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Patient views of adverse events: Comparisons of self-reported healthcare staff attitudes with disclosure of accident information

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Abstract

In the present paper, we report results of surveys in 2003 in Japan and Denmark about patients' views about adverse events, focusing on the actions of healthcare staff involved in a medical accident. Results show that patients were more likely to indicate negative expectations to a doctor's reactions after a medical accident when asked in general terms than when asked in relation to concrete case stories. When asked in general terms, 66% (47%) of Japanese (Danish) respondents expected that doctors sometimes hold back on providing information to patients about a medical accident, while 37% (7%) did so when asked about a concrete, mild-outcome case. We examine some possible reasons for the relatively high level of distrust of Japanese patients, and we discuss whether the seemingly lower level of disclosure in Japan than in Denmark and the negative stories in the Japanese press may have an impact. We also suggest some implications for introducing a patient-centred or customer-centred approach to risk management in healthcare and other domains.

Keywords: Patient safety; Disclosure of accident information; Patient questionnaire

1. Introduction

In recent years, there has been an increased attention to patient safety in Japan as in most western countries (e.g., Department of Health, 2000; Kohn et al., 1999; Runciman and Moller, 2001). One of the signs of this attention has been the extensive coverage in the Japanese press of sometimes spectacular and tragic instances of "medical errors". During 2001, for instance, the major Japanese newspapers brought stories about 412 medical accidents (Japan Nursing Association, 2002). Since then, the number of such reports in newspapers and broadcasts has continued to increase. Of course, this does not necessarily mean that more and more medical accidents happen in Japanese hospitals; it may simply reflect an increased concern in the press and among the public with patient safety. This concern involves a number of issues, but there are two large and interrelated themes that stand out.

One is the seriousness of accidents themselves in terms of frequency and degree of injury. This issue is closely related to building a safe healthcare system, including establishing appropriate safety culture and good safety structure within a healthcare organisation (e.g., Kohn et al., 1999; Reason, 1997).

The other issue is patients' mistrust in the willingness of healthcare professionals and organisations to deal candidly with a medical accident when it has happened. Until recently, the threat of litigation from injured patients was likely to be regarded as a major risk in healthcare in Japan and other countries where compensation to injured patients depends on fault—in contrast to countries that have some form of no-fault compensation, as in, e.g., Denmark. Therefore, in countries that have a fault-based compensation system only, healthcare risk management has been very much (though not exclusively, of course) aimed at

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controlling litigation (Taylor-Adams et al., 1999; Vincent et al., 1999). It may be argued that viewing patient litigation as a primary risk is likely to contribute to a negative cycle of healthcare management in terms not only of safety but also of profits: to protect a hospital from litigation safety officers as well as many other professionals are required to spend considerable efforts in characterizing and defining what may be medical accidents as unavoidable complications. Efforts spent in this way do not contribute to any increase in patient safety, of course. On the contrary, they tend to de-focus proper patient safety work and, at worst, contribute to cynicism among staff and a decline in safety culture. This leads to a vicious circle: a closed, defensive culture leads to more accidents, which leads to more litigations, which leads to even greater defensive efforts. The outcome is a reduction in patient safety and patients' trust as well as an increase in costs to hospitals.

It is therefore natural to seek to introduce patients' points of view into the debate about healthcare risk management to achieve a positive cycle of patient safety. To promote such an approach to healthcare risk management we need to know patients' wishes to and views about healthcare organisations and professionals.

There are a number of studies which have been carried out in healthcare based on data collected from patients. One of the most typical methods is to collect patient views using questionnaire-based or interview-based surveys. So far, most studies have been focused on patient satisfaction issues relating to the quality of hospital care both in western countries (e.g., Cleary and McNeil, 1988; Copenhagen County, 2005) and in Japan (e.g., Tokunaga et al., 2000). In recent years, however, a number of surveys and projects have included or sometimes focused on patients' views about safety related issues (e.g., Gallagher et al., 2003; Hingorani et al., 1999; Hobgood et al., 2002; Witman et al., 1996). In contrast, few (or no) projects in Japan, so far, have studied patient views on safety, notwithstanding that it could be useful to compare patients' views about these issues between a western country and Japan since there are major differences in healthcare systems and structures as well as in national culture (Hofstede, 1991).

