

## Evaluation of cases aged 0-18 years referred to the Council of Forensic Medicine with the claim of medical malpractice

Nesrin Özkaya, Rıza Yılmaz\*, Halit Özkaya\*\*, Muhammet Can\*\*\*, Işıl Pakiş\*\*\*\*, Ali Yıldırım\*\*\*\*\*, İmdat Elmas\*\*\*\*\*

GATA Haydarpaşa Education Hospital, İstanbul, Turkey

\*Karaelmas University, Medical Faculty, Department of Forensic Medicine, Zonguldak, Turkey

\*\*Pediatrician, GATA Haydarpaşa Education Hospital İstanbul, Turkey

\*\*\*Balıkesir University, Medical Faculty, Department of Forensic Medicine, Balıkesir Turkey

\*\*\*\*Acıbadem University Medical Faculty, Department of Forensic Medicine, İstanbul, Turkey

\*\*\*\*\*Gaziosmanpaşa University Medical Faculty, Department of Forensic Medicine, Tokat, Turkey

\*\*\*\*\*İstanbul University, Institute of Forensic Medicine, İstanbul, Turkey

### Summary

**Aim:** The objective of this study was to evaluate lawsuits filed against healthcare professionals who performed medical interventions on subjects aged between 0-18 years with medical malpractice claim from the perspective of forensic medicine.

**Material and Method:** Medical malpractice claims filed against healthcare professionals (n=378) submitted to The Council of Forensic Medicine during the years 2002–2006 by the courts to obtain expert opinion which were also evaluated by the 3. Specialty Board were examined retrospectively. The cases were evaluated in terms of health workers who were complained about, healthcare institutions engaged with a lawsuit, departments of health institutions which were complained about, the damages arising in subjects defined as malpractice cases and processes of medical malpractice cases.

**Results:** Among the healthcare institutions subjected to malpractice claims, state hospitals ranked first (52.7%) followed by private hospitals (16.4%). Pediatricians took the lead among healthcare professionals accused of malpractice followed by general practitioners. 219 cases of malpractice (57.9 %) suffered death. Opinions in favour of or against medical malpractice were expressed in 28.8% (n=109) and 51.6 % (n=195) of the cases, respectively.

**Conclusions:** Because of increasing medical malpractices in the age group of 0-18 years in our country, the group of health professionals, especially pediatricians and practitioners should be more careful and attentive in terms of diagnosis, treatment, care and referral of patients. Moreover, patients, their relatives and intimates should be provided with detailed information about the complications and adverse effects of the recommended treatment using eligible words. (*Turk Arch Ped* 2011; 46: 144-50)

**Key words:** Forensic medicine, malpractice, pediatrics

### Introduction

Malpractice is defined as the deviation of the disease from its normal course including all conditions with a wide range from late improvement to death as a result of the recommendations and/or practices by physicians and nurses who provide healthcare service and healthcare

workers including physiotherapists, psychologists or dietitians who are authorized for intervention (1,2).

Factors leading to malpractice form a multifactorial problem including responsibilities of healthcare workers and healthcare system. In malpractice, many factors increasing the risk of errors including human factor, environmental factor and medical devices act in a nested pattern (3).

In practices directed to children, any kind of investigation and treatment is difficult and the possibility of carrying the outcome of any damage caused by malpractice for a lifetime is high. Especially, in children below the age of two, malpractice is rather common. A large proportion of errors are related to prescription and especially wrong dosage (2,3). Therefore, a different approach considering the developmental stages of children is required in practices directed to children. This causes difficulties for a physician while doing his/her job (2).

In this study, subjects in the 0-18 age group who were sent to the 3. Specialty Board of The Council of Forensic Medicine for evaluation of malpractice by the prosecution office or law court were examined retrospectively.

This study aimed to provide feedback from all healthcare workers who perform medical intervention on children of this age group and to discuss the preventive measures which could be taken by evaluating lawsuits filed against healthcare professionals (physicians, nurses and other healthcare workers) who performed medical intervention from the perspective of forensic medicine.

**Material and Method**

The Council of Forensic Medicine which serves as a legal expert in justice reports scientific and technical expert opinion on subjects related to forensic medicine sent by law courts and judicatures and prosecution offices (4). This study which was prepared deriving from subjects in litigious question was planned to be a cross-sectional, definitive and analytic study. In a period of 4 years (2002-2006), 1458 subjects who were evaluated in terms of "malpractice" by the 3. Specialty Board of The Council of Forensic Medicine were examined retrospectively and 378 children in the age group of 0-18 were included in the study.

