Tohoku J. Exp. Med., 2014, **234**, 161-168

Disclosing Unavoidable Causes of Adverse Events Improves Patients' Feelings towards Doctors

Toshimi Nakanishi[1]

[1]General Medical Education Center, Faculty of Medicine, Yamagata University, Yamagata, Yamagata, Japan

The process of medical mediation involves the reconstruction of doctor-patient relationships through sharing mutual truthful information and encouraging dialogue between doctors and their patients. This study was designed to examine the effects of disclosing the avoidable as well as unavoidable causes of doctors' behavior following malpractice or perceived inconsiderate behavior on patients' feelings in medical mediation. An avoidable cause was defined as doctor's behavior that was incautious or showed insufficient empathy. An unavoidable one, however, was defined as any cause other than doctors' behavior. A questionnaire was administered to 385 Japanese hospital outpatients, in which participants were presented a range of scenarios with the above two causes for doctor's behavior or an adverse event. Participants' feelings toward the doctor in each scenario were measured on a seven-point scale following disclosure of each cause. The five scenarios provoking negative feelings toward doctors involved "(the patient) being ignored," "refusal of a request," "dominating behavior," "a minor incident," and "an adverse event." The valid response rate was 62.9% (242/385). Negative feelings were evoked in all five scenarios. After disclosure of avoidable causes, scores for negative feelings significantly increased between 3% and 33%. In contrast, after disclosure of unavoidable causes, scores for negative feelings significantly decreased between 11% and 43%. These findings imply that disclosure of causal information in medical mediation will provide the opportunity to reevaluate unexpected doctors' behavior and change patients' negative feelings. Therefore, disclosures should be made in the case of not only unavoidable causes but also avoidable ones.

Keywords: alternative dispute resolution; cognitive reappraisal; doctor-patient relationship; medical mediation; patient's feelings

Tohoku J. Exp. Med., 2014 October, **234** (2), 161-168.

Introduction

Many patients who experience adverse medical events and go on to file lawsuits say, "I simply sought an apology and empathy for my feelings. I didn't want to bring him/her to court for malpractice." Similarly, many doctors think, "I would like to apologize when a medical accident occurs and adversely affects a patient" (Nakanishi 2012). These findings suggest the possibility that the two parties might be able to rebuild a good relationship through sincere conversation.

However, many issues such as fear of losing relationships with patients, damaging their reputation and hindering career progression, emotional impacts of adverse events, absence of training to conduct disclosure conversations, threat of lawsuits, and concerns over increased litigation costs may cause a doctor to avoid apology and disclosure (O'Connor et al. 2010). Therefore, a disclosure gap exists between patients' desire to be told about medical errors and present practice (Blendon et al. 2002; Lehmann et al. 2005).

The adversarial nature of court proceedings can lead the doctor-patient relationship into becoming a hostile one, providing limited financial resolution in what is essentially a zero-sum game. With a legal approach, it is difficult to repair a doctor-patient relationship broken by an adverse medical event.

Alternative dispute resolution (ADR) has recently gained the attention of healthcare professionals and managers. It is defined as processes for solving disputes outside of the judicial process (formal litigation or court proceedings). According to some researchers, advantages of ADR include greater satisfaction on the part of the disputing parties, speed, reduced cost, empowerment, creativity, and face-to-face encounters (Dubler 1988; Buckner 2000; Dauer 2002; Hyman et al. 2010; Rigby-Weaver 2011; Sohn and Bal 2012).

The probability of dispute settlement increases when medical medication is implemented with ADR among doctors, patients, and their families (Nakanishi 2013b). In arbitration, both parties agree that they will abide the judg-

Received February 24, 2014; revised and accepted September 9, 2014. Published online October 3, 2014; doi: 10.1620/tjem.234.161.

Correspondence: Toshimi Nakanishi, General Medical Education Center, Faculty of Medicine, Yamagata University, 2-2-2 Iida-nishi, Yamagata, Yamagata 990-9585, Japan.

e-mail: nakamomo@med.id.yamagata-u.ac.jp

ment of an arbitrator who is not necessarily a lawyer. Medical mediation is non-binding for the parties involved.

A key difference between arbitration and medical mediation is that arbitration occurs in a legal context whereas medical mediation is a non-legal forum. Medical mediation is focused on disclosure of information, repairing the doctor-patient relationship and empowering the patient and the doctor. Medical mediation is concerned with the exchange of accurate information by both parties with a goal of removing misunderstandings by either party based on incorrect information or stereotyping, i.e. removing cognitive bias. Patients are empowered to make better-informed decisions and doctors are encouraged to consider the situation from the patient's perspective.