Patient attitudes and wishes about the degree of disclosure after adverse events have been the subject of a few questionnaire-based surveys (Hobgood et al., 2002; Witman et al., 1996) and studies using focus group interviews (Gallagher et al., 2003). The upshot of these studies is that patients want disclosure of all error information, e.g., what happened, why the mistake happened, its consequence, and how recurrences will be prevented. Similarly, results from other patient surveys suggest that litigations and complaints about healthcare mishaps are primarily caused by the failure of the organisations, units and staff involved to deal openly with the accident; thus, patients will file a complaint or seek litigation when they receive poor or no explanation (and no apology) about the event (Bark et al., 1994; Hickson et al., 1992). Thus, it has been found that acknowledgement of error as well as a frank explanation of the event will contribute to reduced legal actions by patients and relatives (Vincent and Magi, 1994; Witman et al., 1996; Kraman and Hamm, 1999). Similar effects of disclosure are pointed out in a recent review by Manser and Staender (2005) of patient expectations after adverse events and issues surrounding disclosure.

In the present paper, we report results of surveys about patients' views about disclosure and reactions of staff after a medical accident. Our survey has sought to uncover patients' trust or mistrust in the candidness of healthcare staff, including their wishes and expectations with regard to staff reactions after adverse events. For this purpose, we have collected and compared doctors' reports about what they themselves would do and patients' expectations about doctor actions. In the following, we also present comparisons between Danish and Japanese responses, a comparison which in part may provide clues to an explanation of why the level of patient mistrust is so relatively high in Japan. We also discuss potential sources of patients' expectations not to receive disclosure of adverse events, and we refer to new perspectives in healthcare risk management prompted by the introduction of patients' point of views. Finally, we mention implications of the present study for introducing a patient-centred or consumer-centred approach to risk management in healthcare and other safety-critical domains.

2. Questionnaires and respondents

2.1. Patient surveys

To achieve the objective mentioned in the last section, we conducted several surveys for patients, doctors, nurses and risk managers using matching questionnaires.

A patient questionnaire was originally developed in Danish (used in a Danish patient survey accompanying focus group interviews with patients who had suffered medical injury), and was subsequently translated into Japanese (Andersen et al., 2004b). The questionnaire comprises eight sections asking patients of their views of various aspects of adverse events and the way they are dealt with. An additional demographic section asks respondents to fill in their consultation department, gender, age group, and experience of hospitalisation and whether they had suffered medical errors during hospitalisation. In the first two sections, respondents' reactions were elicited as responses to two fictitious adverse events—one in which the patient suffers a relatively severe outcome and the other a relatively mild outcome. The two fictitious cases, originally designed for a survey of staff attitudes to reporting (Andersen et al., 2002), were the following:

Case A (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 10-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.

Case B (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.

Each of the cases was followed by questions asking respondents to what extent they would expect, and to what extent they would want a doctor or nurse to carry out each of the following potential actions:

- Keep it to himself/herself that he/she has made a mistake;
- Talk with a close colleague about the incident;
- Write in patient's case-record about the event;
- Inform the patient about the adverse event and the future risk;
- Explain to the patient that the event was caused by his/her mistake; and
- Express his/her regrets about the event to the patient.

Responses were made in terms of ratings on a five-point Likert-type scale ranging from "definitely yes" to "definitely not".

The questions pertaining to the two cases were followed by two general questions about trust. Respondents were asked to indicate ("yes," "no" or "don't know") if they believe "that doctors and nurses sometimes hold back on providing information to patients about adverse events and mistakes?" Respondents who replied with a "yes" were then asked to indicate whether the doctor will hold information back for the sake of himself or herself, for the sake of a colleague, for the sake of the patient, or for some other reason.

Patient surveys were made in March–April of 2003 in Denmark and in December 2003 in Japan. The Danish survey collected responses from outpatients in a large metropolitan hospital in Copenhagen, where patients were approached during their waiting time in outpatient clinics. In the Japanese survey, we collected responses from both inpatients and outpatients in a teaching hospital in Tokyo. The questionnaire was distributed in every ward to inpatients who were able to fill it out by themselves and to outpatients who were waiting in the reception hall to be called to their consultation. The number of responses distributed and collected and response rate for each country sample are shown in Table 1.

