

Malpractice lawsuits and change in work in Japanese surgeons

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ABSTRACT

Background:

The risk of lawsuits causes surgeons stress and is associated with defensive medicine. It is possible that some surgeons withdraw from surgery due to malpractice lawsuits, although the actual impact of lawsuits is not clear. This study evaluated changes in work and medical practices involved in lawsuits, as well as support they receive.

Materials and methods:

A total of 115 surgeons who had been involved in lawsuits in Japan were eligible to participate. Participants were surveyed about changes in work due to lawsuits, the influence of lawsuits on medical care, defensive medicine, and their opinions on support they received.

Results:

A total of 30 surveys were collected. Six (21%) surgeons changed work; five had lost their lawsuits and the remaining had settlement. Surgeons felt that lawsuit imposed a time burden (100%) and caused emotional strain (96%). Surgeons made a number of conscious changes to their medical care after lawsuit, including over care (27%) and a hesitation to use high-risk treatments (39%). They had positive opinions of support they received from legal counsel (89%), hospital director (73%), supervisors (65%), and

colleagues (57%). Surgeons who changed work were significantly more likely to engage in defensive medicine, including over care and hesitation, than were surgeons who had not changed work. Support from legal counsel was negatively correlated with over care and hesitation.

Conclusions:

Given the significant influence of lawsuits on surgeons' practice, medical institutions should provide support to surgeons. Future research is needed to confirm whether legal counsel may prevent defensive medicine.

Keywords: Surgeons; Malpractice lawsuits; Defensive medicine; Support; Legal Counsel

1. Introduction

There is concern that the trend toward malpractice lawsuits is leading to defensive medical practices; this refers to how physicians order tests or procedures solely to protect themselves from the risk of lawsuits [1]. Malpractice lawsuit risk influences physicians' behaviors, especially physicians in high-risk surgical specialties [2,3]. Defensive medicine is problematic for surgeons in malpractice environments because it makes surgeons order more, often costly, tests and avoid high-risk patients [4].

A recent large-scale research project conducted among surgeons who had actually been involved in a lawsuit showed that 25% of these surgeons had been involved in medical malpractice litigation in the past two years alone, and that malpractice lawsuits often had profound personal consequences for them [5]. In a survey of 72 surgical oncologists at a single academic center, 71% of respondents had been named in a medical malpractice suit. More than half of those surgeons who had been sued reported the experience as "highly stressful" [6]. Experiencing a malpractice lawsuit is associated with distress, including burnout and depression; it has been pointed out that a bidirectional relationship between burnout and malpractice litigation is possible [5]. Professional burnout has also been linked to poor mental health and early retirement among physicians [7]. Several studies have indicated that professional burnout is correlated with increased medical errors among residents and surgeons in practice [8,9].

Healthcare professionals may be traumatized by events in which their patients suffer. In the year 2000, Wu introduced the term “second victim” to describe such situations [10]. Studies have reported insufficient support from organizations and colleagues for professionals experiencing adverse events in the medical field [11-14]. Second victim support is needed to care for physicians and to improve the quality of medical care.

In this environment, the excessive burden of medical malpractice lawsuits can lead to concerning defensive medicine practices and even withdrawal from surgical practice. However, little is known about the way malpractice lawsuits lead to personal changes of work in medical practice and how they influence medical care. This study examines surgeons’ reactions to malpractice lawsuits and to the support they receive from relevant parties in the medical institution. In addition, we investigate the association between the surgical practices and support among those who have experienced lawsuits.

2. Material and methods

2.1 Participants

Surgeons who were involved in medical malpractice lawsuits in Japan from 2003 to 2013 for medical events occurring since 1998 were eligible to participate. Court cases

were obtained from case databases that can be used to search for court cases in Japan, including “Hanrei Hisho” by LIC Corporation and “Lex-DB” by TKC Corporation. The following newspaper article databases were also used: “The Asahi Shimbun,” “The Nikkei,” and “Yomiuri Shimbun.” A total of 115 cases involving a surgeon and a named medical institution were found. However, the surgeons’ names could not be identified. We sent the survey to the medical institution where the surgeon was working at the time of the event. All 115 eligible surgeons received the survey by mail and were thereby invited to take part in the study.