During the initial phase of a dispute after a medical accident, patients and their families frequently evoke unpleasant emotions, and intuitively infer causes of these events based on their own beliefs, attitudes and personal characteristics of their doctors (Gilbert and Malone 1995). Thereafter, they gradually develop vague negative feelings towards their doctors. When they are left alone, these feelings are gradually strengthened. Early intervention by mediators may be beneficial for reducing the development of these feelings.

The medical mediation we have proposed is the process of relationship reconstruction through sharing medical information by encouraging dialogue between patients and doctors. This process promotes perceptual changes of patients and their families, contributing to prevent and reconcile cognitive conflicts (Wada and Nakanishi 2011). Medical mediation is an important way of achieving cognitive reappraisal (a more informed reconsideration) of adverse events and conflicts in the course of medical treatment, based on disclosing accurate and complete information (Nakanishi 2013a).

However, there is no experimental verification of this concept. The purpose of this study is to verify whether the quality of information disclosed influences feelings of patients or their families who have undergone adverse events or when they encounter unfriendly behavior from their doctors.

Methods

Participants

This study was conducted in April 2011. Patients were enrolled from hospitals across Japan (Kyoto, Gifu, Fukui, and Nagasaki City), and 385 surveys were carried out across four institutions (Hashii Clinic, Gifu Municipal Hospital, Tsuruga Municipal Hospital, and the National Hospital Organization at the Nagasaki Kawatana Medical Center).

No financial remuneration or course credit was offered as an incentive to participate. The participants were informed of the purpose of the study. When they chose not to participate, they could simply return an incomplete questionnaire without any disadvantage.

The survey was approved by the Yamagata University Faculty of Medicine Research Ethics Committee, and the four hospitals' ethics committees approved the research plan.

Questionnaire

Five clinical scenarios were presented to each respondent. The scenarios were labeled 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event' (Table 1).

Each respondent was also asked about the extent of unpleasant emotions they were feeling in each scenario (angry, embarrassed, anxious, alone, uncomfortable) using a seven point Likert scale (1: strongly disagree, to 7: strongly agree). The most positive possible score for the respondent's emotions is five, a neutral score is 20, and the most negative possible score is 35. This provided a baseline of the respondent's feelings within themselves in each scenario. Each respondent was then asked the question that 'How would you feel toward the doctor?' using a seven point Likert scale (1: strongly disagree, to 7: strongly agree) in Fig. 1.

The sum of the scores obtained from these questions indicates the respondent's negative interpersonal feelings toward the doctor in these scenarios.

Then, one of two types of causes for the doctor's actions (avoidable or unavoidable) was presented to the responders as shown in Table 1. A total score measuring the respondent's feelings towards a doctor, with a range from 3 (most positive) to 21 (most negative) was taken, and then compared with the respondent's emotions after disclosure of both an avoidable and an unavoidable cause for the behavior or adverse event.

Using the questionnaire, we also investigated the respondent's characteristics, including age, gender, and hospital departments where respondents were being treated. Responses were included in the statistical analysis if they answered all the five scenarios.

Data analysis

Descriptive statistics of respondents' characteristics and the total scores for emotions and feelings were shown in means with their standard deviations. Reliability was tested using Cronbach's α coefficient, and a value of 0.70 or higher was considered acceptable. The correlation coefficient between unpleasant emotions and negative interpersonal feelings was calculated to determine the degree of their relationship. The comparison was made using analysis of variance (ANOVA) and multiple comparisons based on the Bonferroni post hoc test. The comparison between the assessment scores of questions on negative interpersonal feelings and those on changes in feelings after disclosure of causal information was conducted by using an unpaired *t*-test. The cutoff for statistical significance was set at 0.05 (two-tailed) for all comparisons. To show the effect size, the correlation coefficient (r), R^2, and Cohen's d were used for the correlation, ANOVA, and unpaired *t*-test, respectively.

As for gender and hospital departments where patients were being treated, their effect on the negative interpersonal feelings score in each scenario were evaluated using the differences in the linear model. "Male" and "internal medicine" were set as references for gender and department, respectively. When conducting the statistical analysis and creating the outputs, Graph Pad Prism version 6 was used for Questions about negative interpersonal feelings and about changes in feelings after disclosure of causal information. IBM SPSS Statistics version 19 was used for the rest.

