Original Research / Orijinal Araştırma

Examining Defensive Medicine Behaviors in Physicians in Terms of Socio-Demographic Variables: A Cross-Sectional Study

Hekimlerde Görülen Defansif Tıp Davranışlarının Sosyo-Demografik Değişkenler Açısından İncelenmesi: Kesitsel Bir Araştırma

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Abstract

Introduction: The aim of this cross-sectional study is to evaluate physicians' attitudes regarding defensive medicine practices and to investigate defensive medicine practices in terms of socio-demographic variables.

Method: Research population was all of the 219 physicians working in public institutions in Aksaray city center. Although the entire population was aimed to be reached, 140 physicians agreed to participate. Data were collected from general practitioners, family physicians, specialist physicians and academic physicians by face-to-face interviews. Data collection tools used in the study include a personal information form containing demographic and sociocultural characteristics of physicians and the Defensive Medicine Practices Attitude Scale. The collected data was analyzed using the SPSS 25.0 package program.

Findings: More than half (55%) of the participants stated that they had heard of the concept of defensive medicine, but 69.3% stated that they did not know enough about the content of the concept. Additionally, 80.7% of the participants believe that malpractice lawsuits affect medical practice and 90.7% think that there is an increase in malpractice lawsuits. The averages of the statements regarding the positive and negative defensive medicine sub-dimensions are 3.38±0.60 and 3.19±0.99, respectively, which shows that physicians tend to have a defensive attitude.

Conclusion: It has been observed that physicians frequently resort to defensive medicine practices in order to protect themselves from malpractice lawsuits. It has been determined that these behaviors vary depending on factors such as gender, job title, unit of study, reason for choosing medicine, age, professional experience, and years of working in the institution. Physicians turning to defensive medicine practices does not benefit patients, and it is recommended that they be made aware of this issue. The workload of physicians and the number of patients per physician should be reduced.

Keywords: Malpractice, Defensive Medicine, Physicians.

Özet

Giriş: Kesitsel bir araştırma olarak tasarlanan bu çalışmanın amacı, hekimlerin defansif tıp uygulamalarına yönelik tutumlarını değerlendirmek ve defansif tıp uygulamalarını sosyo-demografik değişkenler açısından incelemektir.

Yöntem: Aksaray il merkezindeki kamu kurumlarında çalışan toplam 219 hekim araştırmanın evrenini oluşturmaktadır. Araştırmada evrenin tamamına ulaşılması hedeflenmiş ve araştırmaya katılmayı kabul eden 140 hekim araştırma kapsamına alınmıştır. Veriler, pratisyen hekimler, aile hekimleri, uzman hekimler ve akademisyen hekimlerden yüz yüze görüşme tekniğiyle toplanmıştır. Araştırmada kullanılan veri toplama araçları, hekimlerin demografik ve sosyokültürel özelliklerini içeren kişisel bilgi formu ve Defansif Tıp Uygulamaları Tutum Ölçeği'ni içermektedir. Toplanan veriler, SPSS 25.0 paket programı kullanılarak analiz edilmiştir.

Bulgular: Katılımcıların %55'i defansif tıp kavramını duyduğunu, ancak %69.3'ü kavramın içeriğini yeterince bilmediğini belirtmiştir. Ayrıca, katılımcıların %80.7'si malpraktis davalarının hekimlik pratiğini etkilediğine inanmakta ve %90.7'si malpraktis davalarında bir artış olduğunu düşünmektedir. Pozitif ve negatif defansif tıp alt boyutlarına ait ifadelerin ortalamaları sırasıyla 3.38±0.60 ve 3.19±0.99'dur, bu da hekimlerin defansif tutum eğilimine sahip olduklarını göstermektedir.