Expert opinion reports evaluating the compatibility of practices of healthcare workers with medical rules were screened and the subjects were noted in the data collection form. Afterwards, statistical analysis was done using SPSS for Windows 15.0 program. When evaluating study data, chi-square test was used for single-sample plot and multi-sample plot for comparisons of qualitative data in addition to statistical methods (mean, standard deviation, fre-

quency, ratio). Results were evaluated with 95% confidence interval and a p value of <0.05 was considered to be significant.

**Results**

1458 subjects were evaluated by the 3. Specialty Board of The Council of Forensic Medicine between 2002 and 2006 with a claim of malpractice. 378 pediatric subjects in the age group of 0-18 years of these 1458 subjects were evaluated in this study. 258 (68.2%) of the subjects were male and 116 (30.7%) were female. Gender was not reported in four subjects (1.1%) (Diagram 1).

When malpractice cases were evaluated by years, a marked increase in the number of malpractice claims was observed since 2004. Distribution of cases by years is shown in Diagram 2.

There was no statistically significant difference between the increase observed since 2004 and gender distribution by years (p>0.05). When significance was evaluated ignoring the year of 2002 in terms of gender and four subjects whose gender was not known, no significant relation was found between the genders of the patients (p>0.05) (Table 1).

When the institutions proceeded were examined, state hospitals were found to be ranked first. After the year of 2005 hospitals of Social Security Institution (SSK) were handed over to the Ministry of Health and these hospitals became state hospitals. When we included these cases, it was found that 52.7% of the cases were filed against state hospitals. This was followed by special hospitals (16.4) and university hospitals (9.3%) (Table 2).

When the sections of healthcare institutions which were complained about in the cases in question were evaluated, the largest proportion was found to be arised from the emergency department (19%). This was followed by the operation room and the delivery room (Diagram 3).

**Table 1: Distribution of the cases by age and years**

Age/ Years	2002	2003	2004	2005	2006
0-1	0 (0.0%)	1 (9.1%)	38 (44.7%)	69 (51.9%)	74(52.1%)
2-4	0 (0.0%)	3 (27.3%)	17(20.0%)	26(19.5%)	16(11.3%)
5-7	3 (42.9%)	2 (18.2%)	8(9.4%)	12(9.0%)	17(12.0%)
8-13	2 (28.6%)	2 (18.2%)	12(14.1%)	19(14.3%)	18(12.7%)
14-18	2 (28.6%)	3 (27.3%)	10(11.8%)	7(5.3%)	17(12.0%)

χ<sup>2</sup>:31.84 p:0.010\*

**Table 2: Distribution of malpractice cases by site**

Site of medical practice	n	%
Public hospital	150	39.7
University hospital	35	9.3
Private hospital	62	16.4
Private clinic/Healthcare center	16	4.2
Private office	8	2.1
Home	8	2.1
Social security hospital*	49	13.0
Health care center	28	7.4
Military hospital	3	0.8
Other	9	2.4
Unknown	10	2.6
Total	378	100

\*Since Social Security Hospitals were handed over to the Ministry of Health after 2005, the data of Social security hospitals are included in the data of public hospitals.

When the healthcare providers who performed the medical practices were evaluated, 380 of a total of 459 healthcare workers were physicians, 11 were dentists, 64 were nurse-midwife and four were delivery team members. The distribution of 380 physicians claimed of malpractice by specialties are shown in Table 3.

When the cases were examined in terms of harms which occurred, death was found in 219 of 378 cases (57.9%). Among the 159 surviving cases, 113 had (29.9%) a sequela (focal neuropathy like drop foot deformity, encephalitis, extremity amputation, burn scar, etc.). In 46 cases (12.4%) no medical harm was determined. An autopsy was performed to determine the reason for death in 161 of 219 cases (73%) which ended up with death. While the reason for death could be determined in 120 (74.5%) of the 161 cases which were undergone an autopsy, the reason for death could not be determined in 41 cases (25.4%). Although an autopsy was not performed in 58 cases (27%) which ended up with death, the disease leading to death could be determined by clinical and laboratory findings and reevaluation of the graphies found in the file in 42 cases (72.4%) and in 16 cases (26.6%) the reason for death could not be determined.