Results

Of the 385 respondents, 242 completed all scenarios in

Table 1. Clinical scenarios and disclosure information in questionnaire.

Type of Scenario	Being ignored		Refusal of a request		Dominating behavior		A minor incident		An adverse event	
Setting	The attending out-patient doctor was changed recently. The new doctor and you do not know each other well. A few days before, you attended the out-patient clinic, and consulted him/her. Today, you pass him/her in the corridor. You greet the doctor, but the doctor continues walking without saying anything.		You asked a doctor to give you a prescription for medicine that had worked well for your symptoms in the past. But the doctor said, "That medicine is no good," and refused to prescribe it.		There are many things you can't do in your daily life. However, the doctor pushes his/her own treatment methods on you, saying, "If you want to get better, you have to do this."		You received an incorrect prescription, which had been made for another patient. The pharmacist at a non-hospital pharmacy recognized the error and the error was not serious.		You went to the hospital with a headache, but the doctor told you to return home. Shortly after that, you collapsed with a brain hemorrhage and were admitted to that hospital. The consequences included serious paralysis and you need a wheelchair.	
Cause of Scenario	Avoidable	Unavoidable	Avoidable	Unavoidable	Avoidable	Unavoidable	Avoidable	Unavoidable	Avoidable	Unavoidable
Detail	You find out that this doctor is normally absent-minded and careless, and on this occasion, the doctor didn't realize that you were there.	You find out that the doctor was hurrying towards an ambulance. The doctor was thinking about strategies to deal with the situation, so he/she didn't see you.	This doctor seems to have refused the treatment without really listening to your request because he/she tends to be careless.	The doctor seems to have refused the treatment because it is not permitted to prescribe this medication in this hospital.	This doctor tends to be incautious about the patient, and he/she forces his/her method on without properly understanding your life.	The doctor seems to have refused the treatment for sound medical reasons.	This doctor is always incautious, and he/she prescribed medicine for you that should have been prescribed to the patient before you by mistake.	The doctor prescribed the correct medication; however, the prescription for the patient before you was dispensed because of a malfunction of the prescription system.	It seems that this doctor was incautious and could not identify the cause of your headache (cerebral infarction), which was easily diagnosed by other doctors.	It seems that the cause of your headache (cerebral infarction) is difficult to correctly diagnose.

Five clinical scenarios were presented to each respondent. Each scenario was labeled 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event'.