Participation in this study was voluntary. By submitting the survey, surgeons indicated their agreement to participate in this research; this was explained on each survey.

The Fukuoka University Hospital Institutional Review Board approved this study.

2.2 Data Collection

A survey was sent to the medical institution where the 115 surgeons were working between January and September 2013. The survey asked for a description of the medical institution named in the lawsuit. Surgeons who had been involved in malpractice lawsuits completed the surveys on their own; alternatively, a staff member who knew the surgeon could answer as a proxy. We asked proxies to only answer the items to

which they were confident they knew the answer.

Data on lawsuits (e.g., claim amount, award amount) filed at the District Court were collected from judgments and newspaper articles referencing the name of the medical institution.

2.3 Survey Instrument

No existing surveys addressed our domains of interest at the time of this study. We therefore developed our own items with reference to relevant articles [4,5]. Items were tested informally with physician colleagues and refined prior to administration.

The survey included 26 questions, divided into six sections. The first section inquired about personal characteristics, age, and specialty. The next section asked about any changes in work after the event (e.g., changes specialty, resignation as a doctor, or resignation from the medical institution). The third section asked about the result of the malpractice lawsuit (lost lawsuit, judicial settlement, won) and the validity of the lawsuit result using a 5-point Likert scale (agree, somewhat agree, neutral, somewhat disagree, disagree). The fourth section asked respondents to rate their level of agreement that the malpractice suit was a burden (e.g., time burden, emotional strain) on a 5-point Likert scale. The fifth section asked about the support participants received (e.g., from the director of the hospital, legal counsel, department of medical safety, colleagues) on a

5-point Likert scale. The last section asked about surgeons' awareness of any changes in medical care, first in response to the event, and then in response to the result of the lawsuit (e.g., awareness of medical safety, over care for self-defense, hesitation to use high-risk treatments for self-defense) on a 5-point Likert scale.

2.4 Statistical Analysis

Means and standard deviations were calculated for continuous variables. Wilcoxon rank sum tests were used to test for differences between groups (e.g., result of lawsuit, changes in medical practice) in their responses to the scales. Spearman rank correlation coefficients were used to assess the degree of association between questionnaire scales (e.g., cooperation of participants, awareness of changes in medical care). Surveys with missing values were not excluded; all item-level responses were incorporated into the analysis.

SPSS Statistics Version 19.0 (SPSS Inc., Chicago, USA) was used for all analyses.

Statistical significance was set at a p-value of 0.05.

3. Result

We collected 30 surveys (response rate of 26%). Response rates of 26% were obtained for both lawsuits with a positive ruling (N = 38) and those with a negative ruling (N =

77) at district court. The response rates broken down by time period are 41% (11/27) for cases occurring since 2004 and 22% (19/88) for cases occurring between 1998 and 2003. Table 1 contains descriptive statistics for the entire sample. Gastroenterological surgery was the most common specialty, at 12 participants (40%). In addition, participants included multi-specialty and general surgeons, as well as one cardiologist who performed thoracic endovascular aortic repairs.

A total of 20 surveys were responded to by the surgeons themselves; the remaining 10 surveys were responded to by a proxy. Of the participants, 17 (57%) respondents completed all surveys. The response rate for individual surveys was 84% (range for each section: 75%–100%); for the surgeons themselves, the completion rate was 94% (84%–100%), and for proxies, 66% (56%–100%).

3.1 Lawsuit case details

Tables 1a and 1b contain personal characteristics about the surgeons and the lawsuits. The median claim amount per patient was 60 million yen (range: 3–194 million; USD equivalent of approximately 0.6 million, range: USD 0.03–1.9 million). The median time from the event to the judgment at District Court was 64 months (range: 33–129). Because we did not examine the entire period up to the end of the lawsuit, this

information is not presented herein.

A total of 27 surgeons (or their proxies) responded about the validity of the lawsuit result. The mean score (SD) for the validity of the lawsuit result was 4.91 (0.30) out of a maximum of 5 in cases in which the medical institution received a positive ruling (winning group; N = 11) and 2.06 (1.00) in the case of lost lawsuits and settlements (losing group; N = 16; $p < 0.01$).