Sonuç: Hekimlerin malpraktis davalarından korunmak amacıyla sıkça defansif tıp uygulamalarına başvurduğu görülmüştür. Bu davranışların cinsiyet, ünvan, çalışılan birim, hekimliği seçme nedeni, yaş, mesleki tecrübe ve kurumda çalışma yılı gibi faktörlere bağlı olarak değişiklik gösterdiği belirlenmiştir. Hekimlerin defansif tıp uygulamalarına yönelmeleri hastalara fayda sağlamamakta bu konuda bilinçlendirilmeleri önerilmektedir. Hekimlerin iş yükü ve hekim başına düşen hasta sayısı azaltılmalıdır.

Anahtar Kelimeler: Malpraktis, Defansif Tıp, Hekimler.

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Introductıon

Medical malpractice, which has been frequently accentuated in the media in recent years, has become an important source of concern for both patients and healthcare professionals. Erroneous medical practices can lead to serious consequences or even death. Defensive medicine has emerged as a response, where physicians may act defensively to avoid legal problems and malpractice. As a result, physicians may take extra precautions during medical procedures and treatments.[1]

Defensive medical practices such as unnecessary examinations and imaging adversely affect patients as well as increase health expenditures so that negatively affect the health economy of the country. Therefore, these practices cause important loss both in health economy and health outcomes, this loss should be prevented. In order to prevent defensive medical practices, it should be measured, and as a result, the attitudes of physicians should be determined. According to US budget experts, unnecessary testing by physicians to avoid being sued adds an annual burden of $5.4 billion to the US budget.[2] According to the American Health Association, the burden of defensive medical practices on healthcare is $84 billion. According to a study conducted country level at the US, it has been stated that the burden of defensive medicine practices on the country's budget is 37 billion dollars and constitutes 14% of general expenses.[3] In a study conducted to determine the negative impact of defensive medicine behaviors on the health economy in Turkey, it was stated that it cannot be neglected. It has been stated that the impact of laboratory and imaging requests for defensive reasons in outpatient clinics on the direct cost is at least 1.63%.[4]

The concept of malpractice, which is a Latin word, is derived from the words "trouble-bad" and "praxis-practice". Therefore, its Turkish equivalent means bad practice.[5] Although it means bad practice in any field, the term malpractice usually expresses erroneous practice in the field of medicine. In English publications, the concept of medical malpractice is generally used in the field of medicine.[6] The World Medical Association defined medical malpractice in its 44th general assembly in 1992 as the harm that occurs as a result of the physician not doing the standard current practice during the treatment, lack of skill or not giving the necessary treatment to the patient.

In other words, defensive medicine practices include medical practices that physicians do to protect themselves from malpractice (medical malpractice) cases. The primary goal in defensive medical practices is not to cure the patient but to prevent litigation.[7] Along with the problems related to the health system, the number of malpractice cases and the amount of compensation in these cases naturally increased. The increase in the number of lawsuits and high compensation amounts creates an insecure atmosphere that causes physicians feel uneasy and to request unnecessary diagnostic tests to protect themselves and to avoid risky patients.[8]

Defensive medicine involves two major dimensions: positive and negative defensive medicine. Positive defensive medicine means requesting more intervention and detailed examination then necessary, whereas negative defensive medicine means avoiding risky treatments and interventions.[9] In positive defensive medicine, which is also called as the assurance-based approach, the physician performs additional medical procedures that are not necessary or of medical value, in order to prevent the possibility of the patient suing with a possible medical malpractice claim or to defend him/herself against the possibility of filing a lawsuit, so that there is nothing left undone as much as possible.[9] As an example of positive defensive medicine, prescribing drugs that are not medically necessary, making notes of unnecessary consultation calls, hospitalizing the patient who can be followed-up outpatient, applying for additional examination and imaging techniques when not medically necessary, keeping very detailed records frequently during the treatment, and taking care of the patient's health status. Behaviors such as over-informing are considered within the scope of positive defensive medicine.[10]

