ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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Assessment of Relationship Between Physicians' Malpractice Experience and Fear of Malpractice: Cross-Sectional Research

Hekimlerin Malpraktis Tecrübeleri ile Malpraktis Korkuları Arasındaki İlişkinin Değerlendirilmesi: Kesitsel Araştırma

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This study was prepared based on the findings of Uğur UĞRAK's thesis study titled "Assessment of relationship between physicians' medical error perceptions, attitues and fear of malpractice" (Ankara: Hacettepe University; 2019).

ABSTRACT Objective: The purpose of this study is to present relationships between physician' malpractice experiences and malpractice fear. Additionally, the other purpose of this study is to evaluate whether physicians' malpractice fear are affected by malpractice experience and socio demographic characteristics. **Material and Methods:** The universe of this study consists of 567 physicians working in Gülhane Training and Research Hospital as of July 21, 2017 when the research was applied. Due to the difficulty of reaching the entire universe, it was determined to reach at least 229 physicians as a result of the sample calculation made at a 95% confidence level. A total of 248 physicians (Sample Proportion: 44%) were surveyed by using a convenience sampling method. Descriptive statistics were indicated with frequency, percentage, mean, and standard deviation. To evaluate relationships between the socio-demographic characteristics and malpractice experiences of physicians and, their malpractice fears, a structural model has been conducted in the AMOS 24 statistical software. **Results:** According to the analysis of the data, statistically significant relationships were found between the physician's self-experience of malpractice and their fear of malpractice (β=0.196; p=0.003) and colleague-experience of malpractice and their fear of malpractice (β=0.153; p= 0.009). Within the scope of the study, it was found that physicians' level of malpractice fear did not differ significantly in terms of gender, age, and status. **Conclusion:** Consequently, these findings indicate that experiences of physicians with malpractice, obtained while performing medical practice lead to fear of malpractice, which has important impacts on health systems in many ways. Particularly, the effect of physicians' own experience of malpractice on fear of malpractice was higher than that of their colleagues' experience of malpractice.

Keywords: Delivery of health care; malpractice; defensive medicine

ÖZET Amaç: Bu çalışmanın amacı, hekimlerin malpraktis deneyimleriyle malpraktis korkuları arasındaki ilişkinin ortaya konmasıdır. Ayrıca çalışmanın bir diğer amacı, hekimlerin malpraktis korkularının, malpraktis tecrübeleri ve sosyodemografik özelliklerinden etkilenip etkilenmediğinin değerlendirilmesidir. **Gereç ve Yöntemler:** Araştırmanın evrenini, araştırmanın uygulandığı 21 Temmuz 2017 tarihi itibarıyla Gülhane Eğitim ve Araştırma Hastanesinde görev yapan 567 hekim oluşturmaktadır. Tüm evrene ulaşmanın zor olması nedeniyle %95 güven düzeyinde yapılan örneklem hesabında en az 229 gözlem sayısı tespit edilmiştir. Olasılıksız kolayda örnekleme metodu kullanılarak 248 hekime (evrene ulaşma oranı %44) ulaşılmıştır. Verilerin analizinde, tanımlayıcı istatistiklerin yanı sıra ortalama ve standart sapmalardan yararlanılmıştır. Hekimlerin sosyodemografik özelikleri ve malpraktis tecrübeleriyle malpraktis korkuları arasındaki ilişkinin değerlendirilmesi amacıyla AMOS 24 istatistik yazılımında yapısal eşitlik modeli uygulanmıştır. **Bulgular:** Verilerin analizine göre hekimin yanlış uygulama deneyimiyle yanlış uygulama korkusu (β=0,196; p=0,003) ve meslektaşlarının hatalı uygulama deneyimi ve hatalı uygulama korkusu arasında istatistiksel olarak anlamlı ilişkiler bulunmuştur (β=0,153; p=0,009). Çalışma kapsamında hekimlerin malpraktis korku seviyelerinin cinsiyet, yaş ve statü gibi özelliklerine göre anlamlı farklılık göstermediği bulunmuştur. **Sonuç:** Sonuç olarak bu bulgular, hekimlerin tıbbi uygulama yaparken edindikleri yanlış uygulama deneyimlerinin, sağlık sistemleri üzerinde pek çok açıdan önemli etkileri olan yanlış uygulama korkusuna yol açtığını göstermektedir. Özellikle hekimlerin kendi yanlış uygulama deneyimlerinin, yanlış uygulama korkusu üzerindeki etkisi, meslektaşlarının yanlış uygulama deneyiminden daha yüksektir.

