

## Cross-cultural surveys on patient views of adverse events between China and Japan

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**ABSTRACT:** The present paper reports comparative results between China and Japan about patients' expectations about a doctor's actions after adverse events and likelihood of their acceptance of different kinds of apology reactions. Survey results suggested that Chinese patients were more sceptical of doctors' actions expected to take after the adverse event than Japanese. However, Chinese patients were more likely to forgive the doctor and the hospital when he/she at least expressed apology. Regarding patient acceptance to various types of apology, the two countries' respondents shared almost the same reactions: the strongest preference was for a "full" apology—explicit words of apology and admittance of the hospital's responsibility—with a promise of taking preventive actions whereas the least effective reaction was a "partial" apology, for which the doctor merely expressed sympathy for the event with no apology. We discuss possible reasons for different patient attitudes to adverse events between the two nations.

### 1 INTRODUCTION

Like in western countries, there has been a rapid increase of concerns with patient safety in China. With a necessity of improvement in patient safety reflecting the patient's "wants", a number of studies have been carried out to incorporate patient views and perspectives for risk management issues in healthcare. For instance, a possibility of disclosure about adverse events has been discussed in a specific healthcare organisation as well as at the nation level, e.g., in the USA (Hobgood et al. 2002) and the UK (Hingorani et al. 1999). These studies focused primarily on the decision stage of disclosure, and there have been only a few projects that have considered the disclosure process, e.g., how and what to disclose, consequences of disclosure, and the relationship between the process and the effects (Mazor et al. 2004).

In recent years, patient views have also been drawn a great attention as an important healthcare issue in China. In particular, patient satisfaction has been a target of investigation, and it was measured in various work settings, e.g., that with nursing care personnel in hospitals (Liu & Wang 2007), healthcare professionals in community health centres (Dib et al. 2010) and other healthcare organisations. With this important stream of patient safety related issues, the Patient Safety Goals was established by the Chinese Hospital Association for the purpose of specifying eight key goals concerning safety procedures and systems, including adverse event reporting, in 2007. Subsequently, they were updated in 2008, attaching an additional

goal of patient participation in healthcare safety management (CHA 2008). With the government initiative, measurement of patient satisfaction has become one of the most frequently used management tools in healthcare organisations in China. However, there are still only a few studies tackling to uncover patient views of other healthcare issues.

Besides the patient satisfaction, it may be required to incorporate patient views of adverse events and medical errors with structural parts of safety, e.g., safety systems, rules and procedures, in healthcare risk management. It is evident from the suggestion by empirical studies that patients have strong wishes of event and error disclosure after they suffered an adverse event (Gallagher et al. 2003, Hingorani et al. 1999). Staff openness and apology in the aftermath of adverse event are of critical importance considering from its legal procedure in Japan and China. When a patient died by unexpected or different causes from his/her own disease, a hospital must report it to the local government. Unlike many countries in Europe, there are no formal "complaint" and "compensation" systems in Japan and China. Therefore, when an adverse event is revealed to a patient or his/her family with no information or no responsibility from the hospital side, only his/her action to know a true story of the event is to take a suit against the hospital.

With this background, the present study targets at uncovering Chinese patients' views of doctor's disclosure actions and their reactions to different types of disclosure and apology actions. In particular, a cross-national study which compares with other

country samples using the same questionnaire is useful for highlighting their important characteristics. Therefore, we conducted a patient survey in China, collecting data by applying Chinese translation of a questionnaire which was used for a Japanese survey (Itoh & Andersen 2009). Comparative analysis was performed using the two countries' samples, aiming at discussing impacts of different healthcare systems and safety practices as well as national culture to patient views.

In the present paper, we report results of cross-national comparisons between China and Japan in patient expectations of doctor's disclosure actions and their attitudes to different types of doctor apologies. In addition, focusing on the Chinese sample, we examine differences in the patient views and attitudes by respondent attributes such as gender and experience of suffering medical errors. We discuss possible reasons for or contributing factors to differences or similarities of the patient views between these two countries. Based on the discussions, we also explore some implications for safer healthcare systems.

## 2 QUESTIONNAIRE AND RESPONDENTS

Most parts of the questionnaire that we used in this study were originally developed by Andersen et al. (2004), and then the Japanese version was made with an additional section of patient acceptance to doctor apologies (Itoh & Andersen 2009). The Chinese version was the exact translation from the Japanese questionnaire. There were totally six sections asking patients their views about various aspects of adverse events and the way they dealt with. An additional demographic section asked respondents to fill in information about consultation specialty, gender, age group, and recent two years' experience of hospitalisation and whether they had suffered medical errors during hospitalisation.