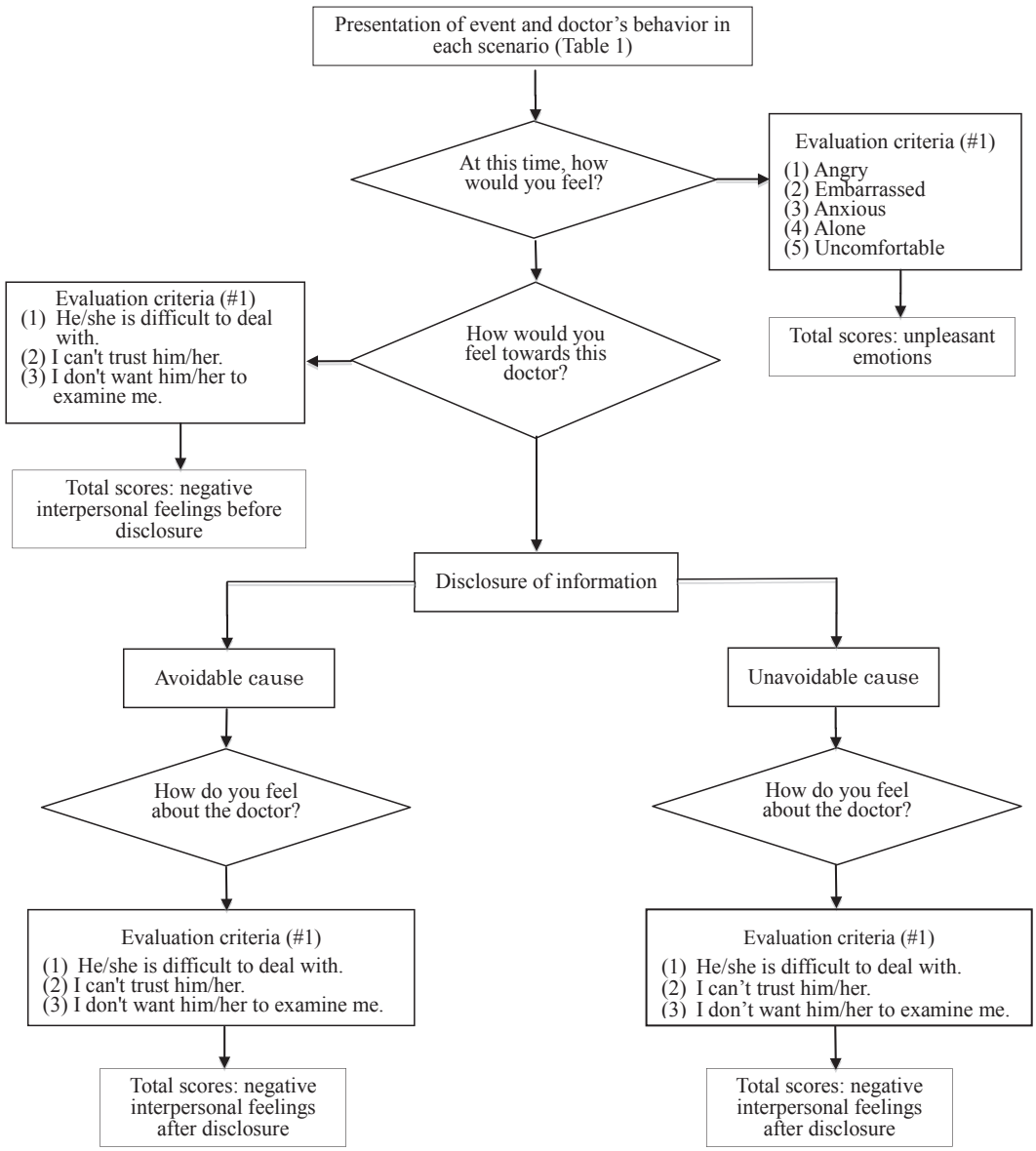

Fig. 1. Flow diagram of questionnaire in a scenario.
#1; Indicate the extent of your agreement or disagreement with each of the following criteria by writing the appropriate rating number. Use the seven points scale (1: strongly disagree, 2: disagree, 3: slightly disagree, 4: neither disagree nor agree, 5: slightly agree, 6: agree, 7: strongly agree).

the questionnaire, giving a valid response rate of 62.9%.

Respondents' characteristics

The characteristics of respondents are shown in Table 2. The number of females was 3.2 times higher than that of males. The ages between 20 and 69 accounted for 89.6% of the total. The number of patients in the internal medicine and surgery departments accounted for 95.9% of the valid respondents (Table 2).

Reliability of the questions

In terms of unpleasant emotions, Cronbach's α was 0.81, 0.82, 0.81, 0.70, and 0.70 for the scenarios; 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event', respectively. In terms of negative interpersonal feelings, Cronbach's α was 0.92, 0.91, 0.93, 0.91, and 0.89 for 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event', respectively. Therefore, the reliability of the questions was verified both in unpleasant emotions and in negative interpersonal feelings.

Evaluation of unpleasant emotions

Significant differences were found among the scores of the unpleasant emotions (F: 59.1, DF: 4, $P < 0.0001$, R^2: 0.16). The neutral score, where the evaluation of unpleasant emotions is neither positive nor negative, is 20. The scenario with the lowest score among all the five was

Table 2. Respondents' characteristics (n = 242).

Gender	Male	57 (23.6)
	Female	183 (75.6)
	No response	2 (0.8)
Age	under 20 years	3 (1.2)
	20-29 years	49 (20.2)
	30-39 years	50 (20.7)
	40-49 years	39 (16.1)
	50-59 years	49 (20.2)
	60-69 years	30 (12.4)
	70s or older years	19 (7.9)
	No response	3 (1.2)
Hospital department	Internal medicine	122 (50.4)
	Surgery	110 (45.5)
	Other	2 (0.8)
	No response	8 (3.3)

Data are presented as n (%). The age is presented as mean (standard deviation).
The respondents' age: 45.0 (15.9), male age: 53.4 (15.1), and female age: 42.4 (15.3).