The concept of negative defensive medicine, also called avoidance behavior, is the effort of physicians to eliminate legal sources of risk. In these practices, physicians avoid intervening in high-risk cases and do not want to perform medical and surgical interventions although they are necessary.[8] Negative defensive medicine includes avoiding medical practices with a high risk of complications, avoiding patients with complex problems and high probability of litigation, unnecessary referral of the patient to another physician or health institution and intimidate patients with possible side effects. Behaviors such as exaggerating the risk of interventions to prevent possible negative reactions of the patient and their relatives beforehand are evaluated within the scope of negative defensive medicine.[11]

Defensive medical practices started gain currency after the 2000's, and it was stated that this concept would be discussed and increased more and more by the medical and health law circles in Turkey with the inclusion of the Turkish Penal Code on 1 June 2005.[12] Defensive medicine has no legal definition and it is not possible to prove that any practice is within the scope of defensive medicine. Physicians knowingly and willingly practice defensive medicine due to prevent malpractice cases. Since the subject of defensive medicine has legal consequences, it should also be examined from a legal point of view.[13]

While medical malpractice occurs because of unintentional physician behavior, defensive medicine is a conscious practice.[11] Regardless of how defensive medicine is practiced, patients, the state and insurance institutions, which are the financiers of the health system, are negatively affected economically. There is a general opinion that

defensive medicine practices increase health care costs. The expenses of the tests requested by physicians for defensive purposes have started to increase significantly. The share of defensive medicine practices is believed to be increase gradually in health expenditures.[14] In this cross-sectional study, we aim to compare the defensive medicine behaviors seen in physicians in terms of various variables.

Violence, physical or verbal attacks against physicians may increase physicians' stress levels, cause job dissatisfaction, and generally affect their motivation to provide healthcare. This situation may lead physicians to frequently resort to defensive medicine practices, with possible effects such as increased stress, communication problems, excessive testing and treatment practices, job dissatisfaction and burnout. As a matter of fact, the most important result obtained from a research conducted by Yeşiltaş and Erdem is that violence causes defensive medicine and defensive medicine causes violence.[15] More research is needed to better understand the effects of violence against physicians.

Materıal And Method

Study Type

This is a cross-sectional analytical research.

Population and Sampling

The population of this study consisted of 219 physicians working in training and research hospitals and community health centers in Aksaray city center. It was aimed to reach the entire universe for which the sample was not selected. However, 140 physicians participated in the research. Approximately 65% of the universe has been reached.

Data Collection Tools

The form consists of two parts. The first part contains personal information including the physician's demographic characteristics and working experience. The second part contains the Defensive Medicine Practices Attitude Scale.

Defensive Medicine Practices Attitude Scale: The "Defensive Medicine Practices Attitude Scale", which was adapted into Turkish and tested for validity and reliability by Başer et al. in 2014, is a five-point Likert scale. It consists of 2 sub-dimensions: Questions 1, 2, 3, 4, 5 measure the level of knowledge. Questions 6, 7, 8, 9, 10, 11, 12, 13 and 14 constitute the positive defensive medicine dimension. Questions 15, 16, 17, 18 and 19 constitute the negative defensive medicine dimension. The scale evaluation consists of answers such as 5- I strongly agree, 4- I agree, 3- I somewhat agree, 2- I slightly agree, 1- I strongly disagree, and the average of the scores obtained from the items in the scale is calculated for each participant. As the average score of each item approaches 5, the level of defensive medicine attitude increases.[7] In this study, the Cronbach's Alpha Coefficient (α) of the scale was found to be highly reliable at 0.83.

Variables of the Research

The independent variables of the research are socio-demographic variables such as marital status, gender, title, age, reason for choosing medicine, and the unit of study. The dependent variable of the research is the score obtained from the defensive medicine practices attitude scale.

Ethical Committee Approval

Ethics committee approval was obtained from Kayseri University Ethics Committee on 03.04.2019 and assigned number 11. In addition, informed consent forms were obtained from physicians who voluntarily agreed to participate in the study.