The present paper focused on the first section of the questionnaire that included the following two aspects: (1) patient expectations about a doctor's actions after an adverse event, and (2) their likelihood of acceptance to various types of doctor apologies. Respondents' reactions were elicited as responses to two fictitious adverse events—one in which the patient suffers a relatively mild injury and the other a relatively severe one. The two fictitious cases were stated as follows:

**Case A (Mild outcome):** A patient is hospitalised for planned elective surgery. Before his operation the patient will as a matter of routine for an elder or middle-aged patient receive an anticoagulant injection as a prophylactic against thrombosis. When dictating to the case notes, the doctor is interrupted several times due to patients suddenly getting ill, and the doctor forgets to include the

anticoagulant for the patient. The patient develops a thrombosis in a vein in his left leg. He therefore has to remain hospitalised an additional week. It is very unlikely that he will have permanent impairment from the thrombosis.

**Case B (Severe outcome):** A cancer patient is hospitalised in order to receive chemotherapy. When preparing the infusion liquid the doctor becomes distracted and mistakenly mixes a dosage that has a concentration ten-times greater than the prescribed level. The doctor discovers the error several hours later when administering the same drug to another patient. By this time the first patient has received all of the high concentration infusion liquid. The doctor knows that the patient now has a risk of developing heart problems later.

Each of the cases was followed by two parts of questions. The first part asked respondents to what extent they would expect a doctor to perform each of the following actions on a five point scale, ranging from 'definitely no' to 'definitely yes': (1) keep it to himself/herself that he/she has made a mistake; (2) write about the event in patient's case-record; (3) inform the patient about the event and the future risk; (4) explain to the patient that the event was caused by his/her mistake; and (5) apologise to the patient about the event.

The second part of the questions pertaining to the two cases was also included to ask respondents about their likelihood of accepting the doctor's apology. In Japan, patients can consult or be treated at any hospital or clinic by the same amount of payment as they wish, i.e., free access to any hospital, and almost all citizens join public insurance (Itoh & Andersen 2009); while in China, although about a half of population are members of public insurance, people can choose a hospital with almost the same expenses. Therefore, we assume that if the victim of an adverse event accepts the doctor's apology who involved in the case, he or she would come to the hospital for consultation next time. Accordingly, respondents were asked to rate their likelihood of the statement "will you come to this hospital next time if the doctor takes each of the following apologies" on a five point scale from "definitely no" to "definitely yes": (1) inform you about the event and the risk in the future (no apology); (2) express sympathy to you about the event ("partial" apology; Robbenolt 2003); (3) not only express sympathy and explicit words of apology, but also admit hospital's responsibility of the event ("full" apology); (4) offer of exemption for additional expenses by the event; (5) full apology + fee exemption, and (6) full apology + promise of taking preventive actions. In addition, an open-ended question was included, asking respondents to state "what reaction other than these six types of "apology" the doctor takes can make you forgive the doctor or hospital".

In Section 2, there were nine statements about causes of medical errors, which were originally developed by Andersen et al. (2004) by use of focus group interviews with healthcare staff and patients. Respondents were asked to express their agreement or disagreement with each statement on a five point Likert scale, ranging from “disagree strongly” to “agree strongly,” with an additional “don’t know” response option.

The Chinese survey was carried out anonymously between September and December 2009. We collected a total of 1365 responses, in which 934 were valid (52% of overall valid response rate), from inpatients as well as families and relatives in three hospitals. Two of the hospitals were located in Shanghai, and the other was in Shanxi Province, which is in the central area of China. An envelope which included a questionnaire and a cover letter was distributed to each respondent by a research assistant of a Chinese university. A completed, sealed response was collected by the student later. The number of valid responses of the Japanese sample was 1744 with an overall response rate of 46% (Itoh & Andersen 2009).

### 3 CROSS-NATIONAL COMPARISONS

#### 3.1 Patient expectations to doctor’s disclosure

Comparative results of patient expectations to doctor’s actions after adverse events between Chinese and Japanese patients are shown in Table 1 in terms of percentage agreement and disagreement with each action item mentioned in the last section. The percentage [dis]agreement is referred to as a proportion of respondents who strongly or slightly [dis]agreed that the doctor would take the action expressed. Table 1 also includes a significance level derived by the Mann-Whitney test between Chinese and Japanese patients for each action.