Anahtar Kelimeler: Sağlık hizmetleri sunumu; malpraktis; defansif tıp

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Even though every physician swears to provide health care without harming any patient in the Hippocratic oath before starting the profession, research has shown that medicine is not completely error-free.[1] According to two major studies in the United States of America, approximately 44,000 to 98,000 people die annually in hospitals due to preventable medical errors.[2] Goodman et al. stated that approximately 187,000 deaths and 6.1 million injuries occur annually inside and outside of hospitals due to medical errors in the USA.[3]

All medical injuries don't occur as a result of negligence. All medical interventions come along with inherited health risks.[4] For example, an infection risk inherits in every surgical procedure. Many pre-op applications such as sterilization, disinfection, premedication, controls of infection indicators are applied to prevent post-op infection. Despite all precautions, a post-op infection can develop. An adverse event in this example is considered as a complication. Medical complications are defined as risks that may occur although precautions that are generally accepted in medicine are applied during diagnosis and treatment processes.[5] A physician must apply all generally accepted medical requirements for an adverse medical event to be considered as a complication.

Patients and their relatives tend to consider undesirable health outcomes as malpractice because they might not clearly understand this difference between medical complications and medical errors.[6] Many physicians are charged with malpractice allegations because patients and their relatives can't see this distinction. Particularly, some factors such as developing health technologies, increasing patient expectations, improved communication opportunities, media, and some lawyers seeing these cases as an earning tool can turn the patient-doctor relationship into a plaintiff-defendant relationship.[7-10]

Although many physicians have been sued for malpractice allegations, a large part of these cases results in favor of physicians.[9,11,12] Even if most of these malpractice cases are concluded in favor of physicians, malpractice claims and lawsuits create a kind of fear over physicians. The fear that arises from the possibility of being sued or charged with a claim of malpractice when practicing medicine can be defined as a fear of malpractice.

The question of how sensory experiences such as fear occur has been tried to be explained by many academicians with different theories.[13-16] One of the most accepted of these theories is one of Schachter and Singer, which advocates that perceived emotions should be evaluated by past experiences through a cognitive process.[15] With this theory, it has been demonstrated that experiences are effective in the formation of fear. Besides, the level of fear and anxiety varies according to personal characteristics such as genetics, environment, experiences, etc. Similarly, Bay and Algase defined fear as a defense reaction that occurs when exposed to perceived threats or sources of a previously experienced fear.[17]

Fear of malpractice also results in a defense mechanism physician called defensive medicine, which has many positive and negative effects on healthcare systems. As a positive effect, due to the uncertainty of treatment process, defensive medicine leads physicians to talk more clearly to patients and their relatives about the process to obtain more informed consent. Further investigation, expert opinion, and team decision-making processes in complicated cases can be considered as other positive results of defensive medicine.[9] It was also observed that physicians kept more rigorous medical records and gave patients more detailed information about the procedures due to fear of malpractice.[18]

However, all effects of malpractice fear on the healthcare system aren't positive. Fear of malpractice was stated to increase costs in the healthcare system.[19,20] Besides, fear of malpractice was found to affect access to the healthcare system negatively.[21] Moreover, it was stated that fear of malpractice didn't contribute to the quality of health care as expected, it may even have negative effects.[22-24] The fear of malpractice was also stated to prevent physicians from applying new treatment methods and the innovation process so affect the progress negatively in the health system.[25]

This study aimed to evaluate relationships between fear of malpractice, which has important ef-

fects on the health system, and the physicians' malpractice experience and socio-demographic characteristics. It is considered that revealing the factors that cause fear of malpractice will be beneficial for health politicians and managers.

MATERIAL AND METHODS

PURPOSE OF THE STUDY

Aims of this study are to reveal physicians' malpractice fears and the relationships between physicians' socio-demographic characteristics, malpractice experiences, and their malpractice fear.