2.2. *Staff surveys*

In a different survey using a questionnaire having items that matched the patient questionnaire (Itoh et al., 2002, 2005), we collected data about staff attitudes from doctors in 11 Japanese hospitals, including the hospital of the patient survey (September–November 2002). The number of responses was 391, and the response rate was 38%. This questionnaire ("doctor [I]" in the following) included the two cases quoted in the previous section. Among the items in this questionnaire, respondents were asked to rate the likelihood of their engaging in the actions described above on a five-point Likert-type scale, response options ranging, again, from "definitely yes" to "definitely not".

Another "doctor" [II] survey was conducted in November 2004 (164 responses and a 55% response rate) in the hospital from which the patient sample was drawn, using a questionnaire containing the same two cases. This time, however, a slightly different five-point scale was used: doctor respondents were asked "how many doctors in your clinical section (or department) do you think would take each of the actions?" Response options on the five-point scale were "few colleagues would do so (0–20%)," "not many colleagues would do so (20–40%)," "some colleagues would do so (40–60%)," "many colleagues would do so (60–80%)," and "almost all colleagues would do so (80–100%)".

Table 1
Responses to patient questionnaires in Denmark and Japan

	Denmark[a]			Japan		
	Distributed	Collected	Response rate	Distributed	Collected	Response rate
Outpatients	200	182	91%	1169	691	59%
Inpatients	—	—	—	270	229	85%
Total	200	182	91%	1439	920	64%

[a]Two hundred and ten Danish outpatients were offered the questionnaire, being asked face-to-face by a medical student during waiting time in outpatient clinics, 10 did not want to receive it, while the remaining 200 patients accepted it. The response rate is 87% when calculated on the basis of all 210 patients offered the questionnaire.

Using questionnaires corresponding to the doctor [II] questionnaire, we collected responses in the same hospital from 795 nurses (response rate: 85%) and 16 risk managers (response rate: 62%); in the latter group each respondent was also a leader or senior doctor in his or her clinical section.

3. Patient views about disclosure

3.1. Differences by patient attributes

Japanese patient expectations to doctor's actions after an adverse event are summarised in Table 2, which shows the proportion of patients who have negative expectations across various groups. The percentage figures represent respondents who do not expect the doctor to carry out each of the three specified actions described: inform the patient about the adverse event and the future risk; explain to the patient that the event was caused by his/her mistake; and express his/her regrets about the event to the patient. Response data are provided across group classifications comprising inpatients vs. outpatients, age groups, gender, and having vs. not having experienced medical error. As can be seen from this table, patients were likely to express more negative expectations to a doctor's actions with respect to informing the event when asked in general terms than when asked concretely for the cases described. When asked in general, it turns out that about two-thirds of respondents expect that doctors sometimes hold back on providing accident information to the patient, whereas 37% and 31% of respondents express negative expectations when asked to refer to the specific mild and severe outcome cases, respectively.

There is also an overall trend that patients' expectations are more positive with respect to the doctor's likely actions for the severe case than for the mild case for each of the three actions. The difference in expectations are relatively great and statistically significant (Mann–Whitney) for two of the three possible actions: informing about the event and future risks ($p = 0.101$); admitting the event caused by own error ($p = 0.001$); expressing regrets ($p = 0.000$).

We can also see differences in expectations across patient attributes in the data of Table 2: Outpatients' mistrust in the doctor's willingness to disclose information was slightly stronger than those of inpatients, but a significant difference was observed only with respect to the item presented in general terms about informing about the event and future risks. Dividing respondents into two groups by their age (under and over 50 years old), we find that the younger group had slightly more negative expectations to the doctor's disclosure actions than the older, observing significant differences for a few items like the results of the outpatient/inpatient classification. This modest link between age and expectations is also statistically significant when we do a rank-based correlation analysis. Thus, Spearman's rho for the question phrased in general terms about the doctor's disclosing action is -1.0 ($p<0.01$), and for the three disclosure-related items, i.e., informing about the event and future risks, admitting the event caused by own error, and expressing regrets the values are -0.829 ($p<0.05$), -0.943 ($p<0.01$) and -0.829 ($p<0.05$), respectively. The relatively more critical views of younger

