ORIGINAL RESEARCH

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Effect of Defensive Medicine on Clinical Practices of Emergency Medicine Physicians

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Abstract

Objective: To determine the perspectives of emergency medicine physicians on defensive medicine practices under the influence of malpractice thought, the frequency of these practices, and their relationship with crowded emergency departments, and to reveal the factors affecting physicians in this practice.

Materials and Methods: A questionnaire consisting of questions including positive and negative defensive medicine practices was prepared and delivered to emergency medicine physicians who were in a patient-physician relationship by hand or e-mail.

Results: Physicians answered the following questions: protecting themselves from possible medical errors, keeping more detailed records (87.4%), requesting additional examinations when not necessary (56.8%), keeping the patient under observation for long hours (47.2%), asking for additional consultations (32.7%), avoiding treatments with high complications (17.3%), referring patients (17%), trying to avoid invasive procedures (11%) and prescribing extra medications (10.6%).

Conclusion: Emergency medicine physicians preferred positive defensive medicine practices over negative defensive medicine practices. It has been observed that the pressure of the relatives of the patients and the threat of lawsuits were the main factors influencing defensive medicine practices.

Keywords: Emergency medicine, defensive medicine, malpractise

Introduction

Defensive medicine refers to the physician's excessive use of diagnostic and therapeutic procedures to protect against lawsuits and avoid approaches with a high risk of malpractise lawsuits [1]. For example, the World Medical Association's malpractise; defines it as "harm caused by the physician's failure to perform standard up-to-date practice during treatment, lack of skill, or not giving treatment to the patient". Unfortunately, medical malpractise cases and criminal and civil lawsuits have been increasing in recent years. As a result, physicians in high-risk specialties are exposed to medical malpractise and similar claims, and they turn to defensive medicine practices for fear of being sued and violence. Defensive medicine is divided into two: positive (defensive) and negative (recessive) according to the way it is applied [2].

Positive defensive medicine consists of approaches that are not medically necessary but that the physician tends to show that the patient is doing more than expected for the diagnosis and treatment of the patient. It may include requesting more examinations and consultations [3]. Although it has been observed that the defensive medicine approach increases patient satisfaction, its long-term benefits for the patient and the country's economy are controversial when evaluated in terms of financial resources and time [4].

Negative defensive medicine is "physicians refraining from applying diagnosis and treatment methods with a high risk of

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resulting in malpractise lawsuits to protect themselves from legal risk situations" [5]. Negative defensive medical practices are not only a method that the physician uses to protect himself from a medical error that may occur but may also be in the form of avoiding patients or diseases that they do not consider cost-effective for purposes such as spending less time and less cost from a commercial point of view [6,7].

This study aims to determine the perspectives of emergency medical workers on defensive medicine practices in a malpractise environment, the frequency of these practices, and their variability (if any) in crowded emergency departments.

Materials and Methods

This study was conducted between 12.06.2013 and 12.07.2013 at İstanbul Medeniyet University Göztepe Training and Research Hospital. We prepared a questionnaire that included demographic information, positive and negative defensive medicine practices, liability insurance, and experiences about malpractise events. The answers were formed with a 4-point scale: always, frequently, occasionally, and never. The questionnaire was delivered to emergency medicine physicians (the assistants, emergency medicine specialists, and emergency medicine lecturers) by face-to-face or e-mail, and it was aimed to be completed by at least 200 emergency medicine physicians. E-mails were sent to approximately 900 physicians from different cities in Turkey, and 189 of the e-mailed physicians answered the questionnaires. Questionnaires were completed by 117 physicians face-to-face. Because 6 questionnaires were discontinued, they were not included in the study. Physicians working in private hospitals were excluded because financial concerns may play a more significant role in treating patients.

No informed consent was obtained because the study participants were not patients.

Questionnaire

The socio-demographic questions were physicians' age, gender, the city they work in, how many years they have been physicians, how many years they have been working in the emergency department, and their job titles.