Data Collection

While collecting research data, an effort was made to reach the entire population and physicians who voluntarily agreed to participate in the research were included in the study. The data was collected between 03 and 30 April 2019, by face-to-face interviews from a total of 140 physicians, including 18 general practitioners, 68 specialist physicians, 23 academic physicians and 31 family physicians.

Advantages and Limitations of the Research

This research contributes to the literature by offering an objective understanding of physicians' attitudes towards the defensive medical practices and why they resort to them. The findings and results of this research are limited to the findings obtained from physicians working in Aksaray at the time the research was conducted.

Data Analysis

SPSS 25.0 package program was used to analyze the collected data. Descriptive statistics were used to show main characteristics of the study population, student t test and ANOVA test were used to compare differences between groups. Pearson correlation coefficient was calculated to evaluate the relationship between continuous variables. The significance level was accepted as $p<0.05$.

Results

Table 1 presents descriptive statistics regarding the socio-demographic characteristics of the participants. There were 34 (24.3%) female physicians whereas 106 (75.7%) male physicians. The mean age was 36.02 years, the mean professional time was 11.82 years and the mean working duration in the institution was 5.30 years. One-hundred twenty-nine of the physicians (92.1%) were married, 11 (7.9%) were single, 18 (12.9%) were general practitioners, 68 (48.6%) were specialists, 23 (16.4%) were faculty members, and 31 (22.1%) were family physicians. In terms of the unit of study, it is seen that internal sciences are 61 (43.6%), surgical sciences are 61 (43.6%), and emergency medicine is 18 (12.9%). Participants stated that they chose medicine for various reasons including “their family’s wishes” (n=28, 20%), “their ideal” (n=57, 40.7%), “they mark sufficiently high grades in university exams” (n=7, 5%) and "job guarantee and high income" (n=48, 34.3%).

Table 1. *Socio-Demographic Characteristics of Physicians Participating in the Research.*

Variables	Minimum	Maximum	Mean	Standard deviation
Age	**26**	**47**	**36.02**	**5.10**
Years of Professional Work	**1**	**25**	**11.82**	**5.92**
Working Year in the Institution	**1**	**10**	**5.30**	**3.25**
Variables			**%**	**n**
Marital Status	Married		**92.1**	**129**
	Single		**7.9**	**11**
Gender	Female		**24.3**	**34**
	Male		**75.7**	**106**
Job Title	General Practitioner		**12.9**	**18**
	Specialist Physician		**48.6**	**68**
	Academic Physician		**16.4**	**23**
	Family Doctor		**22.1**	**31**
Worked Unit	Internal Sciences		**43.6**	**61**
	Surgical Sciences		**43.6**	**61**
	Emergency Medicine		**12.9**	**18**
Reason for Choosing Medicine	My Family’s Wishes		**20**	**28**
	My Ideal		**40.7**	**57**
	My Score Is High Enough		**5**	**7**
	Job Guarantee and High Income		**34.3**	**48**

Table 2 shows the descriptive statistics of the answers given by the participants to the questions regarding the knowledge level of defensive medicine. As can be seen in Table 2, 77 (55%) of the physicians participating in the study had heard of the concept of defensive medicine, but 97 (69.3%) of them stated that they do not know the content of the concept sufficiently, 29 (20.7%) of the participants were sued due to malpractice in their professional life. On the other hand, 113 (80.7%) of the participants stated that malpractice cases would affect the way they practiced medicine, and 127 (90.7%) believed that there was an increase in the number of malpractice cases. The majority of the physicians participating in the study have already stated that malpractice cases will affect the way they practice medicine.