As can be seen in Table 1, there were significant differences between Chinese and Japanese patients in their expectations to most of the doctor’s actions taken up in the questionnaire. Only for the doctor’s apology and writing about the event in the patient’s case record, significant differences were not observed—both only for the mild outcome case. Chinese patients were significantly more sceptical of the doctor’s disclosure than Japanese for most action items. Compared with the Japanese, the Chinese respondents exhibited higher percentage of the doctor’s keeping secret about the event and lower for most of the other action items: admitting his/her own mistake, expressing his/her apology to the patient, writing the event in the patient’s case record, and informing the patient about the event and the future risk—only in the severe outcome case for the last three items. However, a greater

Table 1. Comparisons of patient expectations about doctor’s actions between China and Japan.

Doctor actions	Cases	China	Japan	<i>p</i>
Keep it to him/herself	Mild	44%	27%	0.000
	Severe	41% 45%	46% 27%	0.000
Write in patient case record	Mild	39% 41%	51% 39%	0.789
	Severe	38% 23%	36% 38%	0.000
Inform patient event & risk	Mild	57% 68%	34% 48%	0.000
	Severe	18% 33%	30% 47%	0.000
Admit own error	Mild	49% 28%	28% 43%	0.000
	Severe	33% 52%	39% 33%	0.000
Apologise to patient	Mild	47% 34%	43% 33%	0.760
	Severe	42% 38%	48% 27%	0.000

Upper row: % agreement; Lower row: % disagreement

percentage of Chinese respondents than Japanese expected that the doctor would inform about the event to the patient when its outcome is relatively mild.

An interesting cross-national difference was found when we compared patient responses between the two different outcome cases. Chinese patients’ expectations of the doctor’s disclosure actions became more negative with the level of outcome severity with no significant difference only for the item, “keeping it to him/herself”. For instance, 41% of Chinese patients expected that the doctor would write about the event in the patient’s case record for the mild outcome case, and their percentage agreement decreased to 23% in the severe outcome case. In contrast with patient expectations, Chinese doctors had higher willingness to take disclosure actions for the severe outcome case, e.g., 28% (mild outcome) and 30% (severe outcome) for the same action, according to the results of a similar survey which used the same cases and action items (Gu & Itoh 2009).

In contrast, differences of Japanese patients’ expectations to the doctor’s action between two cases of outcome severity directed completely to the other side, although no significant differences were identified between these cases for two action items. For instance, 43% of Japanese respondents expected the doctor’s apology for the mild outcome case, and the percentage agreement for this action increased to 48% in the severe case. This trend

about the effect of outcome severity was exactly the same as that of Japanese doctors' likelihood to take the disclosure actions according to the results of a similar survey (Itoh & Andersen 2008).

### 3.2 Patient attitudes to doctor's apology

Results of cross-national analysis applying to the Part 2 responses are summarized in Table 2 in terms of percentage agreements and disagreements of both Chinese and Japanese patients for each type of apology reactions. The table also includes significance levels by applying the Mann-Whitney test between Chinese and Japanese responses. On one hand, we can see several common trends regarding effects of different apology reactions shared by both Chinese and Japanese patients. A greater percentage of patients rejected the doctor's apology when they suffered the severe outcome than the mild outcome case in both countries, regardless types of reactions taken by the doctor. The rank of effectiveness for each apology reaction was similar in the two countries—in terms of patient willingness to return to the hospital for next consultation. The most "effective" apology reaction was to express explicit apology including admitting of hospital responsibility for the event ("full" apology) with the hospital's promise of taking preventive actions in both China and Japan. In contrast, merely expressing sympathy, which is called a "partial" apology (Robbennolt 2003), was the least effective reaction for both countries' patients. This reaction type was much worse than "no" apology, just informing the patient about the event and the future risk—this trend was shared only for the mild outcome event in China.

