 (12.50-16.00)	11.00 (8.50-14.00)	9.00 (6.00-10.00)	91.00 (76.00-97.00)
p value	0.703	0.325	0.749	0.467	0.862	0.338	0.673
State of being knowledgeable of ethics							
Yes	15.00 (12.00-19.00)	15.00 (12.00-17.00)	12.00 (10.00-15.00)	14.00 (13.00-16.00)	13.00 (9.00-14.00)	7.00 (5.00-10.00)	88.00 (78.00-97.00)
No	16.00 (13.50-19.00)	14.00 (11.00-18.00)	13.00 (11.00-17.00)	14.00 (12.00-16.00)	12.00 (9.00-15.00)	9.00 (7.00-11.00)	87.00 (81.00-101.00)
Unstable	15.00 (12.00-17.50)	14.50 (11.25-17.00)	13.00 (8.50-16.00)	13,00 (11,25-15,00)	11.50 (8.25-14.00)	7.50 (5.25-9.75)	87.00 (77.75-94.75)
p value	0.276	0.775	0.061	0,205	0.879	0.023	0.454
State of solving ethical dilemma in professional life							
I figured it out myself	15.00 (11.00-17.00)	14,00 (11,00-17,00)	11,00 (9,00-13,00)	14,00 (12,00-15,00)	10,00 (7,00-14,00)	7,00 (6,00-10,00)	84,00 (76,00-94,00)
I solved it with help	16.00 (12.50-18.25)	14,50 (11,00-16,25)	10,00 (9,00-12,00)	14,00 (13,00-15,25)	13,00 (9,75-15,25)	7,00 (5,00-10,00)	87,00 (81,25-92,00)
I could not solve	17.00 (13.25-25.25)	15.00 (12.25-18.75)	15.00 (13.25-21.00)	13.00 (11.25-14.00)	14.00 (11.50-17.00)	9.50 (6.50-17.25)	96.00 (81.75-129.75)
I had no ethical dilemmas	16.00 (13.00-19.00)	16.00 (12.00-18.00)	13.00 (10.00-17.00)	14.00 (12.00-16.00)	12.00 (10.00-16.00)	7.00 (5.00-10.00)	91.00 (81.00-97.00)
p value	0.050	0.235	0.001	0.600	0.003	0.084	0.017

*Post-hoc[1 2 3] []: Advanced analysis.

A significant difference was noted between being knowledgeable of ethics and the orientation sub-dimension ($p<0.05$). Physicians in the discipline of orthopedics and traumatology who had knowledge of ethics had higher ethical sensitivity (orientation sub-dimension).

DISCUSSION

Ethical principles should be followed to provide better healthcare services. Physicians have substantial responsibilities in this regard. The number of studies evaluating the ethical sensitivity of physicians is limited in the literature. Accordingly, the ethical sensitivities of physicians in the discipline of orthopedics and traumatology were assessed in the present study.

In line with the research question "what is the ethical sensitivity level of physicians in the discipline of orthopedics and traumatology?" in the present study, the total EES score for physicians in the discipline of orthopedics and traumatology was 89.70±17.00. The total mean score obtained in the present study was similar compared with the mean scores in recent studies that included physicians.[14,15] However, no studies evaluating the ethical sensitivity of physicians according to their fields of expertise could be found. Therefore, in order to emphasize the ethical sensitivity of physicians in the discipline of orthopedics and traumatology, it is recommended to conduct studies evaluating the ethical sensitivity of physicians in different specialties because the discipline of orthopedics and traumatology is a branch with a wide range of applications employing both surgical and conservative management methods. Orthopedic surgery is a field that requires long-term rehabilitation, special tools and implants, as well as the active participation of patients to maximize musculoskeletal functions after surgery. These unique aspects of orthopedic surgery emphasize patient interaction and the need for a more careful and comprehensive approach to ethics than other fields.[16] In this context, it is thought that ethical studies specific to the discipline of orthopedics and traumatology department will provide different results compared to other fields.