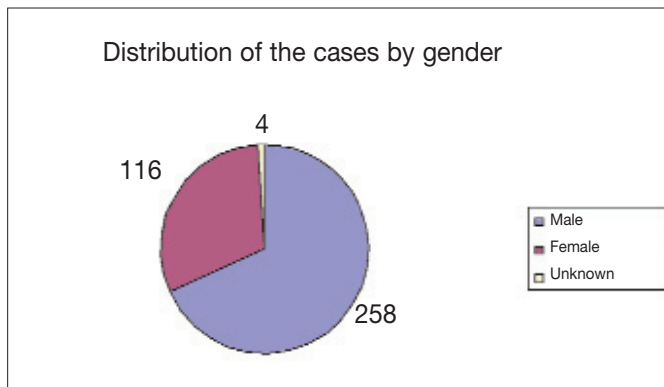
A diagnosis was made in 151 (94.9%) of 159 cases who developed adverse outcomes excluding death and in whom no medical harm occurred. A diagnosis was made in 313 of 378 cases (82.8%) who were included in the study and no diagnosis could be made in 65 cases (17.2%).

A decision was made in 378 cases. In 195 of them (51.6%), the practices were considered to be compatible

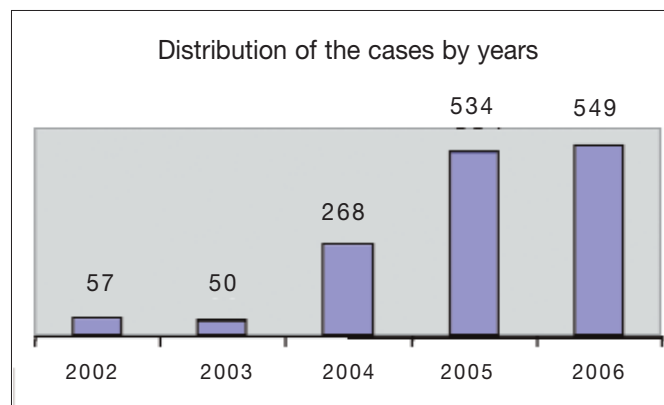
with medical rules and in 109 cases (28.8%) a view in favor of malpractice was reported. In 74 cases (19.6%), no decision could be made about malpractice. When cases about whom no view about malpractice could be reported were examined, the reason for not reporting a view in 57 cases was the fact that no relationship could be found between medical practice and the harm which occurred because the reason for death could not be determined. In 17 cases the reason for not reporting a view was lack of medical record.

When the practices which were considered to be malpractice in 109 cases were examined, inadequate diagnosis was found in 59 cases (54.1%) and inadequate treatment and follow-up was found in 42 cases (38.5%). When the other errors were examined, burn caused by uncontrolled warming during treatment was found in one case, cauter burn during operation was found in one case, forgetting gauze pad in the operation area was found in two cases, forgetting clamp in the operation area was found in one case, cutting of the baby's face with lancet during cesarean section was found in one case, delay of screening of retinopathy of prematurity (RO) in one case and lack of phenylketonuria screening because of inadequate personnel in a city where screening is performed was found in one case.

Table 3. Distribution of specialties of physicians with a claim of malpractice		
	Total	% *
Pediatrician	97	25.53
Gynecologist and obstetrician	75	19.74
General practitioner	70	18.42
Orthopaedist	33	8.68
General surgeon	23	6.05
Anaesthesist	16	4.21
Otolaryngologist	11	2.90
Neurosurgeon	11	2.90
Ophthalmologist	9	2.37
Cardiologist	8	2.11
Radiologist	7	1.84
Pediatric surgeon	5	1.31
Cardiovascular surgeon	5	1.31
Internal diseases specialist	4	1.05
Urologist	4	1.05
Plastic surgeon	2	0.53
Total	380	100



Graphic 1: Distribution of the cases by gender

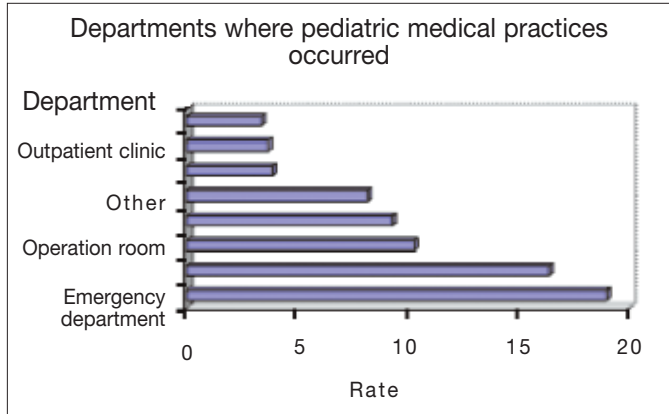


Graphic 2: Distribution of the cases by years

Evaluation of cases in terms of malpractice in 0-18 year-old children are shown in Table 4 by specialties and malpractice status.