3.2 Changes in work after an event

Table 2 contains the results for changes in work after an event. A total of 29 surgeons responded to this item. One surgeon quit operating after receiving the claims, one changed specialty in response to the lawsuit result, and one resigned as a doctor include a surgeon, physician and another medical specialist in response to an event. In all, 4 surgeons resigned from the medical institution where they were working at the time of the event. A total of 6 out of 29 (21%) responding surgeons changed their medical practice and/or institution (surgeons themselves N = 1, proxies N = 5). Of them, 5 cases had lost their lawsuit and the remaining one was a settlement.

3.3 Influence of lawsuit on medical care

Figure 1a presents the time burden experienced by the surgeon due to the amount of time spent dealing with the lawsuit and the emotional strain reported due to the lawsuit,

as well as the influence on subsequent medical care. All respondents (100%) indicated that they had been feeling the time burden of the lawsuit, and the vast majority (96%) indicated experiencing emotional strain. More than half of participants felt that the time burden or emotional strain of the lawsuit hindered their practice of medicine (60% and 64% respectively). In addition, slightly less than half complained of the difficulty of continuing in their role as a surgeon because of the time burden or emotional strain of the lawsuit (44% and 44%, respectively). There were no significant differences between the surgeons (N = 19 or 20) and proxies (N = 6).

The mean scores (SD) for the degree that the time burden hindered medical care in the winning and losing groups were 4.00 (1.00) and 3.38 (1.36), respectively. However, there was no significant difference between the two groups ($p = 0.27$). Comparing participants who changed their work (change group) and those who did not (no-change group), the hindrance of medical care due to emotional strain in the former group (N = 4) was significantly higher than in the latter group (N = 21), at 4.75 (0.50) and 3.38 (1.43), respectively ($p = 0.045$).

Figure 1b presents the conscious changes in medical care in response to the lawsuit result. Conscious changes after the event were as follows: awareness of medical safety (76%), over care (28%), hesitation to care for high-risk treatments (40%) and selection

of a medical procedure without contacting patients (4%). There were no significant differences between the surgeons (N = 19 or 20) and proxies (N = 6). There were no significant differences in these four variables between after the event and after the lawsuit ($p = 0.65, 0.78, 0.70,$ and $0.92,$ respectively).

There were no significant differences between the winning and losing groups in terms of conscious changes in medical care in response to the event or lawsuit result. Among those who reported a change in work, hesitating to use high-risk treatments (N = 4) was significantly higher than among those who reported no change (N = 21), at 4.25 (0.96) and 2.48 (1.29) respectively ($p = 0.023$). Similarly, there was a difference between the change and no-change groups in selecting a medical procedure without contacting the patient, at 3.00 (0.82) and 1.38 (0.74), respectively ($p = 0.002$).

3.4 Support of participants

Figure 2 presents the support participants received from their medical organizations. Nearly all respondents (89%) indicated positive opinions on whether they had received sufficient support from legal counsel in the lawsuit. The majority of participants also reported receiving support from the hospital staff in charge of the lawsuit (86%), the hospital director (73%), a supervisor in their department (65%), the department of medical safety management (63%), and colleagues in their department (57%). There

were no significant differences between the surgeons (N = 15–20) and proxies (N = 4–6).

There was no significant difference between the winning and losing groups or between the change and no change group in terms of the support participants received.

3.5 Correlation between conscious changes and support of participants

Correlations between a heightened awareness of medical safety, over care, hesitation to use high-risk treatments, selecting a medical practice without contact with the patient, and the support provided to participants are presented in Table 3. The support of the hospital director, department of medical safety management, and hospital staff in charge of the lawsuit were all correlated with awareness of medical safety in response to the event: $r = 0.43$ ($p = 0.044$), $r = 0.58$ ($p = 0.005$), and $r = 0.56$ ($p = 0.007$) respectively.

The support of legal counsel was negatively correlated with over care ($r = -0.42$, $p = 0.032$) and hesitating to use high-risk treatments ($r = -0.39$, $p = 0.048$).