Table 2
Patient expectations about doctors' actions: percentage of respondents who do *not* expect doctors to perform the action described

	Inform event and risk			Admit own error		Express regret	
Doctor's potential actions	General	Mild	Severe	Mild	Severe	Mild	Severe
Outpatients ($N = 691$)	69%	38%	32%	47%	38%	44%	31%
Inpatients ($N = 229$)	58%	33%	27%	40%	29%	37%	22%
p	0.016	0.298	0.285	0.073	0.059	0.134	0.083
Over 50 years old ($N = 406$)	58%	36%	34%	42%	36%	42%	30%
Under 50 years old ($N = 360$)	75%	38%	29%	51%	36%	45%	29%
p	0.000	0.750	0.432	0.008	0.683	0.121	0.925
Male ($N = 306$)	63%	43%	38%	51%	40%	47%	34%
Female ($N = 449$)	69%	33%	27%	44%	33%	41%	26%
p	0.001	0.005	0.000	0.084	0.013	0.045	0.010
Suffering major error ($N = 30$)	93%	43%	43%	63%	56%	62%	52%
Suffering minor error ($N = 40$)	75%	37%	23%	41%	31%	39%	26%
No error experience ($N = 395$)	62%	36%	29%	44%	33%	42%	26%
p*	0.008	0.583	0.102	0.198	0.035	0.071	0.031
Total ($N = 920$)	66%	37%	31%	45%	36%	43%	29%
Statistical test applied	χ^2	M–W	M–W	M–W	M–W	M–W	M–W

*p-value between respondents suffering major error and no error, respectively.
M–W: Mann–Whitney test.

respondents correspond to the findings from surveying different age group about their views about the quality of care in healthcare (Campbell et al., 2001). Regarding gender, we identified significant differences for most items for the two types of severity as well as for responses to the general items. As a whole, male patients' mistrust in doctors' willingness to disclose for both of the concrete cases was greater than female. However, when the questions were given a general form, female respondents showed significantly stronger suspicion of doctors' willingness to disclose.

According to a respondents' self-reported statement, 14% of patients who had been hospitalised within the last 2 years—including outpatients—had experienced minor or major medical errors. As an overall trend, respondents who have experienced a major error are more sceptical of doctors' openness than those having had no such experience. For some items, differences between these respondent groups were very large: almost all respondents (93%) who had experienced major errors were sceptical of doctors' disclosure willingness when asked in general terms compared to 60% of those having had no experience of error. For the other items in the two cases, the differences were also large, but not significant—presumably because of the sample size, i.e., the small number of patients having experienced a major error.

3.2. Cross-cultural comparisons of patient views

As mentioned above, the Danish study included only outpatients, and therefore in our cross-cultural comparison we compare the Danish data with Japanese outpatient data alone. In Fig. 1 we have indicated the percentage of respondents who do not expect the doctor to inform the patient about an adverse event and future risks. The data points represent the percentage of patients who express scepticism about the willingness of the doctor to inform of an adverse event for the general case and for the two concrete cases. Again, data points representing cross-cultural comparisons are depicted in Fig. 2 for respondents

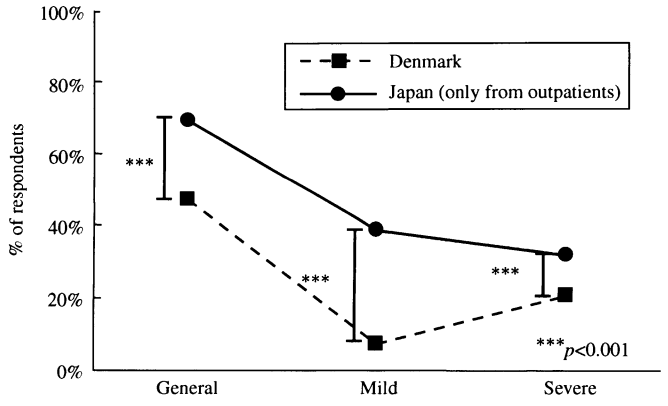

Fig. 1. Cross-cultural comparisons of patients' expectations of doctor's willingness to inform about the event and risks.