On the other hand, as can be seen from Table 2, highly significant differences were observed between two countries' patients in their willingness to come back to the same hospital for all types of apology reactions except for offering exemption of additional expenses. Regardless of the outcome severity of the event, Chinese patients exhibited significantly weaker acceptance to any kind of doctor's reactions with no "full" apology than Japanese, i.e., just informing the event or expressing sympathy. However, whenever doctor reaction included at least "full" apology, the Chinese patients were more likely than Japanese to forgive the doctor or the hospital. The largest difference between the two countries' patients in percentage agreement was for the "full" apology with a promise of taking preventive actions in the severe outcome case. When the doctor took this action, 58% of Chinese respondents agreed strongly or slightly that they would come back to the hospital for next consultation, while the percentage agreement of the Japanese respondents was only 38%—although

Table 2. Comparisons of patient acceptance to doctor's apology between China and Japan.

Apology reactions	Cases	China	Japan	<i>p</i>
Inform event & risk (no apology)	Mild	40%	36%	0.001
		44%	31%	
	Severe	13%	23%	0.000
Express sympathy (partial apology)		74%	51%	
	Mild	16%	18%	0.000
		67%	40%	
Full apology	Severe	13%	13%	0.000
		73%	58%	
	Mild	57%	40%	0.000
		25%	26%	
	Severe	43%	26%	0.000
		37%	45%	
Offer of fee exemption	Mild	31%	21%	0.719
		49%	45%	
	Severe	25%	18%	0.323
		55%	57%	
	Mild	62%	49%	0.000
		22%	20%	
Full apology + Offer of fee exemption	Severe	53%	34%	0.000
		28%	36%	
	Mild	67%	55%	0.000
Full apology + Take preventive actions		16%	17%	
	Severe	58%	38%	0.000
		26%	35%	

Upper row: % agreement; Lower row: % disagreement.

this reaction was the most effective apology among six types offered in the questionnaire.

### 3.3 Other reactions for forgiveness

In Part 2, in addition to the close-ended items of the doctor apology, respondents were requested to describe other reactions required to forgive the hospital for the adverse event, if they had. A total of 226 (28% of respondents) and 229 (25%) Chinese respondents replied to the open-ended question—among these numbers, 15 and 19 responses were not related to this question—for the mild and the severe outcome case respectively; while we received about a half size of responses, i.e., 16% for the mild and 11% for the severe outcome case, in the Japanese survey, compared to the Chinese response rates. Table 3 summarises other reactions that we received in the Chinese survey.

About a half of the open-ended responses was repetition of either one of the six reactions offered as the close-ended items, e.g., being informed the event, and receiving apology from the doctor. Besides exemption of additional expenses for the adverse event, more than 50 respondents requested

Table 3. Other doctor reactions to forgive the hospital (from the Chinese sample).

Actions	Mild		Severe	
	No.	Rate*	No.	Rate*
Same as offered reactions	124	13%	92	10%
Additional compensation	54	6%	61	7%
Correct & quick treatment	40	4%	23	2%
Punishment to the doctor	11	1%	19	2%
Difficult or never forgive	21	2%	29	3%

\*: Over the number of total valid responses.

the hospital side to compensate for salary loss and mental damages, i.e., 6% for the mild outcome case. This percentage slightly increased to 7% for the severe outcome case, in which about 23% of these respondents—1% of total respondents—requested further compensation, e.g., exemption of expenses for the present and future health problems during their lifetimes. A few percent of patients requested correct and quick treatment after the adverse event as a requirement for their forgiveness. Not many, but slightly higher than 2% of respondents wished to give strong punishment such as firing and revoking his/her license even to the doctor involving in a severe outcome event.

3.4 Patient perceptions of error causes

Using responses to the nine statements of Section 2 in the questionnaire, we performed cross-national analysis of perceived causes of medical errors. In the same way as the previous tables, percentage agreements and disagreements of Chinese and Japanese respondents are shown in Table 4 as proportions of respondents who agreed and disagreed with a specific item as a cause of medical accidents. The table also includes significance levels derived by the Mann-Whitney test which was applied to the data excluding responses selected a “don’t know” option.

It can be seen from Table 4 that there were significant differences in strength of error cause perception between Japanese and Chinese patients for most potential causes offered in the questionnaire. In particular, a greater percentage of Japanese respondents selected the following three statements as causes of medical accidents than Chinese: staff working under great workload, fewer nurses and doctors than really required. In former studies (Itoh & Andersen 2008, 2009), applying the same nine statements of potential error causes to Japanese staff and patient responses, three underlying factors of medical accident were elicited: staff workload, staff ability and lack of management

Table 4. Comparisons of causes of medical accidents perceived by patients between China and Japan.