Reasons of malpractice in a total of 21 cases who were considered to be exposed to malpractice by pediatricians are shown in Table 5.

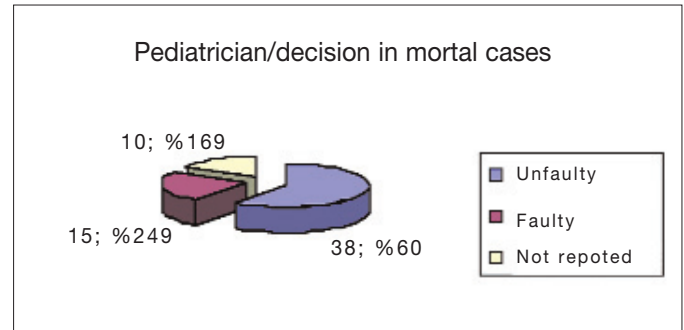
Among judgements of 159 surviving cases examined between 2002 and 2006, decrease in rates of malpractice



Graphic 3. Departments where malpractice claims occurred

and increase in non-malpractice since 2004 showed significant difference ( $p<0.05$ ) (Table 6).

Among 63 fatal cases related to a pediatrician, the pediatrician was found to be faulty in 15 cases (24%), unfaulty in 38 cases (60%) and was not reported to be faulty or unfaulty in 10 cases (16%). According to the malpractice status of the pediatrician statistically significant difference was found between judgements in fatal cases ( $p<0,01$ ). The rate of non-malpractice was found to be higher compared to the others (Graphic 4).



Graphic 4. Distribution of malpractice states of pediatricians in 63 autopsy cases

Table 4: Distribution of faultiness of physicians who were judged with malpractice					
	Faulty	Unfaulty	Unreported	Total	% *
Pediatrician	21 (21.6%)	61 (62.9%)	15 (15.5%)	97 (100%)	21.13
Gynecologist and obstetrician	14 (18.7%)	51 (68.0%)	10 (13.3%)	75 (100%)	16.34
General practitioner	13 (18.6%)	45 (64.3%)	12 (17.1%)	70 (100%)	15.25
Nurse-midwife	14(21.9%)	40 (62.5%)	10 (15.6%)	64 (100%)	13.94
Orthopaedist	13 (39.4%)	15(45.5%)	5 (15.2%)	33 (100%)	7.19
General surgeon	5 (21.7%)	14 (60.9%)	4 (17.4%)	23 (100%)	5.01
Anesthesist	4 (25%)	12 (75.0%)	-	16 (100%)	3.49
Otolaryngologist	4 (36.4%)	6 (54.5%)	1 (9.1%)	11 (100%)	2.40
Neurosurgeon	3 (27.3%)	6 (54.5%)	2 (18.2%)	11 (100%)	2.40
Dentist	3 (27.8%)	7 (63.6%)	1 (9.1%)	11 (100%)	2.40
Ophthalmologist	-	9 (100%)	-	9 (100%)	1.96
Cardiologist	1 (12.56%)	4 (50.0%)	3 (37.5%)	8 (100%)	1.74
Radiologist	1 (14.3%)	5 (71.4%)	1 (14.3%)	7 (100%)	1.53
Pediatric surgeon	4 (80%)	1 (20.0%)	-	5 (100%)	1.09
Cardiovascular surgeon	1 (20%)	3 (60%)	1 (20%)	5 (100%)	1.09
Delivery team	3 (75%)	1 (25%)	-	4 (100%)	0.87
Internal diseases specialist	2 (50%)	1 (25%)	1 (25%)	4 (100%)	0.87
Urologist	1 (25%)	3 (75%)	-	4 (100%)	0.87
Plastic surgeon	1 (50%)	-	1 (50%)	2 (100%)	0.44
TOTAL	459	100*			

\*Oran toplam 459 olgu üzerinden hesaplanmıştır

## Discussion

Currently, the number of malpractice cases is increasing gradually (3.6-9). In this study, a marked increase in the number of cases with a claim of malpractice since the year of 2004 was found. The number of malpractice cases were 57 and 50 in 2002 and 2003, respectively. The same number was 268 in 2004, 534 in 2005 and 549 in 2006. The claims of malpractice which increased since the year of 2004 is related to the problems experienced in adapting to the changing health regulations (patient rights code, Turkish Criminal Law with the number 5237 accepted in 2004) and the process which is different from the authoritative structure of the traditional patient-physician relationship of healthcare workers (complaint line, right to select physician etc.). In addition, it is debated that market-centered "transformation in healthcare system" has put patient-physician relationship into an unfavorable status for healthcare workers and differentiated the balance of thrust (10-13).