UNIVERSE AND SAMPLING

The universe of this study consists of 567 physicians working in Gülhane Training and Research Hospital as of July 21, 2017 when the research was applied. Due to the difficulty of reaching the entire universe, it was determined to reach at least 229 physicians as a result of the sample calculation made at a 95% confidence level. A total of 248 physicians (sample proportion: 44%) were surveyed by using a convenience sampling method.

The ethical compliance permit of the study was obtained from Hacettepe University Non-interventional Clinical Research Ethics Committee with a decision number GO 17/440-07- 2017/14 on 30 May 2017.

All procedures were carried out in accordance with the Declaration of Helsinki. All individuals were informed about this study, then informed consent forms were obtained.

DATA COLLECTION TOOL

The survey method was used as a data collection tool. The survey consisted of three parts. The first part included six questions to determine the socio-demographic characteristics of physicians (age, gender, marital status, tenure in the medical profession, the discipline, and status).

In the second part, the malpractice experience index was used, which was developed by the researcher to evaluate physicians' malpractice experience. The validity and reliability of this index were conducted in this study. The malpractice experience index consisted of 5 items under 2 dimensions (Table 1). A high score represents a high level of malpractice experience.

TABLE 1: Malpractice experience index.

Self-experience (0-2 score)	**Score**
• Have you been involved in any malpractice case?	
• Have you been charged with any malpractice allegations?	
Colleague-experience (0-3 Score)	(1) Yes
• Have you had any colleagues involved in any malpractice case?	(0) No
• Have you had any colleagues charged with any malpractice allegations?	
• Have you had any colleagues sentenced for malpractice?	

In the last part of the survey, the malpractice fear scale with six items was used, which was developed by Katz.[26] All items in the scale are coded straight on a 5-point Likert scale from (1) Strongly disagree to (5) Strongly agree. A score 6-30 is obtained from the scale, a higher score indicates a higher fear of malpractice. Fear levels of malpractice are categorized as; 15 or lower score is low-level fear, 15 to 20 score is middle-level fear and 20 or higher is high-level fear. In some studies, fear level of malpractice was evaluated between 1 to 5 score.[27-29]

DATA ANALYSIS

Descriptive statistics were indicated with frequency, percentage, mean, and standard deviation. For construct validity of malpractice experience index, Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were applied. The reliability analysis of the malpractice experience index was evaluated by the Cronbach alpha coefficient and the composite reliability coefficient. To evaluate relationships between the socio-demographic characteristics and malpractice experiences of physicians and, their malpractice fears, a structural model has been conducted in the AMOS 24 statistical software.

VALIDITY AND RELIABILITY ANALYSIS

All items in the scales used in the study were presented to 11 specialist physicians for evaluation in terms of items' interest with the study subject, understandability, and responsiveness by physicians. According to the evaluation findings of the specialist physicians, it was determined that the scales have superficial validity.

EFA was performed with the principal component analysis and varimax methods in order to evaluate the construct validity of 5 items designed to measure the physicians' malpractice experiences. As a result of EFA findings, it was determined that the items were gathered under two factors and the total variance explained was 69.73%. Since the items under each factor were conceptually consistent and the factor loads were at an acceptable level, the first factor was named "Self-experience", which consists of two items and factor loads are 0.871 and 0.878. The second factor was named "Colleague-experience", which consists of three items and factor loads were found as 0.697, 0.797, and 0.823 (Table 2). The model obtained in EFA was also tested in CFA.

Model-fit measures of CFA model [chi square (χ^2) / degrees of freedom (df): 0.05; goodness-of-fit index (GFI): 0.998; adjusted goodness-of-fit index (AGFI): 0.992; normed fit index (NFI): 0.993; root mean square residual (RMR): 0.004] were within the good-fit limits (Figure 1). Based on these findings, the model fit was accepted.

The standardized regression coefficients between hidden and observed variables and, the co-

TABLE 2: Explanatory factor analysis findings and distribution of items of malpractice experiences.