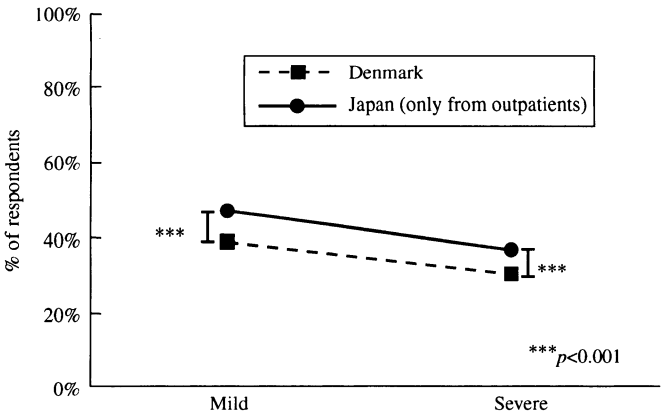

Fig. 2. Cross-cultural comparisons of patients' expectations of doctor's willingness to admit own error.

Table 3
Patient expectations about disclosure and motives for holding back on disclosing information

	Japanese outpatients ($N = 581$)	Danish outpatients ($N = 167$)
(a) "Is it your impression that doctors and nurses sometimes hold back on providing information to patients about adverse events and mistakes?"		
Yes	69%	47%
No	7%	28%
Don't know	24%	25%
Significance (χ^2)	$p<0.000$	
	Japanese outpatient ($N = 371$)	Danish outpatients ($N = 68$)
(b) "If you have answered "yes" in the previous item, please indicate what you believe is the most important reason for doctors and nurses to hold information back"?		
For the sake of himself or herself	85%	62%
For the sake of the patient	1%	16%
For the sake of colleagues	10%	12%
Other reasons	5%	10%
Significance (χ^2)	$p<0.000$	

who expressed a negative expectation about the doctor's admission of his/her own error.

A large and significant difference was observed in the level of patients' mistrust between the two countries, the Japanese respondents being much more sceptical than the Danish about doctors' willingness to tell their patients about medical mistakes. Approximately 70% of the Japanese outpatients expected that doctors sometimes hold back on providing the patient with information about the adverse event while less than half (47%) of the Danish did so. For the concrete mild outcome case, only 7% of the Danish patients had negative expectations about this potential action taken by the doctor whereas about 40% of the Japanese had so. Regarding the other disclosure

related item, the doctor's admission that the event was caused by his/her own error, there were also highly significant, though somewhat smaller differences between the two countries for the both severity cases.

Table 3 shows the assessment of patients in the two countries with regard to disclosure in general as well as their assessment of doctors' possible motives for holding back on giving information. The wording of the two questions is reproduced in the table along with the response options. Again, we find large and highly significant differences between the patients in the two countries, the Japanese patients having much less confidence in doctors' willingness to disclose medical mistakes. It is easy to misconstrue the second part (b) of Table 3 that shows which motives patients think doctors will have for holding information back. It would be misleading to say that results show that 85% of the Japanese and 62% of the Danish patients think that doctors hold information back for their own sake. These percentages are based on the subsection of patients who have answered "yes" to the first question (a) in Table 3. Therefore, among the total sample of Danish patients 62% of 47%—or 29% in total—think that doctors sometimes hold back on giving information *and* that they do so for their own sake; and among Japanese patients 69% of 85%—or 59% in total—think the same. Still, the level of distrust among Japanese patients is strikingly high, and we return to this topic in the discussion section.

3.3. Gaps between patient views and staff attitudes

We have compared patients' expectations about doctors' willingness to disclose with doctors' self-reported attitudes with regard to the two concrete cases used throughout these surveys. The staff data were obtained from the "doctor [I]" survey (cf. Section 2.2). Comparative results of the three disclosure-related actions are shown in Table 4, including p-values obtained by the Mann–Whitney test. As shown in the table, there was a large gap between doctors' own attitudes and patients' expectations.

As can also be seen in Table 4, significant differences were identified for all three items in the two adverse event cases between patients' views and doctors' self-reported attitudes. The differences were the same when we restricted the doctors' sample to including only doctors from the hospital from which the patient sample was drawn.