Causes of medical accidents	China	Japan	<i>p</i>
Working under great workload	39%	76%	0.000
Fewer nurses than really required	41%	74%	0.000
Fewer doctors than really required	34%	11%	0.000
Staff does not sufficiently responsible for tasks	35%	71%	0.000
Staff is not sufficiently competent	46%	37%	0.000
Inexperienced staff is often left with insufficient back-up	29%	34%	0.117
Bad doctors are allowed to continue working	35%	28%	0.000
Hospital managements do little to prevent errors	34%	38%	0.047
Too few resources allocated to hospital	39%	61%	0.134
	29%	26%	0.638
	33%	39%	

Upper row: % agreement; Lower row: % disagreement.

efforts. All of the above-mentioned three individual statements were representative items of the “staff workload” factor, which is a dominant factor of perceived accident causes not only by patients (Itoh & Andersen 2009) but also by doctors and nurses in Japan (Itoh & Andersen 2008).

In contrast, there was no individual statement with which greater than 50% of Chinese respondents agreed as a cause of medical accidents. This may indicate that there are yet no common perceptions to causes of medical accident among Chinese people. Instead, perceived strengths of accident causes by Chinese were rather similar among these nine individual items, ranging from 29% to 46% of percentage agreement—between 35% and 44%, excluding the top and the bottom. Therefore, Chinese patients perceived most of component items of the “lack of management efforts”, i.e., “inexperienced staff is often left with insufficient back-up”, “bad doctors are allowed to continue working”, “hospital managements do little to prevent errors”, and “too few resources allocated to hospital” stronger than Japanese as accident causes, since percentage agreements of Japanese respondents were not high for statements of non-workload related factors except for the first item. In addition, one of two statements representative to the “staff ability” factor, i.e., “staff does not sufficiently responsible for tasks”, was perceived significantly stronger as an accident causes by Chinese patients than Japanese.

## 4 ATTRIBUTE-BASED ANALYSIS OF CHINESE PATIENTS

### 4.1 Patient views of doctors' disclosure

In this section, selecting the Chinese sample, we illustrate differences or similarities in patient expectations of doctor's disclosure actions (Sec. 4.1), their acceptance to doctor's apology reactions (Sec. 4.2) and their perceived causes of medical accidents (Sec. 4.3) by respondent attributes. Grouping of attributes examined here and the number of responses for each group was as follows:

- Experience of error suffered: patients suffered major error (N = 32), minor error (N = 80) and no error experience (N = 544);
- Gender: female (N = 457) and male (N = 390).

Table 5 shows percentage agreements and disagreements of three "error experience" groups concerning their expectations to the doctor's actions. Because of a small number of respondents suffered "minor" or "major" error, we made an "error experienced" group merging these two groups into one when applying statistical tests. The significance levels of differences between "no error experience" and "error experienced" groups as results of the Mann-Whitney test are also included in Table 5.

There were significant differences between "no error experience" and "error experienced" groups in their expectations of most doctor actions examined in this study. In the mild outcome case, Chinese patients who had suffered medical error exhibited significantly more negative expectations of doctors' actions which should be taken after the event, i.e., writing about the event in patient's case record, admitting his/her own error, and apologising to the patient. Similarly, the "error experienced" group was significantly more suspicious of the doctor's reaction than "no experience" group in the severe outcome case. Their suspicion became larger in this case than the mild case: a significant difference was also observed between the two groups in informing the patient about the event and the future risk.

Regarding gender difference, significant differences were identified only in the severe outcome case between female and male groups. As an overall trend, female patients showed themselves more sceptical of the doctor's action than male, e.g., 30% vs. 36% of agreements with informing the patient about the event and future risk ( $p = 0.028$ ) and 26% vs. 31% with admitting the doctor's own mistake ( $p = 0.032$ ). This trend was different from the results of the Japanese survey: Japanese men were generally more sceptical of healthcare staff actions than women (Itoh & Andersen 2009).

Table 5. Chinese patients' expectations about doctor's actions by three types of error experience.