Questions were formed to evaluate the positive defensive medicine practices: asking for additional examinations when not necessary, prescribing extra medication, asking for consultation when not necessary, hospitalization without indication, explaining medical practices in more detail to patients and their relatives, keeping records in more detail, and giving more importance to informed consent forms [8]. Questions were prepared to evaluate the negative defensive medicine practices: avoiding patients with a high probability of litigation, avoiding treatments with a possibility of complications, and referral of high-risk patients although treatment is available [8]. Upon the physicians' request to explain the definition of "defensive medicine" in the pretest, we conducted a survey to check the intelligibility of the survey questions we prepared. The definition of defensive medicine has been added before the questionnaire questions.

Questions were prepared to ask whether professional liability insurance creates a sense of security in physicians and the role of the relatives of patients in medical applications.

Ethical Approval

İstanbul Medeniyet University Göztepe Training and Research Hospital Ethics Committee approval was obtained (decision no: 0005, date: 25.06.2013).

Statistical Analysis

SPSS 16.0 for Windows computer programs was used. Chi-square and p values were shown in the analysis tables using the chi-square test in statistical analysis. $p<0.05$ was considered significant for the chi-square test.

Results

The questionnaire was completed by 300 physicians (187 male). Two hundred and seven were younger than 35 years of age (69%). One hundred and eighty-two were assistant doctors (60.7%), 95 were specialist doctors (31.7%), and 23 were medicine lecturers (7.6%). A total of 156 physicians were studying at an education and research hospital, 105 at a university hospital, and 39 at a local government hospital. The daily patient visit number was 296 at a university hospital, 798 at education and research hospital, and 569 at local government hospital. Female physicians had a mean of 5.3 years of working time in the emergency department (total working time as a physician: 7.2 years) and male physicians had a mean of 5.9 years (total working time as a physician: 8 years) (no statistical differences were shown). We asked if they had experienced a lawsuit against you. A total of 63 physicians (43 male) answered yes (21.1%). We also asked do you think that there has been more malpractise lawsuits recently. Ninety-eight percent answered yes. Ninety-five percent of physicians had insurance against lawsuits.

We evaluated the physicians for positive and negative defensive medicine practices. We asked if they requested more examinations to protect themselves from medical malpractise claims. One hundred and sixty-nine (56.7%) physicians answered always and frequently, and 129 (43.3%) answered occasionally and never (Table 1). Physicians with a working time of less than 10 years, assistant doctors, and physicians working at education and research hospitals had higher scores ($p<0.05$) compared to others. There was no statistical difference in terms of the physician's age, daily patient visit number, experience of lawsuits, and having medical insurance against lawsuits.

We asked if they requested more medical records to protect themselves from medical malpractise claims. A total of 141 (47.7%) physicians answered always, 118 (39.7%) answered frequently, 34 (11.4%) answered occasionally, and 4 (1.3%) answered newer. Always and were frequently answered higher in medical lecturers ($p<0.05$). There was no statistical difference in terms of other factors.

The physicians participating in the study were asked whether they would need diagnostic imaging even though they thought it was unnecessary. Twenty-three (7.7%) physicians answered always, 109 (36.5%) answered frequently, 157 (54.3%) answered occasionally, and 9 (3%) answered newerquestions. Occasionally and newer were answered higher in women physicians, physicians with a working time of 10 years or longer, specialists, and medical lecturers ($p<0.05$).

The physicians participating in the study were asked whether they would need a consultation even though they thought it was unnecessary to protect themselves from medical malpractise claims. Ninety-seven (32.2%) physicians answered always and frequently (Table 2). The specialists had more never/occasionally answers than the assistant doctors. There was no statistical difference in terms of the physician's age, gender, daily patient visit number, working period, experience of lawsuits, and having medical insurance against lawsuits.

Physicians participating in the study were asked whether they were writing more drugs to protect themselves from medical malpractise claims. Only 32 physicians (10.7%) answered always and frequently. Male physicians and physicians who were older than 35 years had higher newer/occasional answers ($p<0.05$). There was no statistical difference in terms of other factors.