In line with the research question "is there a difference between physicians' ethical sensitivity and their sociodemographic characteristics?" in the study, a significant difference was observed between status and the conflict and orientation sub-dimensions of ESS. In the advanced analysis, this difference was caused by the difference between resident and faculty member groups. Ethical sensitivity (conflict and orientation) of residents and faculty members appeared to be higher than specialist orthopedic physicians. Consistent with this finding, residents and faculty members experience less difficulty when approaching the patient or in decision-making with regard to treatment. In addition, these members were more convinced about the importance of patient participation in treatment and team relationships. It is considered that this situation may be associated with the academic knowledge level, professional experience of the faculty members, and the large team structure. Further, faculty members are role models for residents and provide consultancy in their careers; this may be a significant factor for residents.

Reportedly, professional experience affects ethical sensitivity.[17,18] In the present study, a significant difference was found between the employment period of physicians in the discipline of orthopedics and traumatology and the orientation sub-dimension of ESS. Accordingly, physicians in the discipline of orthopedics and traumatology with an employment period of 1-5 years exhibited a low level of ethical orientation (Table 3). A study reported that there was a relationship between the employment period of physicians and the sub-dimensions of ESS and that ethical sensitivity increased with an increase in the duration of experience.[19] It is considered that this situation may be associated with having evaluated a higher number of patients during longer employment of physicians in the discipline of orthopedics and traumatology who had over 5 years of experience. Therefore, in this study, it was accepted that over 5 years of experience in **the discipline of orthopedics and traumatology** increased ethical sensitivity.

In the present study, a significant difference was noted between the status of performing their profession and the total scores of ESS. Further, a significant difference was observed between performing the profession and the holistic approach and conflict sub-dimensions of ESS. The ethical sensitivity of physicians in the discipline of orthopedics

and traumatology who were willingly employed was observed to be higher than physicians in the discipline of orthopedics and traumatology who were unwilling employed. Of physicians in the discipline of orthopedics and traumatology, 85.5% were willingly employed. Physicians in the discipline of orthopedics and traumatology who were willingly employed had higher ethical sensitivity and were more successful in terms of holistic approach and conflict scores. A study reported that 91.5% of physicians who were employed in surgical, psychiatric, oncology, and intensive care departments performed their profession willingly and were more successful in the holistic approach.[11] However, another study reported that 84.3% of physicians who were employed in internal medicine, emergency services, and other departments willingly performed the medical profession, and no significant difference was noted between the status of practicing the medical profession and scores on the ESS.[20] It is believed that this difference in the literature may be due to the difference between the specialties of the physicians included in the studies.

Ethics training is an important requirement for ethical sensitivity, which can only be created via training.[21] A study stated that there was an increase in ethical sensitivity of physicians who attended medical ethics courses.[22] In the present study, 68.4% of physicians in the discipline of orthopedics and traumatology stated that they received training about ethics in their educational life and 52.1% were knowledgeable about ethics. In the National Core Education Program, which was established with the aim of ensuring a certain standard consistent with international medical education principles and approaches, the objectives of medical education such as observing ethical and professional values, exhibiting behaviors appropriate to these values in all health-related processes and handling unethical situations were clearly stated.[23] It is mandatory for all medical students to be trained in ethics (deontology) during their medical education. In a study that examined the ethical education curriculum of medical faculties, there were many ethical courses under different names and they varied in number, the number of course hours were not similar, universities taught courses by making a program in line with their own initiatives, medical ethics education varied widely, there was no general consensus about the ethics education curriculum, and finally, although there were similarities, differences were reported to be more common in medical ethics education.[24] The World Federation for Medical Education emphasizes the need for lifelong training about medicine and ethical principles.[25] In a study, it was stated that ethical education should be reflected in medical education in general.[24] It is considered that physicians in the discipline of orthopedics and traumatology could not recall whether they received ethical education because of the lack of standards in the curriculum for ethical education and the fact that ethical education was not reflected in medical education in general. Accordingly, it is recommended to provide standard and continuous ethics training to ensure training is effective throughout all medical education.