Table 2. *Physicians' Knowledge Levels about Malpractice and Defensive Medicine Concept.*

Expressions	Yes		No		Total	
	%	n	%	n	%	n
Have you ever heard of the concept of defensive medicine?	**55**	**77**	**45**	**63**	**100**	**140**
Do you know enough about the content of the concept of defensive medicine practices?	**30.7**	**43**	**69.3**	**97**	**100**	**140**
Have you been prosecuted for malpractice during your medical career?	**20.7**	**29**	**79.3**	**111**	**100**	**140**
Do malpractice lawsuits affect the way you practice medicine?	**80.7**	**113**	**19.3**	**27**	**100**	**140**
Do you believe there is an increase in the number of malpractice cases?	**90.7**	**127**	**9.3**	**13**	**100**	**140**

Table 3 shows, the minimum, maximum, arithmetic mean and standard deviation values of the answers given to the questions regarding positive and negative defensive medicine practices, which are the sub-dimensions of defensive medicine. Mean scores of positive and negative defensive medicine sub-dimensions were 3.38±0.60 and 3.19±0.99, respectively. Physicians participating in the research seemed to have a tendency for defensive medical practices. Item with the highest mean (4.39±0.79) was in the "I feel uneasy in my practice as malpractice gets more coverage in the media" whereas item with the lowest mean (2.51±1.56) was "I prefer non-interventional treatment protocols instead of invasive treatment to avoid legal problems."

Table 3. *Responses to Items in Positive and Negative Defensive Medicine Sub-Dimensions.*

Expressions		Min.	Max.	Mean	Standard Deviation
Positive Defensive Medicine	1-To be protected from legal problems, I ask my patients for tests other than those I deem necessary.	**1**	**5**	**3.04**	**1.35**
	2-To avoid legal problems, I write most of the drugs that I can prescribe to my patients within their indications.	**1**	**5**	**3.20**	**1.34**
	3-To avoid legal problems, I would like more consultations about complications that may develop in my patients.	**2**	**5**	**3.79**	**1.06**
	4- I am hospitalizing patients for reasons other than indications (e.g., social indication) to avoid legal problems.	**1**	**5**	**2.57**	**0.96**
	5-I use imaging techniques more frequently to avoid legal problems.	**1**	**5**	**3.04**	**1.49**
	6-To avoid legal problems, I explain medical practices to my patients in more detail.	**2**	**5**	**3.67**	**1.17**
	7- I spend more time with my patients to avoid legal problems.	**1**	**5**	**2.90**	**1.33**
	8-I keep more detailed records to avoid legal problems.	**2**	**5**	**4.22**	**1.05**
	9- To avoid legal problems, I give more importance to informed consent forms.	**1**	**5**	**4.02**	**1.01**
	Positive Defensive Medicine Overall Average	**2.67**	**5**	**3.38**	**0.60**
Negative Defensive Medicine	1- To avoid legal problems, I avoid patients who are likely to sue.	**1**	**5**	**3.09**	**1.28**
	2- To avoid legal problems, I avoid patients with complex problems.	**1**	**5**	**2.87**	**1.39**
	3- To avoid legal problems, I avoid treatment protocols with high complication rates.	**2**	**5**	**3.09**	**0.83**
	4-To avoid legal problems, I tend to prefer non-invasive treatment protocols instead of interventional treatment.	**1**	**5**	**2.51**	**1.56**
	5- As malpractice-related issues get more coverage in the media, I feel uneasiness in the practice of medicine.	**3**	**5**	**4.39**	**0.79**
	Negative Defensive Medicine Overall Average	**1.60**	**5**	**3.19**	**0.99**

Table 4 shows the statistically significant relationships between dependent and independent variables. Defensive medical practices significantly related with gender, job title, unit of study, reason for choosing medicine, age, duration of working in the institution, professional years ($p<0.05$). According to our findings physicians' marital status is not a variable affecting defensive medicine practices.