Doctor actions	Cases	Major error	Minor error	No error	$p^*$
Keep it to him/ herself	Mild	42%	41%	44%	0.609
	Severe	42% 41% 44%	41% 53% 38%	39% 45% 38%	0.322
Write in patient case record	Mild	26%	30%	45%	0.000
	Severe	55% 16% 69%	47% 14% 62%	36% 26% 54%	0.000
Inform patient event & risk	Mild	74%	63%	70%	0.427
	Severe	13% 22% 59%	19% 15% 67%	18% 39% 45%	0.000
Admit own error	Mild	26%	18%	35%	0.000
	Severe	58% 16% 66%	68% 11% 75%	48% 32% 47%	0.000
Apologise to patient	Mild	29%	32%	51%	0.000
	Severe	61% 31% 53%	53% 22% 54%	31% 47% 36%	0.000

Upper row: % agreement; Lower row: % disagreement.  
\*:  $p$ -value between "error experienced" group (major + minor errors) and "no error experience" group.

### 4.2 Patient attitudes to doctors' apology

Regarding the patient acceptance to various kinds of apology reaction which may be taken by the doctor, analysis results for three "error experience" groups are shown in Table 6 in the same manner of the last subsection. As indicated in the table, unlike the results of patient expectations to the doctor's action, significant differences were identified only for a few doctor reactions, for which "error experienced" patients were slightly less likely to accept doctor's apology than "no error experience" patients.

Significant differences were also observed for several doctor reactions between female and male. Chinese women had more negative attitudes to accepting doctor's apology than men, e.g., 13% (women) vs. 14% (men) of agreements for merely expressing sympathy ( $p = 0.025$ ), and 51% vs. 56% for "full" apology with offering of fee exemption ( $p = 0.018$ ). Japanese sample shared this trend that women are less likely to receive the doctor apology (Itoh & Andersen 2009).

### 4.3 Patient perceptions of error causes

Table 7 summarises percentage agreements and disagreements with individual error cause perceived by

Table 6. Chinese patients' acceptance to doctor's apology by three types of error experience.

Doctor apologies	Cases	Major error	Minor error	No error	<i>p</i> *
Inform event & risk	Mild	34%	38%	41%	0.308
	Severe	53%	49%	42%	
Express sympathy	Mild	75%	77%	72%	0.350
	Severe	13%	10%	14%	
Apology (no fee exemption)	Mild	6%	11%	17%	0.431
	Severe	69%	68%	66%	
Offer of fee exemption	Mild	9%	9%	13%	0.039
	Severe	84%	80%	72%	
Apology + Offer of fee exemption	Mild	48%	55%	61%	0.088
	Severe	23%	26%	24%	
Apology + preventive actions	Mild	50%	30%	47%	0.038
	Severe	41%	41%	34%	
	Mild	13%	26%	34%	0.010
	Severe	69%	53%	47%	
	Mild	23%	25%	29%	0.498
	Severe	60%	52%	51%	
	Mild	63%	64%	63%	0.630
	Severe	28%	25%	20%	
	Mild	58%	51%	56%	0.225
	Severe	26%	35%	25%	
	Mild	56%	68%	70%	0.216
	Severe	28%	23%	14%	
	Mild	47%	56%	61%	0.125
	Severe	44%	28%	23%	

Upper row: % agreement; Lower row: % disagreement.  
\*: *p*-value between “error experienced” group (major + minor errors) and “no error experience” group.

three groups of “error experience” using the same manner in the previous tables. It can be seen, in general but with some exceptions, that patients who had suffered error were significantly more likely to agree with statements related to staff ability and lack of management efforts as error causes, e.g., “staff is not sufficiently responsible for their tasks” and “hospital managements do little to prevent errors”. In contrast, patients with no error experience exhibited significantly stronger perceptions about error causes to the “staff workload” factor, e.g., “working under great workload”, and “fewer doctors than really required”

5 DISCUSSION

The results of cross-national analysis suggested that Chinese patients were significantly more sceptical of doctor's disclosure actions than Japanese. One of possible reasons for the mistrust may be blame culture in Chinese hospitals. This trend of healthcare culture was not only pointed out in literature (e.g., Liu et al. 2008) but also recognised

Table 7. Chinese patients' perception of error causes by three types of error experience.