Kaiser-Meyer-Olkin measure of sampling adequacy			0.600
Bartlett's test of sphericity	Approx. Chi-square		282.247
	Df		10
	Sig.		<0.001
Total variance explained			69.73%
Cronbach alpha	0.663	Composite Reliability	0.908
Subscales of malpractice experience index	**Factor value**	**Variance explained**	**Cronbach alpha's/composite reliability**
1. Self-experience			
Being involved in any malpractice case	0.871	26.65%	0.740/0.866
Being charged with any malpractice allegation	0.878		
2. Colleague-experience			
Having any colleague sentenced for malpractice	0.697		
Having any colleague involved in any malpractice case	0.797	43.08%	0.685/0.817
Having any colleague charged with any malpractice allegation	0.823		

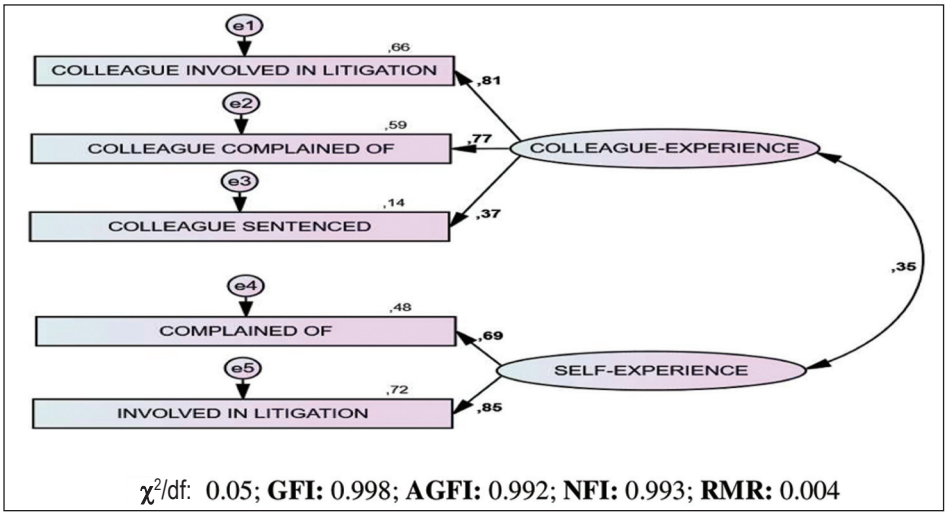

FIGURE 1: Confirmatory factor analysis model of malpractice experience index.
Chi square (χ^2) / degrees of freedom (df); GFI: Goodness-of-fit index; AGFI: Adjusted goodness-of-fit index: NFI: Normed fit index; RMR: Root mean square residual.

TABLE 3: CFA findings of malpractice experience index.

Predicted variable ← predicting variable	β	p value
Colleague sentenced ← colleague-experience	0.371	0.004
Colleague complained of ← colleague-experience	0.770	0.008
Colleague involved in litigation ← colleague-experience	0.813	0.005
Involved in litigation ← self-experience	0.851	0.005
Complained of ← self-experience	0.694	0.005
Covariances	**Estimates**	**p value**
Colleague-experience ↔self-experience	0.10	**0.001**

CFA: Confirmatory factor analysis.

variance value between the subscales are shown in Table 3. All regression coefficients and covariance values were found statistically significant ($p<0.001$). According to these findings, it was determined that the malpractice experience index was a structurally valid measurement tool. The malpractice experience index formed a basis for further analysis in this study.

Cronbach's alpha and composite reliability coefficients were calculated for the reliability analysis of the malpractice fear index (Table 2). Of whole malpractice fear index, Cronbach's alpha coefficient: 0.663, composite reliability coefficient: 0.908. Self-experience subscale's Cronbach's alpha coefficient: 0.740 and composite reliability coefficients: 0.866. Lastly, of Colleague-experience subscale, Cronbach's alpha coefficients: 0.685, composite reliability coefficients: 0.817. According to this reliability findings, the malpractice experience index was seen to have internal consistency.

This study was carried out on physicians working in Gülhane Training and Research Hospital in Ankara.