Legal validity of the active status based on an agreement between the patient and the physician depends on the association of the right and task of the physician to perform and practice medical profession

with the consent of the patient. In private law, the relationship between the patient and the physician is based on an agreement (power of attorney). To establish an agreement the first condition is the patient's consent and the second condition is the physicians acceptance based on his/her right to perform and practice medical profession. After the agreement is established, the physician's actions and assistance will remain in accordance with the law in certain limits. The main aspect of the physician's responsibility because of treatment is the fact that responsibility arises from the agreement. However, the only source of the physician's responsibility is not the agreement. It is ordinary that another relationship is present between the harmed person and the physician which is not based on the agreement (14).

In studies performed, healthcare workers who have a better relationship with the patient, who give the patients required information about the disease and who act carefully about receiving informed consent were found to be complained about by patients with a 55% lower rate (15). Yorulmaz (16) found a 42% increase in the number of cases between 1999 and 2003 in his study performed on files accepted by Istanbul Medical Chamber Medical Practice Office including the period between 1999 and 2003. In the study performed by Pakiř et al. (17) including the period between 2001 and 2005, an increase of 160% was reported. The high rate of increase (104%) found in this study since 2004 indicates that a marked increase in the number of claims about malpractice has occurred in our country in recent years.

In this study, a judgement in favor of non-malpractice was made in 60.3% of cases. In 15.4%, the judgement was not known and in 23.8% a judgement in favor of malpractice was made (Graphy 4). This shows that in 3/4 of the cases the claim of malpractice was untrue. The accuracies of the claims about physicians in different studies were compared, since the number of such studies was limited. The rate of untrue claims was found to be 69.2% in Bükten's study (17) and 68% in Pakiř's study (18). This rate was reported to be 46% by Lynch et al.(19). The cases about these untrue claims cause a long and difficult process in terms of physicians even if they are cleaned. Physicians do not take the initiative adequately, since they are afraid of making errors and may experience various psychological problems during the process of the lawsuit.

Reason of fault*	Faulty**
Lack/inadequacy of caution in follow up	3
Deficient examination/inattentive examination	2
Not requesting consultation	5
Not referring to the proper healthcare institution	3
Not performing necessary investigations/not ordering necessary graphies	1
Sending a patient who needs to be hospitalized to home	4
Not making the right diagnosis/not giving the right treatment	1
Not responding a call timely	1
Lack of experience/inadequacy in profession	1
TOTAL	21***

\*Reasons of faults noted in expert view have been considered.

\*\* The rate of faultiness evaluated for the same reason is given.

\*\*\* The rate of faultiness on a total of 97 cases evaluated for the pediatrician's faultiness is given

Decision in surviving cases	Years					Test Value
	2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	
Faulty	0 (0%)	2 (50.0%)	15 (46.9%)	14 (28.0%)	10 (14.1%)	$\chi^2$ :16.95 p:0.031*
Unfaulty	2 (100%)	2 (50.0%)	15 (46.9%)	29 (58.0%)	46 (64.8%)	
Not reported	0 (0%)	0 (0.0%)	2 (6.3%)	7 (14.0%)	15 (21.1%)	

In recent years, more persistent and rapid solutions have been investigated because of flaws experienced during healthcare service. Some legal arrangements have been made to evaluate the imperfect healthcare workers more efficiently and new precautions have become a current issue. While patient rights are protected by patients' rights regulation, arrangements related to healthcare workers have fallen far behind. It can be predicted that new and aggravating conditions will cause physicians to face with the responsibility of penalty and compensation in many cases. In Turkey, no physician can see himself/herself far from malpractice cases. Not to face such undesirable conditions is only possible with full knowledge of authorizations and responsibilities related to medical profession and legal grounds of these authorizations and responsibilities and with reflection of these in practice. Therefore, the importance of informing physicians on this subject is increasing day by day (2, 16, 20-23).

In this study, the largest part of the cases was composed of subjects who were in the perinatal period (48.2%), when age groups were evaluated. This data shows that practices resulting in stillbirth and neonatal death have a significant part among malpractice claims in the age group of 0-18 years. The stress experienced by families during a sensitive period by the loss of their babies and unknown cause of death in most cases lead them to enter a lawsuit against physicians (24).