'refusal of a request' with a score of 21.1 (6.0), which exceeded the neutral score of 20 points. The scores for 'being ignored', 'dominating behavior', 'a minor incident', and 'an adverse event' were 21.2 (6.5), 21.3 (5.8), 25.1 (5.5), and 27.5 (5.7), respectively. Each set of values represents mean (standard deviation). A significant difference was also observed between female and male respondents in 'dominating behavior' [22.0 (5.6) vs. 19.0 (7.0), $p < 0.01$].

Evaluation of negative interpersonal feelings before disclosure

Negative interpersonal feelings toward the doctor showed significant differences among the five scenarios (F: 95.4, DF: 4, $P < 0.0001$, R^2: 0.24). The scenario of 'an adverse event' had the highest score of 18.9 (3.2), followed by 'a minor incident' with 17.8 (3.8), 'dominating behavior' with 14.5 (4.2), 'refusal of a request' with 13.6 (4.1), and 'being ignored' with 13.5 (4.6). A significant difference was found between 'an adverse event' and 'a minor incident' (d: 0.3, $p < 0.0001$), and between 'a minor incident' and 'dominating behavior' (d: 0.82, $p < 0.001$).

There were significant differences between female and male respondents in 'dominating behavior' [15.0 (3.8) vs. 13.0 (4.7), $p < 0.01$], 'a minor incident' [18.0 (3.6) vs. 17.0 (4.2), $p < 0.05$], and 'an adverse event' [19.0 (2.9) vs. 17.0 (3.7), $p < 0.01$].

Relationship between unpleasant emotions and negative interpersonal feelings

The correlation coefficients (r) between unpleasant emotions and negative interpersonal feelings for 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event' were 0.81 ($p < 0.0001$), 0.77 ($p < 0.0001$), 0.75 ($p < 0.0001$), 0.61 ($p < 0.0001$), and 0.50 ($p < 0.0001$), respectively. Because a significant correlation coefficient (r) greater than 0.4 was obtained in all five scenarios, it was determined that there was a higher-than-moderate positive correlation between unpleasant emotions and negative interpersonal feelings.

Effect of disclosing causal information on negative interpersonal feelings

The negative interpersonal feelings changed when information on avoidable or unavoidable causes was disclosed (Fig. 2).

The bar graph ("after disclosure (avoidable)") in Fig. 2 shows the results when avoidable causes were communicated. Negative interpersonal feelings increased by 3% (d: 0.11), 33% (d: 1.20, $p < 0.0001$), 15% (d: 0.52, $p < 0.0001$), 2% (d: 0.11), and 3% (d: 0.16, $p < 0.05$) in the scenarios of 'being ignored', 'refusal of a request', 'dominating behavior', 'a minor incident', and 'an adverse event', respectively. Providing information on avoidable causes exacerbated negative interpersonal feelings.

The bar graph ("after disclosure (unavoidable)") in Fig. 2 shows the results when unavoidable causes were communicated. In contrast to the avoidable causes, providing information on unavoidable causes significantly decreased negative interpersonal feelings in all five scenarios ($p < 0.0001$). The rates of decline were 43% in 'being ignored' (d: 1.29), 43% in 'refusal of a request' (d: 1.39), 38% in 'a minor incident' (d: 1.47), 25% in 'an adverse event' (d: 1.24), and 11% in 'dominating behavior' (d: 0.38). The effects of gender and the medical department on the evaluation score in the five scenarios, scores in females increased by 1.17 ($p < 0.05$) for 'dominating behavior', and scores in the surgery department increased in score by 1.47 ($p < 0.05$) for 'a minor incident'. No effect of gender or