RESULTS

The age mean of the physicians participated in the study was 36.76 (±6.48) years. Of physicians 44.40% (n=110) were 35 years or younger, 45.60% (n=113) were 36 to 45 years, 10.10% (n=25) were 46 years or older. Of the participant physicians, 51.60% (n=128) worked in internal medical sciences, 32.30% (n=80) in surgical medical sciences, 6.50% (n=16) in dentistry, and 9.70% (n=24) in basic medical sciences, 37.90% (n=154) of the participants were resident physicians and the remaining 62.10% (n=94) were specialists physicians.

Of the participant physicians, 7.80% (n=19) were involved in a malpractice case, 10.90% (n=27) were charged with malpractice allegations, 48.40% (n=120) had a colleague charged with any malpractice allegation, 38.60% (n=95) had a colleague involved in any malpractice case, and 11% (n=27) had a colleague sentenced for malpractice (Table 4).

Descriptive findings regarding malpractice fear of the physicians participating in the study are given in Table 5. Accordingly, the malpractice fear mean was found to be 21.15 (±5.11) as a high level. The item *"Relying on clinical judgment rather than on technology to make a diagnosis is becoming riskier from a medicolegal perspective"* was found highest with 3.79 (±1.11) mean. The item *"I have had to make significant changes in my practice pattern because of recent legal developments concerning medical delivery."* had the lowest score with 3.08 (±1.10) mean. Additionally, of the physicians, 59.3% (n=147) had high level malpractice fear, 28.2% (n=70) had medium level malpractice fear, and only 12.5% (n=31) had low level malpractice fear (Table 5).

The structural model and model-fit measures, designed to evaluate the relationships between sociodemographic characteristics and malpractice experience of physicians and, their fear of malpractice are shown in Figure 2. As seen in Figure 2, it was seen that the model-fit measures [χ^2/df: 0.57; GFI: 0.988; AGFI: 0.974; NFI: 0.979; standardized root mean square residual (SRMR): 0.047] were within the good-fit limits. Based on these findings, the model-fit was accepted.

TABLE 4: Malpractice experience index.

1. Self-experience	n	%
• Being involved in any malpractice case	19	7.8
• Being charged with any malpractice allegation	27	10.9
2. Colleague-experience		
• Having any colleague sentenced for malpractice	27	11.0
• Having any colleague involved in any malpractice case	95	38.6
• Having any colleague charged with any malpractice allegation	120	48.4

TABLE 5: Physicians' evaluation of malpractice fear items.

Items of malpractice fear scale		Mean	SD
MF 1. I have had to make significant changes in my practice pattern because of recent legal developments concerning medical delivery.		3.08	1.10
MF 2. I am concerned that I will be involved in a malpractice case sometime in the next 10 years.		3.50	1.10
MF 3. I feel pressured in my day-to-day practice by the threat of malpractice litigation.		3.36	1.13
MF 4. I order some tests or consultations simply to avoid the appearance of malpractice.		3.69	1.12
MF 5. Sometimes I ask for consultant opinions primarily to reduce my risk of being sued.		3.72	1.12
MF 6. Relying on clinical judgment rather than on technology to make a diagnosis is becoming riskier from a medicolegal perspective.		3.79	1.11
The score of malpractice fear	On 1 to 5 scale:	3.52	0.85
	On 6 to 30 scale:	21.15	5.11
		n	**%**
Level of malpractice fear	Low malpractice fear (≤15)	31	12.5
	Middle malpractice fear (16-20)	70	28.2
	High malpractice fear (≥21)	147	59.3

MF: Malpractice fear; SD: Standard deviation.