Physicians participating in the study were asked whether they were referring patients at risk to avoid the possibility of medical error. Only fifty-one (17%) participants answered always and frequently (Table 3). Female physicians and physicians working at the university hospital had higher newer/occasional answers ($p<0.05$). There was no statistical difference in terms of other factors.

Physicians participating in the study were asked whether they were prolonging their emergency department stay to avoid the possibility of medical errors. One hundred and forty (47.2%) participants answered always and frequently.

Physicians who participated in the study were asked whether they were avoiding treatments with the possibility of complications. Only 52 (%17.3) had answered always and frequently. Female physicians had higher newer/occasional scores ($p<0.05$). There was no statistical difference in terms of other factors.

Physicians who participated in the study were asked whether they avoided patients with a high probability of litigation. Fifty-two (17.3%) participants answered always and frequently. Female physicians had higher newer/occasional scores ($p<0.05$). There was no statistical difference in terms of other factors.

Physicians who participated in the study were asked whether there was pressure from the relatives of the patients to turn to defensive medicine. Two hundred and forty-two (80.9%) physicians answered yes, 25 (8.3%) answered no, and 32 (10.7%) answered undecided (Table 4). If relatives of patients are more inquisitive and more threatening, physicians practice their profession under pressure and act more defensively to protect themselves. Assistant doctors had higher yes scores than others ($p<0.05$).

Table 1. Do you want additional examination without an indication?

	Male		Female	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
Occasionally	71	8	53	47
Frequently	73	40	45	40
Always	37	20	14	12
Never	4	2	1	1
Total	185	100	113	100

Table 2. Do you want a consultation even though you think it is not necessary to protect yourself from medical malpractice claims?

	Male		Female	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
Occasionally	109	59	73	65
Frequently	52	28	29	26
Always	13	7	3	3
Never	10	6	7	6
Total	184	100	112	100

Physicians were asked if they had a second chance and if they would choose emergency medicine again. Female physician's answers were; 46 (41%) yes, 31 (27%) no, 36 (32%) undecided; male physician's answers were; 75 (40%) yes, 74 (40%) no, 37 (20%) undecided. There was a statistically significant difference according to gender. If the answer is no, the physicians were asked why emergency medicine is a high-risk specialty. Female physician's answers were; 51 (85%) yes, 8 (13%) no, and 1 (2%) undecided, male physician's answers were; 88 (89%) yes, 7 (%) no, 4 (4%) undecided, and there was no difference in terms of gender. Physicians working for less than 10 years had higher yes scores compared to those working for longer periods. There was no statistical difference in terms of other factors.

Discussion

Defensive medicine is a phenomenon affecting diagnostic-therapeutic areas, leading to a waste of human, organizational, and economical resources. It includes both avoidance behavior when the physician is dealing with high-risk procedures and excessive ordering of extra imaging, laboratory tests, and consultation [9,10]. Emergency medicine is known from high-risk specialties such as gynecology, orthopedics, and vascular surgery [11]. Physicians working in emergency medicine departments frequently use defensive medicine practices with the fear of being sued or violence [12]. Perea-Pérez et al. [12] evaluated defensive medicine in hospital emergency services in Spain and showed that 89.8% of physicians perform diagnostic tests that may not be necessary and 63% stated that they extend the stay in the emergency department. 91.3% of the physicians felt that they are under more legal pressure and they are conditioned under the threat of judicial claims. They declared that they did not feel protected by the structure and supported by the center's management [12].