4. Discussion

Our data show that 21% of surgeons who had been involved in lawsuits withdrew from surgery or their medical institution after the event, and that all of those who did so had lost their lawsuit or settled. The tendency toward defensive medicine was high among

the surgeons who changed their work. The support of legal counsel was negatively correlated with defensive medicine. However, as anticipated, the support of the hospital director was correlated with a heightened awareness of medical safety in response to the event. The role of legal counsel, the hospital director, and colleagues was not previously known, but has become clear in this survey.

The current acute shortage of surgeons is a problem [15]. The number of new Japanese surgeons has declined in the last 20 years because fewer young medical doctors are selecting surgery as their specialty; one of the main potential causes for the shortage of surgeons is the high risk of lawsuits (68%) according to a study by the Japan Surgical Society in 2011 (N = 985) [16]. The personal consequences of malpractice lawsuits, including position changes by the incumbent surgeon (e.g., departure from surgery) are poorly understood.

Malpractice lawsuits are often filed against surgeons. In the U.S., the proportion of physicians facing a claim each year is 19% in thoracic-cardiovascular surgery and 15% in general surgery [17]. In a survey of members of the Japan Surgical Society in 2012, 10% of respondents had experienced a lawsuit [18]. The number of legal cases related to surgical care has ranged from 123 to 145 over the past three years [19]. The threat of malpractice lawsuits has a negative impact on career satisfaction [5,20]. Research is

needed to support surgeons subjected to malpractice lawsuits.

Even though only 30 Japanese surgeons participated in this study, three incumbent surgeons who had actively practiced withdrew from the field after the lawsuit, and an additional four surgeons changed medical institutions.

Our finding is consistent with research showing that the frequency of malpractice is associated with surgeons' mental quality of life, burnout, and career satisfaction [7,9,21]. The pervasiveness of medical malpractice litigation has led to a further deterioration of the availability of surgeons. Countermeasures are needed to protect surgeons involved in negative events and subsequent lawsuits.

The average U.S. physician spends 50.7 months—or almost 11%—of an assumed forty-year career with an unresolved, open malpractice claim [22]. In the present study, almost all surgeons said that the lawsuits were a time burden and emotional strain. In addition, not only does the lawsuit pose a burden on the surgeon, legal actions also affect actual medical practices in about half of cases. Reducing the burden of litigation would be necessary for surgeons as well as patients who undergo surgical treatment. In one study of U.S. surgical oncologists, more than half of respondents said that the lawsuit was highly stressful [6]. It is known that higher levels of fatigue and distress are associated with medical errors [8,23]. Protecting surgeons faced with the burden of

lawsuits is also necessary to ensure patient safety.

Defensive medicine is a problem for surgeons in a malpractice environment [3,4,24]. In the present study, among surgeons actually involved in lawsuits, about one-third had been practicing defensive medicine, that is, practicing over care and hesitating to use high-risk treatments. Although it is not surprising that experiencing a malpractice lawsuit is associated with defensive medicine, there is scant data on this topic in the medical literature. This trend toward defensive medicine emerged after the event not only among those who lost the lawsuit, but also in cases in which the surgeon prevailed. In other words, surgeons began using defensive medicine even when there was no malpractice. Moreover, this tendency toward defensive medicine was high among surgeons who changed their work due to the lawsuit. Thus, preventing the practice of defensive medicine may be beneficial for surgeon protection.

Multiple recent studies on support for professionals following adverse events have reported insufficient support [12,13,15,25-27], negative attitudes regarding support from colleagues [11,14]. It was clear in this study that many surgeons felt supported by the medical institutions where they were working during the lawsuit. However, it was not clear whether there were any differences in support among those who changed their positions. Beneficial support would be expected to minimize work changes by surgeons

due to lawsuits.

Legal counsel may be useful to prevent defensive medicine. Our finding is consistent with research showing that legal situations were the most common reason (72%) that physicians were willing to seek support [28]. It is necessary for surgeons faced with lawsuits to clearly understand the legal situation. Interventions should also be provided by jurists to support surgeons from a legal standpoint. On the other hand, surgeons' heightened awareness of medical safety in response to the event was associated with support from the organization, hospital director, department of medical safety management, and hospital staff in charge of the lawsuit. In an environment where there is suitable organizational support, surgeons might be more aware of medical safety. In a recent study, one-to-one peer support by colleagues appears promising for surgeons experiencing a serious adverse patient event or traumatic personal event [28]. Unfortunately, in this study, it was not possible to identify a relationship between the reduction of defensive medicine and support from colleagues. More information is needed and the reasons for the differences in the effects of support from various relevant parties at the institution are not clear, suggesting that it is necessary to distinguish between organizational support and the support of legal counsel, supervisors, and colleagues.