When mean scores of overall and sub-groups of the scale compared with respect to gender, mean scores of male physicians significantly higher than the female physicians ($p < 0.05$). The tendency towards defensive medical practices was higher in male physicians. Also, general practitioners have a higher tendency towards defensive medicine than specialist physicians, and this difference is statistically significant ($p<0.05$). With respect to their working fields, especially physicians working in emergency medicine clinics were found to have a higher tendency towards defensive medicine then their colleagues working in internal medical field ($p<0.05$)

A statistically significant difference was detected between the groups in the ANOVA test results performed to determine whether defensive medicine practices differ according to the reason for choosing medicine ($p<0.05$). This difference arises from those who choose medicine because it has a high job guarantee income and those who choose medicine because it is their ideal.

As a result of the Pearson correlation analysis performed to determine whether there is a correlation between the age variable and defensive medicine practices, a statistically significant negative correlation was found with both the scores in negative defensive medicine sub-dimension and the overall defensive medicine ($p<0.05$). As the age of the physician increases, tendency towards the defensive medicine decreases.

Similarly the years of working in the profession showed similar correlation with both the negative defensive medicine sub-dimension and the overall defensive medicine attitude scores ($p<0.05$). Attitudes towards defensive medical practices decreases as the number of years working in the profession increases.

Duration of working in the institution and defensive medicine attitude was negatively correlated with each other, as well as, both of its sub-dimensions ($p<0.05$). As the number of years working in the institution increases, attitude towards negative, positive and overall defensive medicine decreases.

Table 4. *Comparison of Scale Scores According to Socio-Demographic Variables.**

	Marital Status	Gender	Job Title	Worked Unit	Reason for Choosing Medicine	Age	Years Of Working In The Profession	Years Of Work In The Institution
Positive Defensive Medicine Overall Average		p<0.05 t:-4.412	p<0.05 F:4.871	p<0.05 F:16.035	p<0.05 F:3.510			p<0.05 r:-0.281
Negative Defensive Medicine Overall Average		p<0.05 t:-4.010	p<0.05 F:13.165	p<0.05 F:9.782	p<0.05 F:3.892	p<0.05 r:-0.328	p<0.05 r:-0.415	p<0.05 r:-0.418
Overall Average Of The Scale		p<0.05 t:-4.056	p<0.05 F:9.270	p<0.05 F:15.951	p<0.05 F:4.333	p<0.05 r:-0.168	p<0.05 r:-0.245	p<0.05 r:-0.381

**Only those with statistically significant difference/relation at the p<0.05 significance level is given.*

Table 5 shows the correlations between the defensive medicine behavior scale and its sub-dimensions. In our study, means of positive, negative and overall defensive medicine behavior score was found to be 3.38±0.60, 3.19±0.99, and 3.31±0.67 respectively. All dimensions were positively correlated with each other. While positive defensive medicine scores increase, negative defensive medicine scores also increase. While positive and negative defensive medicine scores increase, general defensive medicine scores also increase.

Table 5. *Correlation Table of The Scale And Its Sub-Dimensions.*

		Mean	Standard Deviation	1	2	3
1	**Positive Defensive Medicine**	3,3873	0,60807	1		
2	**Negative Defensive Medicine**	3,1943	0,99926	,647**	1	
3	**Overall Average**	3,3184	0,67879	,916**	,898**	1
** p<0.01						

Dıscussıon

Malpractice lawsuits are one of the most important factors that push physicians to have a defensive attitude while practicing the profession of medicine. The findings reveal that the main factor that triggers physicians to resort to defensive medicine is the increase in the number of malpractice cases. Additionally, it has been determined that defensive medicine behaviors vary depending on various demographic and professional factors. The literature suggests that defensive medicine practices of physicians do not benefit patients. It highlights that these behaviors lead to an excessive increase in health expenditures and waste of resources. The literature also and states the need to raise awareness and train physicians.