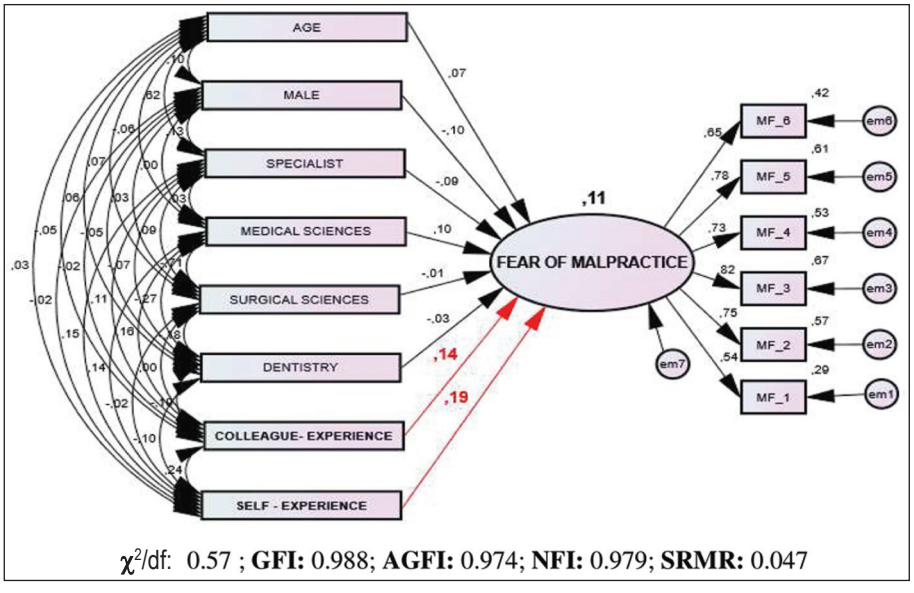

FIGURE 2: Structural model of relationships between socio-demographic characteristics and malpractice experience of physicians and their fear of malpractice. Chi square (χ^2) / degrees of freedom (df); GFI: Goodness-of-fit index; AGFI: Adjusted goodness-of-fit index: NFI: Normed fit index; SRMR: Standardized root mean square residual.

As seen in Table 6, no statistically significant relationship was found between the physicians' socio-demographic characteristics and the fear of malpractice (p>0.05). However, statistically significant relationships were found between the physician's self-experience of malpractice and their fear of malpractice (β=0.196; p=0.003) and colleague-experience of malpractice and their fear of malpractice (β=0.153; p=0.009). Accordingly, the effect of physicians' own experience of malpractice on fear of malpractice was higher than that of their colleagues' experience of malpractice. It was also seen that 11% of the change in the variance of malpractice fear mean of physicians were explained with this model.

DISCUSSION

In evaluations of the physicians' malpractice experience, it was determined that 7.8% of the physicians were involved in the malpractice case and 10.9% were charged with the malpractice allegation. Al-

TABLE 6: Findings of relationships between socio-demographic characteristics and malpractice experience of physicians and their fear of malpractice.

Predicted variable ← predicting variable	Standardized regression weight (β)	p value
Fear of malpractice ← Age	0.070	0.422
Fear of malpractice ← Male[1]	-0.105	0.120
Fear of malpractice ← Specialist[2]	-0.086	0.386
Fear of malpractice ← Medical science[3]	0.099	0.457
Fear of malpractice ← Surgical science[3]	-0.011	0.976
Fear of malpractice ← Dentistry[3]	-0.031	0.824
Fear of malpractice ← Colleague-experience	0.153	**0.009**
Fear of malpractice ← Self-experience	0.196	**0.003**
MF_5 ← fear of malpractice	0.780	**0.003**
MF_4 ← fear of malpractice	0.730	**0.004**
MF_3 ← fear of malpractice	0.817	**0.003**
MF_2 ← fear of malpractice	0.754	**0.003**
MF_1 ← fear of malpractice	0.543	**0.004**
MF_6 ← fear of malpractice	0.645	**0.004**

MF: Malpractice fear; 1: Reference (female); 2: Reference (resident); 3: Reference (basic medical science).

though the rate of physicians, who have colleagues involved in a malpractice case was 48.4%, the rate of physicians who have colleagues sentenced for malpractice was 11%. It is seen that the claims of malpractice resulting in punishment are very low, despite this high rate of complaints/litigation due to medical malpractice. This is thought that since patients and their relatives are unable to distinguish between complications and medical malpractice while evaluating their health outcomes, they might tend to deem unsatisfactory health outcomes as medical malpractice.