These findings provide basic data on the burden of lawsuits for surgeons and how lawsuits influence defensive medicine. Furthermore, future research should investigate the types and modalities of support that are most helpful for surgeons when faced with lawsuits.

Our study design has many positive points. Our study was a survey conducted in multiple institutions, focusing on surgeons who had actually experienced a lawsuit. Notably, withdrawal from surgery occurred after the adverse event in cases that progressed to lawsuits—this reduction in the number of surgeons is a great loss to society. The importance of supporting surgeons is now clear. We have provided data that will be helpful in designing supportive measures.

There are some limitations to our study. First, the sample size was small and the response rate was low. Because it was possible that some surgeons had left the medical institution where they worked at the time of the event, either due to the event or other factors over time, we allowed proxies to answer for these surgeons in order to obtain more surveys. However, the answers provided by proxies may not be exact, particularly as onethird of the data was missing in the proxy surveys. Despite this, there was no significant difference in awareness between the surgeons themselves and the proxies. Thus, the risk that proxy surveys contain inaccurate data is low. Second, this study used

a cross-sectional design and we were thus unable to determine the existence of any direct causal relationships. Future prospective studies targeting surgeons are required.

5. Conclusions

We found that a number of surgeons who were actively practicing and involved in malpractice lawsuits withdrew from surgery. Surgeons involved in lawsuits were negatively affected by the time burden and emotional strain resulting from said lawsuits. About one-third of the surgeons who were actually involved in lawsuits were practicing defensive medicine. The tendency toward defensive medicine was high among the surgeons who changed positions. Given the significant influence of lawsuit involvement on a surgeon's practice, medical institutions should provide more support to surgeons. Based on these findings, future research should be conducted to confirm whether legal counsel may prevent defensive medicine.

Disclosure

The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

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Personal Characteristics (N=30)	No. (%)
Specialty	
Gastroenterological Surgery	12 (40.0)
Cardiovascular surgery	6 (20.0)
Chest Surgery	3 (10.0)
Breast Surgery	3 (10.0)
Others	6 (20.0)
Hospital Type	
University hospital (public national)	3 (10.0)
University hospital (private)	3 (10.0)
National medical institutions	3 (10.0)
Prefectural hospitals	5 (16.7)
Municipal hospitals	7 (23.3)
Publish welfare hospitals	2 (6.7)
Private hospitals	2 (6.7)
Medical clinics	2 (6.7)
Others	3 (10.0)
Age, y	
20~29	1 (3.3)
30~39	5 (16.7)
40~49	9 (30.0)
50~59	10 (33.3)
≥60	5 (16.7)

Table 1a Personal Characteristics of Surgeons.

Lawsuits Characteristics (N=30)	No. (%)
Claims (1 million Yen*)	
3~9	2 (6.7)
10~49	10 (33.3)
50~99	11 (36.7)
100~199	7 (23.3)
Plaintiff winning rate at District Court (Award/Claims, %)	
0	10 (33.3)
1~20	11 (36.7)
21~50	6 (20.0)
≥51	3 (10.0)
Time from the event to the judgment at District Court, y	
2~3	3 (10.0)
4~5	17 (56.7)
6~7	7 (23.3)
≥8	3 (10.0)
The final results of lawsuits	
Positive ruling of the medical institution side	11 (36.7)
Judicial settlement	2 (6.7)
Lost lawsuit of the medical institution side	17 (56.7)

Table 1b Lawsuits Characteristics

* 100 million yen indicate approximately 1 million USD.

(N=29*)	No. (%)	Occasion (Event, Claim, File a suit or Lawsuit result)
Changes in work		
Quit operating	1 (3.4)	Claim
Change specialty [†]	1 (3.4)	Lawsuit result
Resign as a doctor [‡]	1 (3.4)	Event
Subtotal	3 (10.3)	
Changes of medical institution		
Resignation, then reinstatement in other institution [†]	4 (13.8)	File a suit =1, Lawsuit result =2, Unknown =1
Total	6 (20.7) [†]	
Positive ruling (N=10)	0	
Lost lawsuit (N=17), Settlement (N=2)	6 (31.6) [†]	(Lost =5, Settlement =1)

Table2 Changes in work after the event.