According to the findings in our study 45% of the participants stated that they do not heard the concept of defensive medicine and 69.3% of them reported insufficient knowledge about its content. These findings reveals the importance of emphasizing the concept of defensive medicine and ensuring that physicians are informed about it. In a similar study conducted by Baser et al., 59.1% of the participants had not heard of the concept of defensive medicine, and 86.4% of them did not have sufficient knowledge about the content of defensive medicine.[7] Similarly, Özata et al., found that 61% of the participants were not familiar with the concept of defensive medicine whereas 88.6% of them did not know the content of defensive medicine. In the same study, 80.7% of the participants answer affirmatively to the question "Do malpractice cases affect the way you practice medicine?" [16] In a study by Ratemero and Galesic, more than 90% of the physicians stated that they were afraid of legal consequences in the decisions they made with their patients.[17]

More than ninety percent of our respondents believe that there has been an increase in the number of malpractice cases. In the study conducted by Özata et al., 85.2% of the participants stated that they believed there was an increase in malpractice cases. Likewise, in a study conducted in Italy, it was revealed that there would be an increase in defensive medicine practices.[18] In a defensive medicine study conducted by Çalıkoğlu and Aras, it was found that defensive medicine behaviors increased in physicians due to malpractice lawsuits.[19] These results are consistent with the findings of a study which revealed malpractice cases appear as the biggest factor triggering defensive medicine practices and unfortunately push physicians to defensive attitudes.[20]

In our study, the mean scores of the items belonging to the positive and negative defensive medicine sub-dimensions was 3.38 and 3.19, respectively. This finding showed the physicians generally have positive and negative defensive medicine tendencies. Physicians are worried about malpractice issues as they appear in the media, keep more detailed records to avoid legal problems, give more importance to informed consent forms, seek more consultation, use imaging techniques more frequently, explain medical practices in more detail, and avoid treatments with high complication rates. It seemed that they avoided patients with a high probability of litigation, and prescribed most of the drugs they could prescribe. This result is consistent with the results of many studies. In a study conducted on general practitioners, it was determined that 98% of physicians resorted to defensive medicine practices against patient complaints.[21] In a US study, it was stated that 93% of physicians applied to defensive medicine practices such as more examinations, consultations, and imaging.[22] In their sample of physicians, Özata and colleagues found that 57.2% of them use imaging examinations more frequently, 56.8% of them request additional consultations, 47.2% of them request additional examinations, and 43.7% of them avoid risky patients.[16] In a study conducted to determine the negative impact of defensive medicine behaviors on the health economy in Turkey, it was stated that it cannot be neglected.[4]

We found that male physicians resort to defensive medicine more than female physicians. Britos et al. revealed that male participants used defensive medicine more than women.[23] Gender roles and social expectations may encourage male physicians to take fewer risks and therefore practice defensive medicine more frequently. Additionally, psychosocial factors such as male physicians' avoidance of disclosing their mistakes in decision-making processes may also contribute to this tendency.

Our study reveals that general practitioners are more inclined towards defensive medicine. This may occur for several potential reasons:

Broad Scope of Practice: General practitioners often deal with a wide range of medical conditions and may not have specialized knowledge in specific areas. Due to the complexity and diversity of cases they handle, general practitioners might adopt defensive medicine practices more readily to cover a broad spectrum of potential risks.

Risk Aversion and Legal Concerns: General practitioners, who may not have the same level of specialized expertise as other medical professionals, might be more risk-averse. Concerns about potential legal consequences and malpractice claims could lead them to adopt defensive practices as a precautionary measure.

Limited Resources for Specialized Tests: General practitioners may have limited access to specialized diagnostic tests and procedures compared to specialists. To compensate for this limitation and to ensure they don't miss any potential diagnoses, they might resort to more extensive testing and precautionary measures.