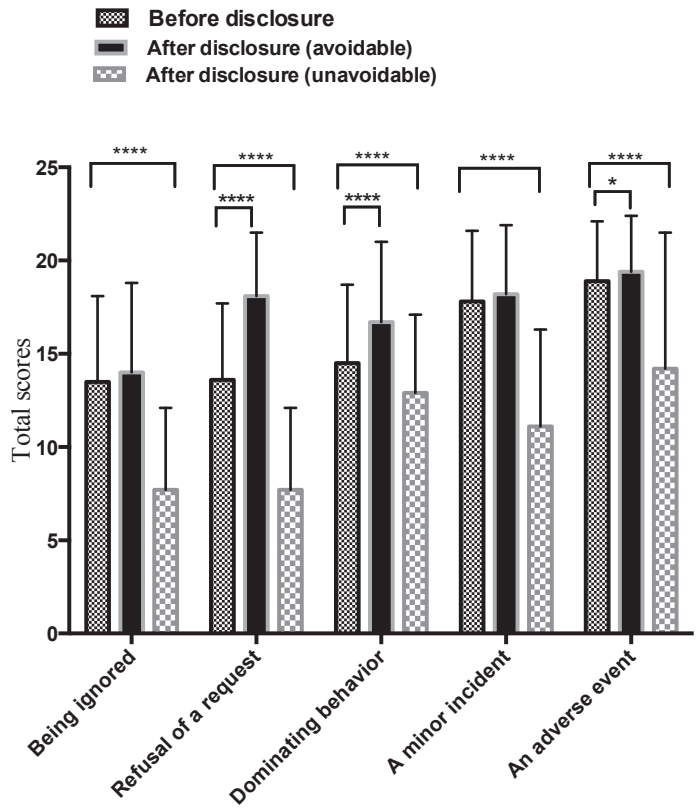

Fig. 2. Effect of disclosure of avoidable or unavoidable cause information on negative interpersonal feelings.
The column and vertical bars represent mean and standard deviation. Total scores are within 3 to 21. A score of 12 indicates the halfway point between strongly disagree and strongly agree. The numerical values in each scenario represent as mean (standard deviation). The values of "before disclosure" are the following: 'being ignored'; 13.5 (4.6), 'refusal of a request'; 13.6 (4.1), 'dominating behavior'; 14.5 (4.2), 'a minor incident'; 17.8 (3.8), and 'an adverse event'; 18.9 (3.2). The values of "after disclosure (avoidable)" are the following: 'being ignored'; 13.5 (4.6) vs. 14.0 (4.8), 'refusal of a request'; 13.6 (4.1) vs. 18.1 (3.4), 'dominating behavior': 14.5 (4.2) vs. 16.7 (4.3), 'a minor incident'; 17.8 (3.8) vs. 18.2 (3.7), and 'an adverse event'; 18.9 (3.2) vs. 19.4 (3.0). The values of "after disclosure (unavoidable)" are the following: 'being ignored'; 7.7 (4.0), 'refusal of a request'; 7.7 (4.4), 'dominating behavior'; 12.9 (4.3), 'a minor incident'; 11.1 (5.2), and 'an adverse event'; 14.2 (4.3). An unpaired *t-test* was used. $*p < 0.05$, $****p < 0.0001$.

department was observed in other scenarios.

Discussion

This study investigated the effect that the disclosure of information about avoidable or unavoidable events had on the patients' responses about their doctors' behavior. When information regarding avoidable causes (Table 1) was presented, negative interpersonal feelings were exacerbated as shown in the bar graph named "after disclosure (avoidable)" in Fig. 2. In that situation, it was not unexpected that the patient may express unpleasant feelings and blame the doctors. A "refusal of a request" was associated with the highest increase in the score for negative interpersonal feelings; this increase was much higher than "an adverse event" and "a minor incident." However, we should be careful when interpreting these findings because negative interpersonal feelings were already close to the highest score of 21 before the information disclosure: "an adverse event" (18.9) and "a minor incident" (17.8).

In contrast, negative interpersonal feelings were reduced when information regarding unavoidable causes (Table 1) was provided to the patients as shown in the bar graph called "after disclosure (avoidable)" in Fig. 2. In each scenario, the total scores for the negative interpersonal feelings improved significantly. Compared to the increase in negative interpersonal feelings invoked by avoidable causes, negative interpersonal feelings were approximately 10 times less in the cases of unavoidable causes. In particular, the fact that negative feelings decreased after an adverse event by 25% is important. This suggests that the disclosure of medical indication and judgment decreases negative feelings against the doctor when an unexpected result occurs during medical practice.

In terms of the relationship between feelings and cognition, this study follows the views of Nolen-Hoeksema et al. (2009). These views are as follows: "subjective experiences of emotions, feelings, or guide" and "feelings also steer memory, learning, and risk assessments." This implies that feelings and behavior, decision making, and judgment have an influence on each other.

When there is a disagreement between the criteria used by the patient and those used by the doctor, the patient felt unpleasant emotions as shown in the results of the "evaluation of unpleasant emotions." The unpleasant emotions further developed the negative interpersonal feelings as indicated by the results of the "evaluation of negative interpersonal feelings before disclosure." The patients used cognitive appraisal (Rosenberg 1998) at this stage, because the total scores were each different in the five scenarios as shown on the bar graph ("before disclosure") in Fig. 2.