*The data do not match surveys collected (N=30) because of missing data.

[†]One surgeon was duplication.

[‡]A doctor included a surgeon, physician and another medical specialist.

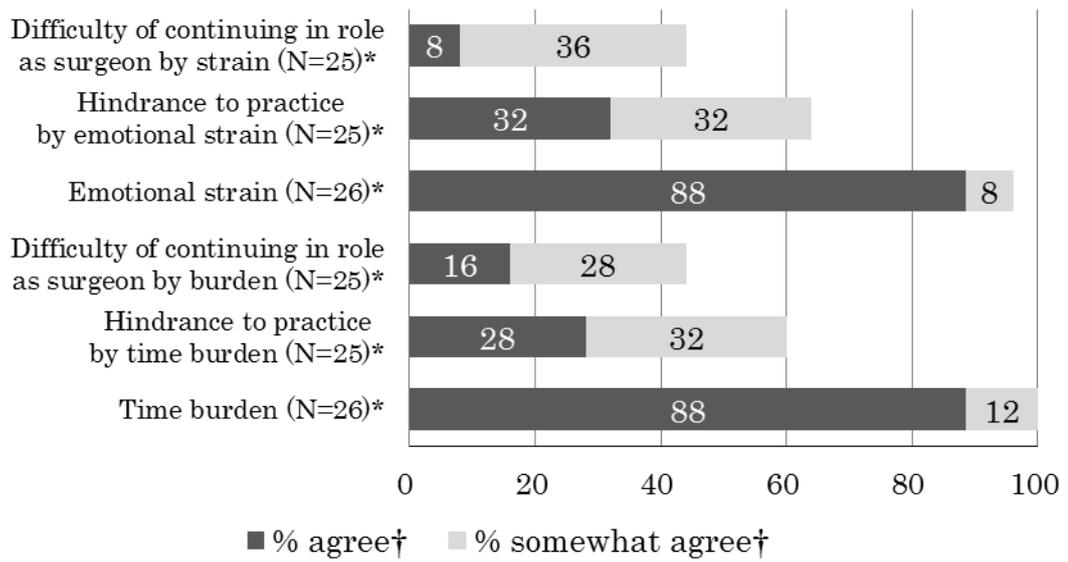


Figure 1a Temporal burden and emotional strain of lawsuit.

*Each item do not match surveys collected (N=30) because of missing data.

† Percentage indicates the ratio of agree and somewhat agree in each item.