While the law of "malpractice" which is a draft law for the time being and has not become law yet is being discussed, speciality areas should update their special efforts on malpractice (25). Because of limited number of studies, the age groups related to problems were compared in different studies; 47% of the cases were composed of children below the age of two in the study performed by Selbst (26) in cases treated during childhood with a malpractice claim. In a study performed by Kain (27), the rate of children below the age of one was reported to be 43%. In this study, the rate of children of 0-1 years old with a claim of malpractice to the children of 0-18 years old was found to be 48,1% and the rate of children of 0-1 years old to all cases was found to be 12.5%. Therefore, medical treatment and follow-up in this age group should be performed with more caution and these children should be evaluated by pediatricians, if possible.

The total number of cases resulting in death was 219 in this study (73%). This rate was found to range between 18% and 28.1% in different studies (26-28). Considering that 83 (76.1%) of 109 cases judged as malpractice resulted in death, it was suggested high mortality rates in our cases depended on the fact that cases resulting in death were a subject of lawsuit with a higher rate.

19% of cases of malpractice in the study were related to physician-patient relationship in the emergency department. Cases of emergency departments carry a higher risk in terms of working pace of physicians and interventions performed on patients. Most of these cases where physicians should urgently take the initiative are in

a life-threatening condition. The frequency of error is very high, since patients present to the emergency department with very different findings and these findings are observed in a wide range (29,30).

In the study, a lawsuit was entered against 70 general practitioners with a claim of malpractice and 18.6% of these were judged to be erroneous. In practice, general practitioners can face with lawsuits of malpractice because of treating pediatric patients as well as pediatricians. Therefore, these data should be carefully evaluated also by general practitioners. In general practitioner's practice, patients are generally followed up for simple, short-term diseases. However, general practitioners provide continuous care also for patients who have complex requirements, who have a diagnosis of severe disease, who seek for response for assistance in a life-threatening condition and who have chronic diseases receiving preventive care. For general practitioners, in-service education sessions should be performed on the most commonly seen errors in practice especially in pediatric cases.

In evaluation by task areas, malpractice was observed to be primarily related to physicians (Table 5). However, judgements of malpractice were also made for other healthcare workers including midwives, nurses, operation room technicians and pharmacists. Therefore, not only physicians, but also other assistant healthcare workers including midwives and nurses should have a knowledge and clarification about their responsibilities.

Another important point in terms of physicians is appropriate recording. If the disagreement between parts becomes a subject of a lawsuit, the robustness of corporeal evidence gains importance. Adequate data supporting the diagnosis and action of the physician will be helpful for defense and lack of important data will complicate defense (18,31,32). In our study, it was reported that a judgement for malpractice could not be made because of lack of medical data in a part of the cases.

In the study performed by Büken (18) in the Council of Forensic Medicine, 40.1% of the data related to gynecology and obstetrics were derived from public hospitals, 18,6% were derived from private hospitals and 14,9% were derived Social Security hospitals. In another study performed in the same institution, Baydar (33) found that 48.15% of orthopaedic cases were treated in public hospitals, 20.37% were treated in Social Security hospitals and 11,11% were treated in private hospitals. In our study, 39.7% of the pediatric patients with a claim of malpractice were treated in public hospitals, 16,4% were treated in private hospitals and 13% were treated in Social Security hospitals and the lowest rate of malpractice claims derived from military hospitals (Table 2). When public hospitals and Social Security hospitals are evaluated together, this rate is found increase to 52.7%. Since the number of patients presenting to public and Social Security hospitals is rather higher compared to other hospitals, the number of patients per physician is higher and the time a physician spends for his/her patient is shorter compared to other

hospitals. Thus, this increases the rate of error. We think that the high rate of malpractice claims deriving from private hospitals is related to the tendency of patients to enter a lawsuit against their physicians because they have higher expectations when they pay money for their treatment.

Conclusively, files of malpractice have increased in recent years. Pediatricians and general practitioners compose the most commonly accused group and they receive penalty for malpractice. Malpractice is observed in public hospitals with the highest rate and this is probably related to the high number of patients. Considering that healthcare workers in emergency departments are accused with the highest rate, it is clear that physicians should be more careful and should request more consultations. In addition, meticulous examination, treatment and follow up should be performed, if the patient is hospitalized and more caution on the patient's health should be exercised during referral, if the patient needs to be referred to another healthcare institution.

**Conflict of interest: None declared**

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