Upon this cognitive appraisal, a simple, efficient, and intuitive mental operation that allowed a person to make a variety of judgments quickly and efficiently was used; this may be considered a "heuristic decision" (Tversky and Kahneman 1974). In this heuristic judgment process, stereotyping (Dunning and Sherman1997) may also play a role. The parties in the dispute can use their own beliefs, attitudes, and personal characteristics as decision criteria to infer the causes of the doctor's behavior (Gilbert and Malone 1995). This often leads to biased thinking, i.e., "cognitive bias."

Previously, we had defined the medical mediation model as follows: "it is a relationship reconciliation model that facilitates information sharing by encouraging interactions between the patient and doctor. It can help prevent and reconcile cognitive conflicts (Wada and Nakanishi 2011)." Therefore, we believe that the disclosure of causal information detailed in Table 1 occurs at the information-sharing stage. It also implies that the process to correct the automatic (heuristic) character inference made by the patients is based on the action of the doctor. We thus believe that an important role of medical mediation at this stage is to encourage referencing situational causes that the parties can trust and consider reasonable (Wada and Nakanishi 2011; Nakanishi 2013a).

Helmchen et al. (2010) reported that patients who were confident in their providers' commitment to disclose medical errors were not more litigious. This implies that patients wanted to know what happened and the implications for their care. Therefore, we should make disclosures not only in the case of unavoidable causes but also in the case of avoidable ones as shown in Table 1. Furthermore, the doctor has responsibility for the results of his/her medical practice and procedure, because this is the ethical posture, and also the basis of professionalism. Another reason for the disclosure in cases of avoidable causes is that most avoidable events are due to human error or personal characteristics in my experience.

As shown at the bar graph ("before disclosure") in Fig. 2, a higher level of negative feelings among patients toward doctors in each scenario had already been detected before disclosure. Therefore, how doctors behave toward patients in the process of disclosing avoidable causes is an important issue. Understanding patients' interests is especially crucial. When doctors choose to personally disclose avoidable causes of adverse events to patients, they often make an effort to provide rational, objective explanations for their behaviors. Such an attitude will, however, exacerbate negative feelings that patients already have, as implied by the bar graph titled "after disclosure (avoidable)" in Fig. 2. Thus, medical mediation is a useful means for resolving situations like these (Nakanishi 2013b).

In terms of gender, the number of females was 3.2 times the number of males (Table 2). However, the significant effect of gender was only observed in the "dominating behavior" scenario through the disclosure process. This indicates that gender differences did influence the negative interpersonal feelings, but the influence was small. Further study will be needed to confirm this result.

As a note, the results obtained in the present study were consistent with the outcomes from our practical experience. However, this study had several limitations. First, the design of the questionnaire was based on previous psychological studies of negative interpersonal feelings (Takagi 2003). However, the criterion-referenced validity has not been established. Second, the results were not confirmed in different cultures. Research shows that behavior and communication need to be understood within the context in which they occur, and that this context differs considerably from one culture to another, and across different types of interpersonal relationships (Miller 1984; Masuda and Nisbett 2001). The present study was conducted in the context of Japanese healthcare, and in four cities. Further experimental studies are needed to confirm the present findings in other cities and in different cultural contexts. Creativity and greater satisfaction on the part of the disputing parties have been reported as some of the effects of mediation. This is probably because the perception of negative interpersonal feelings changes through mediation and can become positive interpersonal feelings. As a result, the parties find the key to a solution that satisfies the interests of both parties involved in the dispute. Further empirical examination of these interaction processes is required.

In conclusion, the results of the present study show that quality of causal information, that is, avoidable causes or unavoidable causes, for doctors' behavior can affect negative interpersonal feelings in different ways. One is an increase and the other is decrease in negative interpersonal feelings. These findings imply that disclosure of causal information in medical mediation will provide the opportunity to reevaluate unexpected doctors' behavior and to change negative patients' feelings. Therefore, we should make disclosures not only in the case of unavoidable causes but also in the case of avoidable ones.

Acknowledgments

I would like to thank Dr. Yoshihiro Sugiura of Tsuruga Municipal Hospital, Dr. Eiichi Tomita of Gifu Municipal Hospital, Dr. Koji Hashii of Hashii Clinic, Dr. Kousei Miyashita of National Hospital Organization Nagasaki Kawatana Medical Center, and everyone who contributed to this multi-institutional collaborative study.