Causes of medical accidents	Major error	Minor error	No error	<i>p</i> *
Working under great workload	17%	35%	45%	0.001
Fewer nurses than really required	70%	46%	36%	
Fewer doctors than really required	31%	48%	45%	0.103
Staff does not sufficiently responsible for tasks	44%	48%	34%	
Staff is not sufficiently competent	27%	34%	38%	0.041
Inexperienced staff is often left with insufficient back-up	60%	47%	37%	
Bad doctors are allowed to continue working	59%	57%	47%	0.040
Hospital managements do little to prevent errors	28%	28%	32%	
Too few resources allocated to hospital	36%	47%	38%	0.426
	46%	32%	38%	
	36%	37%	47%	0.024
	46%	38%	30%	
	45%	48%	38%	0.214
	36%	33%	34%	
	63%	58%	47%	0.019
	30%	27%	28%	
	24%	43%	35%	0.627
	55%	39%	37%	

Upper row: % agreement; Lower row: % disagreement.  
\*: between “error experienced” group (major + minor errors) and “no error experience” group.

by Chinese patients. As mentioned in Section 3.3, not a small percentage of patients wished doctors who involved in the adverse events to be blamed and punished. From the other aspect, disclosure of adverse event may not be actually common among healthcare professionals in China (Gu & Itoh 2009). Patient perception about this phenomenon may also strengthen their mistrust in the doctor's disclosure actions.

From Japanese patients' view, doctors were more likely to disclose incident information with increase of outcome severity (Itoh & Andersen 2009). This may be partly because a severe outcome event is difficult to hide in their opinion. In contrast, Chinese patients responded that doctors were more likely to keep the event to themselves when the outcome became severe. This may also be affected by blame culture in Chinese healthcare.

The severe the event outcome is, the more serious punishment should be expected to the doctor. In addition to punishment, not a small number of Chinese patients would like to require compensation even for mental damage during their lifetimes to the hospital when they suffered major error.

In general, Chinese patients were more likely to receive the doctor's apology than Japanese when it contains at least explicit words of apology and admittance of the hospital's responsibility for the adverse event, i.e., "full" apology. However, offered "no" apology, i.e., informing about the event, or "partial" apology, i.e., just expressing sympathy, Chinese people were significantly less likely to receive these reactions than Japanese, and the percentage agreements with these two reactions were both very low. One possible reason for this reversal of Chinese and Japanese people's attitudes to these two reactions may be different viewpoints regarding patient safety. As indicated in Table 4, the strongest cause of the medical accidents was perceived a lack of staff responsibility in China. Therefore, they seemed to be unlikely to receive a reaction which did not include admittance of hospital or staff responsibility. In addition to the hospital responsibility, when the hospital offers a compensation for expenses for additional treatment and/or extended hospitalisation, they may be more likely to accept the apology.

As another reason for different attitudes between Chinese and Japanese, there may be issues related to healthcare systems. As mentioned previously, more than a half of Chinese populations do not join medical insurance system (Liu & Wang 2007). Also, some expensive and imported drugs are not covered by the public insurance (Meng et al. 2004). Therefore, Chinese patients must pay for a larger part of healthcare expenses by their own money than Japanese. This may contribute to Chinese patients' higher requirements to healthcare service and larger compensation when they suffer an adverse event.

## 6 CONCLUSION

Based on the analysis results and discussions, major outcomes of the present study can be summarised as follows: Chinese patients were more sceptical of doctors' reactions which were expected to take after an adverse event than Japanese. For instance, a greater percentage of Chinese respondents agreed that the doctor keeps the event to himself or herself, and disagreed with the following actions taken by the doctor: admitting his or her own error, and apologising to the patient. Regarding the patient attitudes to the doctor's apology reactions, on one hand, Chinese patients shared a similar trend with

Japanese: in both countries, the strongest preference was for a "full" apology with a hospital promise of taking preventive actions whereas the least effective reaction was a so-called "partial" apology (the doctor merely expressed sympathy for the event but no apology word). On the other hand, Chinese patients were more likely to forgive the doctor who involved in the event than Japanese people when he or she at least expressed sincere apology. Recent experience of suffering medical error decreased patient trusts in the doctor's disclosure actions, but almost gave no effect on their attitudes to doctor's apologies after adverse event.

Based on the outcomes of the surveys reported in this paper, it is of critical importance for Chinese healthcare professionals to maintain openness, including explicit words of responsibility, not only after an adverse event but also during their daily work to establish a good relationship with patients.

Finally, a negative patient expectation to the doctor's error reporting was coincident with the actual attitudes of healthcare professionals in China: they were much more reluctant to report incident cases than Japanese and actually a small number of cases were submitted to the hospital's reporting system (Gu & Itoh 2009). Therefore, we would suggest, as one of the urgent hospital-wide initiatives in China, to steer risk management to encouraging voluntary reporting of medical errors, and particularly including learning from errors and accidents. We believe this in turn would contribute to establishing an effective learning culture in healthcare and thus to greater patient safety.

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