In our study, 21% of the physicians experienced lawsuits. To avoid possible medical errors, physicians' most common method is to request additional examinations even though there is no indication. We showed that the rate of physicians who stated that they did not request an additional examination was only 1.6%; on the other hand, 98.4% of the physicians said that they requested an additional examination. Physicians with a working time of less than 10 years, assistant doctors, and physicians working at education and research hospitals had requested more additional examinations than others. The other methods used by the physicians participating in our study to protect themselves from possible medical errors were keeping more detailed records (87.4%), keeping the patient under observation for long hours (47.2%), asking for additional consultations (32.7%), avoiding treatments with high complications (17.3%), referring patients (17%), avoiding invasive procedures (11%), and prescribing extra medication (10.6%). We analyzed the factors affecting defensive medicine methods. Physicians studying for more than 10 years, female physicians, medical lecturers, and specialists requested less diagnostic imaging. Pressure from relatives is an important factor for assistant doctors. Female physicians tended to avoid treatments with a possibility of complications and avoid patients with a high probability of litigation. In a scoping review, the factors influencing defensive medicine were analyzed, and social media, patients adopting a consumer attitude, healthcare system-based working conditions, and physician's tolerance for uncertainty were the main factors [13].

Physicians participating in the study were asked the following question: do you think defensive medicine practices have increased? Ninety percent of emergency medicine physicians thought defensive medicine practices had increased. This finding was consistent with the study by Studdert et al. [14]. They

Table 3. Do you struggle to refer patients at risk to avoid the possibility of medical error?

	Male		Female	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Occasionally	89	48	50	45
Never	57	30	51	45
Frequently	31	17	8	7
Always	9	5	3	3
Total	186	100	112	100

Table 4. Do you think that there is pressure from the relatives of the patients to turn to defensive medicine?

	Male		Female	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Yes	150	81	92	81
Undecided	21	11	11	10
No	15	8	10	9
Total	186	100	113	100

performed a mail survey of six specialties at high risk of litigation (emergency medicine, general surgery, orthopedic surgery, neurosurgery, obstetrics/gynecology, and radiology); the rate of asking for more tests and referrals was 92%. Among practitioners, the most recent defensive act was using imaging technology in clinically unnecessary circumstances [14].

In contrast to our results, Waxman et al. [15] evaluated the effect of malpractise reform on emergency department care in Texas, Georgia, and South Caroline and demonstrated no reduction in the intensity of care, rates of computed tomography or magnetic resonance imaging use, or per-visit emergency department charges (except Texas).

Our study results show that emergency medicine physicians apply positive defensive medicine practices more than negative defensive medicine practices. The behavior patterns of patient relatives and legal cases are more critical factors for emergency medicine physicians to turn to defensive medicine. Physicians resort to defensive practices to protect themselves from the fear of being sued or exposed to violence while performing their profession, and this makes it challenging to perform life-saving interventions during the critical hours of the patient, increasing the workload of emergency medicine physicians, and may cause disruptions in the functioning of the emergency service. A physician's perception of malpractise generally overestimates their own risk. To decrease defensive medicine, detailed information about malpractise laws during medical schools and assistant doctor education, clinical practice guidelines, malpractise-specific courts, and apology laws are potential remedies [16].

Study Limitations

Because it was a survey study, the lack of knowledge of the interviewer or the respondent was a limitation of this study.

Conclusion

It has been observed that defensive medicine concerns are an important problem for emergency department physicians. Younger physicians, assistant doctors, and physicians with shorter working periods have an increased risk of performing defensive medicine. Approximately half of the emergency department physicians want to change their specialty due to hard working conditions and fear of lawsuits.

Ethics

Ethics Committee Approval: This study was conducted between 12.06.2013 and 12.07.2013 at the İstanbul Medeniyet University Göztepe Training and Research Hospital Ethics Committee (decision no: 0005, date: 25.06.2013).

Informed Consent: No informed consent was obtained because the study participants were not patients.

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Authorship Contributions

Surgical and Medical Practices: A.D., O.İ., Concept: A.D., O.İ., A.O., Design: A.D., O.İ., A.O., Data Collection or Processing: O.İ., Analysis or Interpretation: O.İ., A.O., Literature Search: A.D., O.İ., Writing: A.D., O.İ.

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