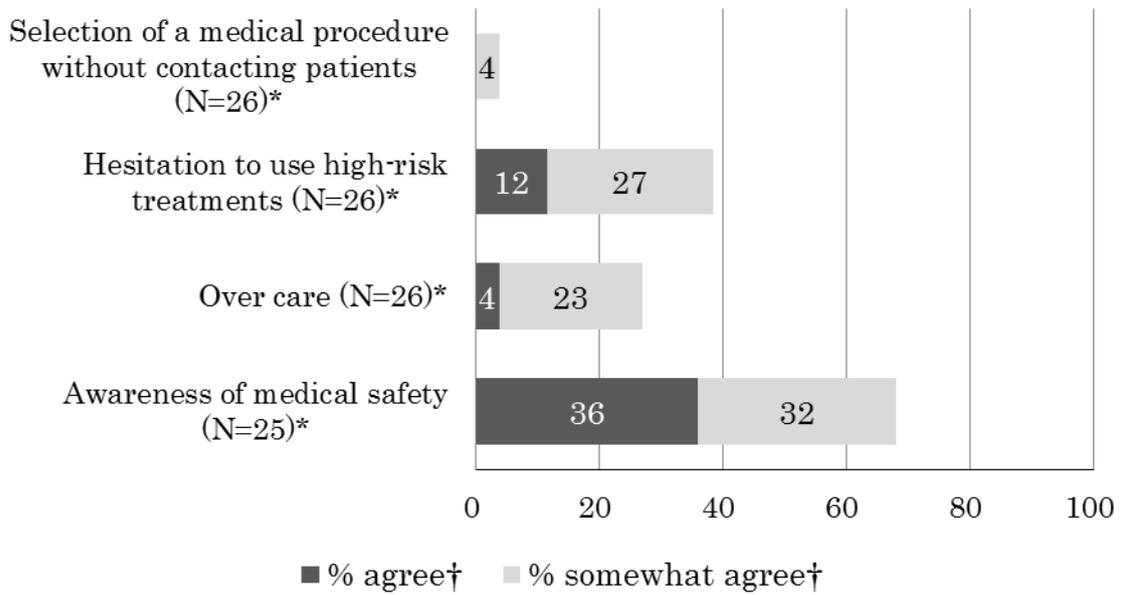


Figure 1b Conscious changes in response to the lawsuit result.

*Each item do not match surveys collected (N=30) because of missing data.

† Percentage indicates the ratio of agree and somewhat agree in each item.

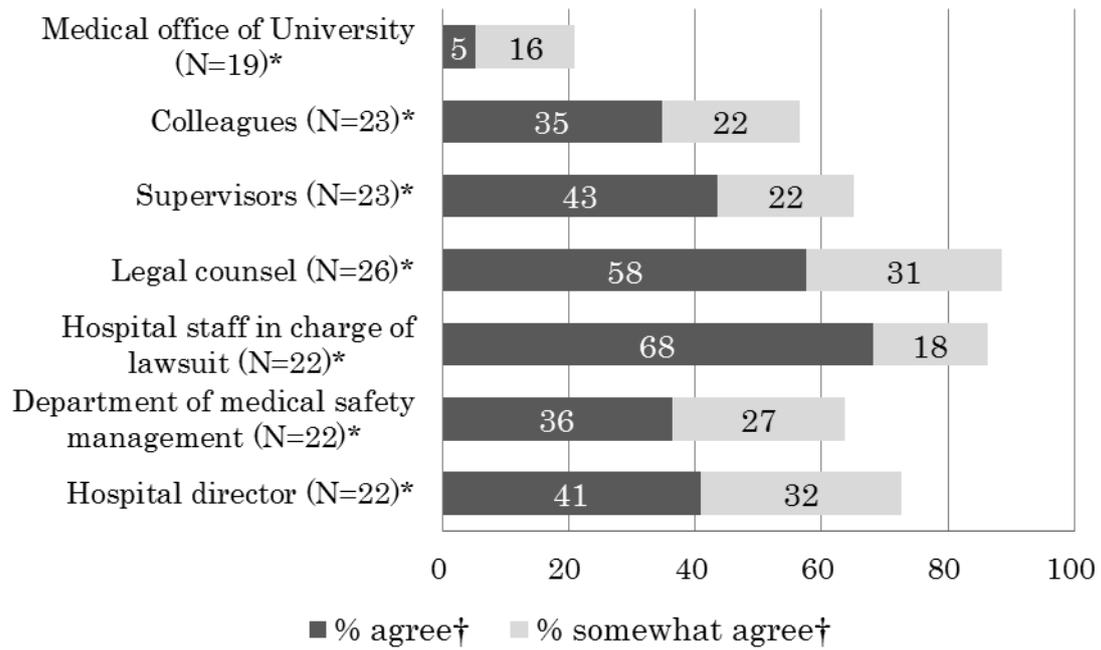


Figure 2 Positive opinions on whether had received the support in lawsuit.

*Each item do not match surveys collected (N=30) because of missing data.

† Percentage indicates the ratio of agree and somewhat agree in each item.

	Conscious changes in response to the event and the lawsuit result			
	Event	Lawsuit result		
	Awareness of medical safety	Over care	Hesitation to use high-risk treatments	Selection of a medical procedure without contacting patients
Hospital director	.433*	-.316		
Department of medical safety management	.576**			
Hospital staff in charge of the lawsuit	.555**			-.246
Legal counsel		-.422*	-.391*	
Supervisors				-.218
Colleagues	.300	-.298	-.214	-.273
Medical office of University	.340			

Table 3 Correlation between conscious changes and support of participants.

* $P \leq 0.05$; ** $P \leq 0.01$