A significant difference existed between the status of having received ethics training during educational life and the holistic approach sub-dimension of ESS. Further, physicians in the discipline of orthopedics and traumatology who stated they received ethics training in their educational life showed higher ethical sensitivity (holistic approach sub-dimension). A study found that the ethical sensitivity of physicians who received ethics training was higher, and they showed better orientation.[10] Several studies in the literature reported that receiving ethics training has a significant effect on ethical sensitivity.[26-28] In this context, the results of the study are consistent with the literature.

In line with the research question "is there a difference between the ethical sensitivity level of physicians and certain ethical approaches?" in the study, a significant relationship was observed between the status of having received ethics training in their educational life and the status of resolving ethical dilemma for physicians in the discipline of orthopedics and traumatology. Accordingly, it can be inferred that as ethics training received by physicians in the discipline of orthopedics and traumatology increases, their status of resolving ethical dilemma increases. This finding re-emphasizes the importance of ethics training. The importance of medical ethics training before graduation was emphasized worldwide.[29] Ethics training should be provided to enable residents to cope with common

ethical conflicts.[30] Reportedly, monthly ethics meetings, which are continuous in professional life, are an important tool for clinical ethics training.[31] In the present study, 70.9% of physicians in the discipline of orthopedics and traumatology reported that they did not receive ethics training in their professional life. This finding may be related to limitations of the sample group as well as to the fact that ethical education does not continue throughout the entire specialty education and ethical training is not adequately effective.

In the present study, 62.4% of physicians in the discipline of orthopedics and traumatology stated that they experienced ethical dilemmas and 36.8% stated that they had resolved the ethical dilemma they encountered. These results mean that physicians in the discipline of orthopedics and traumatology who experienced ethical dilemmas solved the ethical dilemma in line with their ethical knowledge. In studies conducted in parallel with the present study, it was reported that healthcare professionals experience ethical dilemmas and that they independently resolve these ethical dilemmas.[18,32] In the present study, a significant difference was observed between the status of resolving an ethical dilemma and the autonomy, holistic approach, and practice sub-dimensions of ESS. In this context, physicians in the discipline of orthopedics and traumatology who have solved an ethical dilemma had higher ethical sensitivity with respect to the patient's preferences, actions to protect the patient's integrity and ethical aspects in practice compared to physicians in the discipline of orthopedics and traumatology who could not solve the ethical dilemma they encountered.

One of the factors affecting the specialty preferences of physicians is gender.[33] Generally, male physicians prefer surgical specialties, and female physicians prefer internal and basic medical sciences specialties, which are appropriate for gender roles.[34] In a study, some of the surgical branches (urology, orthopedics and traumatology etc.) consist of almost only male physicians.[35]

LIMITATIONS OF THE STUDY

Because data were collected online, it is considered that physicians in the discipline of orthopedics and traumatology with ethical sensitivity may have participated in the study. Due to the limitation of the sample, it may not reflect the generality of the physicians belonging to the specialty. The young study population is a limitation as it does not represent the entire population and ethical sensitivity scores may vary with age.

CONCLUSION

The ethical sensitivity of physicians in the discipline of orthopedics and traumatology was high with an increase in their autonomy, benefit, holistic approach, practice, and orientation scores (ESS: 89.70±17.00). Further, ethical sensitivity was higher for physicians in the discipline of orthopedics and traumatology who had an academic title and over 5 years of employment in the discipline of orthopedics and traumatology, who were willingly employed, who received ethics training, and who independently resolved an ethical dilemma. Moreover, most physicians in the discipline of orthopedics and traumatology stated that they did not receive ethics training in their professional life, more than half of them were knowledgeable about ethics and experienced an ethical dilemma, and less than half had independently resolved their ethical dilemma.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Ramazan İlter Öztürk;* ***Design:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk;* ***Control/Supervision:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk;* ***Data Collection and/or Processing:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk;* ***Analysis and/or Interpretation:*** *Ramazan İlter Öztürk, Gülhan Küçük Öztürk;* ***Literature Review:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk;* ***Writing the Article:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk;* ***Critical Review:*** *Ramazan İlter Öztürk, Yiğit Umur Cırdı, Gülhan Küçük Öztürk.*

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