Physicians' fear of malpractice was found to be high at 3.52 (±0.85) according to the findings of this study. Similarly, in the study of Franks, Williams on 187 physicians, fear of malpractice was found to be 3.31 (±0.84) at a high level.[28] In the study conducted by Fiscella et al. (33) on 172 family physicians and interns, family physicians' fear of malpractice [3.36 (±0.91)] was found to be higher than that of interns [3.24 (±0.76)].[27]

In the study of Benbassat et al., the researchers evaluated the fear of malpractice of 82 specialists and 72 assistant physicians with the scale they developed.[30] As a result of the evaluations, physicians were found to have a high level of malpractice fear (Mean: 5.50 out of 7). In a study conducted by Katz et al. on 33 emergency specialist physicians, 39.7% of the physicians had a high level, 37.7% had a moderate level and 43.7% had a low level of malpractice fear.[26] In a study conducted by Reed et al. on 270 physicians, the malpractice fear level of physicians were found to be high 4.25 (±1.15).[30] Similarly, in the study of Reschovsky and Saiontz-Martinez on 3201 physicians, the malpractice fear of the participating physicians was found to be high 3.71 (±1.00).[19]

As in the studies of Carrier et al. and Reed et al., also in this study, item *"Relying on clinical judgment rather than on technology to make a diagnosis is becoming risker from a medicolegal perspective.*" had the highest mean.[29,31]

As can be seen from the studies in the literature, the malpractice fear level of physicians is generally quite high. The high fear can be a result of negative psychological effects and professional reputation loss, which were caused by the increasing number of malpractice cases and complaints filed against physicians, because of patients' and patient relatives' high expectations.[20,32]

Within the scope of the study, it was found that physicians' level of malpractice fear did not differ significantly in terms of gender, age, and status. Similar studies are supporting these findings in the literature.[26,28,30]

In the study, different from the literature, no significant difference was found between malpractice fear levels of physicians in terms of the science field. However, studies in the literature generally show that physicians working in surgical sciences have a higher level of malpractice fears than other fields.[19,30,31]

The reason for the higher level of malpractice fears of physicians working in the surgical sciences can be their exposure to more malpractice cases and complaints than other fields.[11,33] The difference between this study and the literature findings might be as a result of the characteristics of the hospital where the study was conducted. The hospital where this study was conducted was the biggest military hospital authorized to report health certificate and conduct

periodic health examination of all military personnel in the Turkish Armed Forces, therefore, physicians in medical sciences such as the internal medicine, cardiology, and psychiatry departments were faced with litigations and charges as well. It is thought, therefore, significant differences didn't exist in terms of the sciences field.

It is considered that, of physicians in this study, personal malpractice experience and, malpractice experience obtained from colleague's experience might be an important reason for the high malpractice fear of physicians. In the study of Carrier et al., consistent with this study findings, it was found that physicians who were exposed to more malpractice charges had higher levels of malpractice fear than other physicians.[31] Additionally, considering that fear is affected by past experiences, findings of this study are in line with the literature.[15,34,35]

CONCLUSION

The following results have been reached by evaluating the findings obtained from analyzes made by the purpose of the research:

- Approximately 90% of physicians have a high level of malpractice fear.
- The negative experiences of physicians regarding malpractice and medical errors cause physicians' malpractice fear to increase. Especially, physicians' own malpractice experience has a greater impact on physicians' malpractice fear than experiences obtained from colleagues. Based on these results, the suggestions stated below are considered to be useful.

While obtaining informed consent from patients and their relatives for diagnose and treatment processes of the patients, the risks inherent to medical intervention to be applied can be clearly explained. Particularly in risky cases, if possible, the dangers of the case should be explained to not only the patient but also their relatives to make sure that patients and their relatives understand the possible risks. In this way, it can be possible to reduce the exposure probability of physicians to malpractice charges and litigations caused by the patients' inability to distinguish between complications and malpractice.

Information and training programs for young physicians can be organized by making use of the experience of physicians who have undergone the malpractice lawsuit and complaints process.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

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: *Uğur Uğrak, Oğuz Işık;* ***Design:*** *Uğur Uğrak, Oğuz Işık;* ***Control/Supervision:*** *Oğuz Işık;* ***Data Collection and/or Processing:*** *Uğur Uğrak;* ***Analysis and/or Interpretation:*** *Uğur Uğrak;* ***Literature Review:*** *Uğur Uğrak;* ***Writing the Article:*** *Uğur Uğrak;* ***Critical Review:*** *Uğur Uğrak, Oğuz Işık.*

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