The author acknowledges Takashi Ando, MSc, Non-Profit

Organization Japan Clinical Research Support Unit, for statistical analysis of the data.

Conflict of Interest

The author declares no conflict of interest.

References

Blendon, R.J., DesRoches, C.M., Brodie, M., Benson, J.M., Rosen, A.B., Schneider, E., Altman, D.E., Zapert, K., Herrmann, M.J. & Steffenson, A.E. (2002) Views of practicing physicians and the public on medical errors . *N. Engl. J. Med*., **347**, 1933-1940.

Buckner, F. (2000) Mediation sans litigation in malpractice. *J. Med. Pract. Manage*., **16**, 156-159.

Dauer, E.A. (2002) Alternatives to litigation for health care conflicts and claims: alternative dispute resolution in medicine. *Hematol. Oncol. Clin. North Am.*, **16**, 1415-1431.

Dubler, N.N. (1988) Mediation and managed care. *J. Am. Geriatr. Soc.*, **46**, 359-364.

Dunning, D. & Sherman, D.A. (1997) Stereotypes and tacit inference. *J. Pers. Soc. Psychol.*, **73**, 459-471.

Gilbert, D.T. & Malone, P.S. (1995) The correspondence bias. *Psychol. Bull.*, **117**, 21-38.

Helmchen, L.A., Richards, M.R. & McDonald, T.B. (2010) How does routine disclosure of medical error affect patients' propensity to sue and their assessment of provider quality? Evidence from survey data. *Med. Care*, **48**, 955-961.

Hyman, C.S., Liebman, C.B., Schechter, C.B. & Sage, W.M. (2010) Interest-based mediation of medical malpractice lawsuits: a route to improved patient safety? *J. Health. Polit. Policy Law*, **35**, 797-828.

Lehmann, L.S., Puopolo, A.L., Shaykevich, S. & Brennan, T.A. (2005) Iatrogenic events resulting in intensive care admission: frequency, cause, and disclosure to patients and institutions. *Am. J. Med*., **118**, 409-413.

Masuda, T. & Nisbett, R.E. (2001) Attending holistically versus analytically: comparing the context sensitivity of Japanese and Americans. *J. Pers. Soc. Psychol.*, **81**, 922-934.

Miller, J.G. (1984) Culture and development of everyday social explanation. *J. Pers. Soc. Psychol.*, **46**, 961-978.

Nakanishi, T. (2012) Healthcare workers' perception of apology, judicial function, dialogue with patients, and patient safety/medical quality in case of a medical adverse event. *Journal of Healthcare Conflict Management*, **1**, 41-52.

Nakanishi, T. (2013a) New communication model in medical dispute resolution in Japan. *Yamagata Med. J.*, **31**, 1-8.

Nakanishi, T. (2013b) Effects of mediator skill training for facilitating disclosure process after adverse events. *Asian J.M.*, 14-25.

Nolen-Hoeksema, S., Fredrickson, B.L., Loftus, G.R. & Wagenaar, W.A. (2009) *Atkinson & Hilgard's Introduction to Psychology*, 15th ed., Cengage Learning, Connecticut, CT.

O'Connor, E., Coates, H.M., Yardley, I.E. & Wu, A.W. (2010) Disclosure of patient safety incidents: a comprehensive review. *Int. J. Qual. Health Care*, **22**, 371-379.

Rigby-Weaver, R.A. (2011) A better way in malpractice cases. Mediation could right an unjust legal system. *Med. Econ.*, **88**, 106-107.

Rosenberg, E.L. (1998) Levels of analysis and the organization of affect. *Rev. Gen. Psychol.*, **2**, 247-270.

Sohn, D.H. & Bal, B.S. (2012) Medical malpractice reform: the role of alternative dispute resolution. *Clin. Orthop. Relat. Res.*, **470**, 1370-1378.

Takagi, K. (2003) Effect of Negative Emotional Experience and Attribution of Responsibility on Negative Interpersonal Affects. *Jpn. J. Exp. Soc. Psychol.*, **43**, 22-35 (in Japanese with English abstract).

Tversky, A. & Kahneman, D. (1974) Judgment under uncertainty: heuristics and biases. *Science*, **185**, 1124-1131.

Wada, Y. & Nakanishi, T. (2011) *Medical Mediation: A Narrative Approach to Conflict Management*, Signe, Tokyo (in Japanese).