Time Constraints: General practitioners often have limited time per patient encounter due to a high patient load. This time constraint may influence their decision-making process, leading them to order additional tests or procedures to avoid potential oversights and legal repercussions.
Patient Expectations and Satisfaction: General practitioners may perceive that defensive medicine practices align with patient expectations for thorough and comprehensive care. To enhance patient satisfaction and avoid patient complaints or legal actions, they might lean towards more defensive approaches.
Lack of Specialty-Specific Training: General practitioners, not having specialty training in a specific field, may feel less confident in making nuanced decisions. This lack of specialized expertise might contribute to their inclination towards defensive medicine as a way to mitigate uncertainty.
Medical Liability Insurance Costs: The cost of medical liability insurance may be a significant factor. General practitioners, facing potentially higher insurance premiums, might be motivated to practice defensively to reduce the risk of legal claims and subsequent financial implications.
Regarding our participats, physicians working in the field of internal medicine mostly resort to defensive medicine practices. It has been determined that physicians, especially those working in emergency departments, often resort to defensive medicine practices. This situation can be explained by several possible reasons:
Risk of Missed Diagnoses in Emergency Departments: Emergency department physicians frequently encounter patients with acute and potentially life-threatening conditions. The pressure to make rapid decisions, coupled with the fear of missing a critical diagnosis, may drive emergency physicians to practice defensively. Ordering additional tests or consultations might be a strategy to minimize the risk of overlooking serious conditions.
Time Sensitivity in Emergency Departments: Emergency departments are often characterized by time constraints and a high patient turnover. The urgency to make quick decisions may contribute to defensive practices, with physicians opting for more tests and procedures to ensure comprehensive assessments within limited time frames.
High Stakes and Legal Concerns in Emergency Medicine: Emergency medicine involves dealing with high-stakes situations where timely decisions can be crucial. The fear of legal consequences and malpractice claims, especially in emergency settings, may motivate physicians to adopt defensive medicine practices to minimize potential risks.
Patient Expectations in Emergency Situations: Patients seeking care in emergency departments often have urgent and serious health concerns. The expectation for immediate and thorough care may influence physicians to practice defensively, ensuring they address all potential issues to meet patient expectations and avoid complaints.
Variability in Case Complexity: The nature of cases in internal medicine and emergency departments varies widely. Internal medicine cases may involve chronic conditions and long-term management, while emergency department cases are often acute and require rapid decision-making. This variability in case complexity can contribute to differences in defensive medicine practices.
Training and Specialty-Specific Guidelines: Differences in medical training and specialty-specific guidelines may play a role. Physicians in different specialties may receive distinct training on risk management and defensive practices, influencing their approaches to patient care.
There was a significant negative relationship between the age variable and positive and negative defensive medicine practices. As age increases attitude towards defensive medicine practices decreases, as age increases the tendency towards defensive medicine practices increases. This shows that as physicians get older, their need for self-confidence decreases. The diversity of professional experience and the patient profile encountered over time suggest that the tendency to resort to defensive medicine is decreasing.
As the number of years working in the profession and the number of years working in the institution increases, the tendency to resort to defensive medicine practices decreases. This suggests that it is directly related to the physician's experience in his profession and his orientation to the institution where he/she works. As the length of time physicians work in the profession and institution increases, their tendency to resort to defensive medicine decreases.

Conclusıon

Research findings revealed that 69.3% of the sample group did not have sufficient knowledge about defensive medicine. Moreover, 90.7% believed that malpractice cases were increasing, and 80.7% thought that these cases were affecting their medical practice. Defensive medicine practices vary significantly according to variables such as gender, title, branch, reason for choosing medicine, age, professional experience, and years of working in the institution.
In their careers, physicians often resort to positive and negative defensive medicine to protect themselves from malpractice lawsuits and legal consequences. Unfortunately, these practices do not benefit patients in both developing and developed countries and become a significant problem. Solutions should involve patient education, empowering physicians to make informed decisions, and government initiatives to raise public awareness. Additionally, further research should explore the social and psychological impact of defensive medicine behaviors

on physicians affected by rising healthcare expenditures, malpractice, and legal fears, thus filling the literature gap. The workload of physicians, especially in emergency departments, and the number of patients per physician should be reduced.

Conflict of interest

We have no conflict of interests to disclose.

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