4. Discussion

4.1. Potential sources of patients' mistrust

Results from our surveys show that Japanese patients' mistrust in healthcare professionals and organisations about their willingness to disclose adverse events is quite large in absolute terms as well as in comparison with data from Danish patients responding to the very same questions and case stories. Overall, it seems that the level of disclosure about adverse events in Japanese hospitals is lower than that in Denmark. This assessment is based on the results of doctors' questionnaire responses about this issue between these two countries (Andersen et al., 2003). The reluctance of Japanese healthcare staff to disclose accident/incident information stems partly from pressures that "the patient may file a complaint" or "it might get out and the press might start writing about the event" (Itoh and Andersen, 2004). Fear of sanctions from the patient (family and relatives) or negative consequences stemming from the press may function—consciously or unconsciously—as a force against disclosing information of adverse events. As such, there might be a possibility that a patient–staff relationship in Japanese healthcare is currently in the negative cycle we alluded to in the introduction—patients' mistrust and staff resistance against disclosure.

As mentioned in Section 1, a large number of reports about medical accidents are published in newspapers and broadcasted in the electronic media, and on average there are a couple of new accident cases every day. These reports will typically give details of poor handling of the aftermath of a serious adverse event, such as feeble follow-up actions by the hospital involved, e.g., no explanation and no apology to the patient and family, a long delay in disclosing the facts and a long delay in compensating the patient or the family.

This kind of reporting, one may conjecture, is likely to have an impact on the public's views about hospital staff and hospital managements. The strongly negative contents provided by the print and electronic media about medical accidents and the way they are handled by Japanese hospitals is thus likely to shape public opinion and, therefore, patients' views of patient safety issues including disclosure. Moreover, it is natural to speculate that the higher degree of negativity shown by patients when they are asked in general terms may be a reflection of their

Table 4
Percentage of doctors who indicate that they themselves will not perform a given action and of patients who think doctors will not do perform the action

	Inform event and risk		Admit own error		Express regret	
	Mild	Severe	Mild	Severe	Mild	Severe
Doctors ($N = 391$)	7%	4%	26%	4%	21%	6%
Patients ($N = 920$)	37%	31%	45%	36%	43%	29%
p (Mann–Whitney)	<0.000	<0.000	<0.000	<0.000	<0.000	<0.000

immediate or "stereo-typical" response coloured by the press and public debate.

In addition, there was a relatively small proportion among respondents—i.e., 6% of those who have been hospitalised within the last two years, or 3% of all respondents—who stated they had suffered major errors in healthcare. Mistrust by this "have-experienced-error" group of respondents in medical professionals and organisation was significantly stronger than that of the "have-not-experienced-error" group. It may be natural to infer that views of the former group were based on or at least affected by their own experience of having suffered medical errors. Nevertheless, it is impossible to determine on the basis of the present data whether the patients who reported they had experienced one or several errors are more critical and perhaps are more liable to notice errors than other patients. Still, it is natural to expect that an experience of error may reinforce patients' scepticism with regard to healthcare staff's willingness to disclose adverse events.

4.2. Encouragement of openness

From the above-mentioned considerations, it might be suggested that we need to improve healthcare management systems and establish a framework which encourages an open style of divulging information to patients. At the same time, as hospitals acknowledge their responsibility not only vis-à-vis patients but also staff, doctors and nurses will gain more protection form being pilloried and therefore against the threat of disrepute. For instance, there are no official "complaint" and "compensation" systems in Japan nor is there any obligatory national system for collecting and disseminating learning from adverse events; in contrast, such systems are now being introduced in Europe (first introduced in Denmark and later in England and Wales in 2004; Andersen et al., 2004a).

At present, when an adverse event becomes known to a patient and his/her family in Japan, the healthcare staff members who have been involved in the event are very likely to become the target of criticism from the family and possibly the press; and in not so few cases also from their leaders or their hospital management. Finally, they may even become the target of personal compensation law suits. It is therefore not surprising that doctors and nurses are hesitant about being entirely open about medical mistakes and that they regard the media as one of the greatest deterrent factors against bringing up an adverse event with their colleagues and leaders.

4.3. Professionals' own views of doctors' attitudes towards disclosure and openness

Continuing the above discussion, we have analysed other data the results of which suggest that the mistrust of Japanese patients might be somewhat exaggerated. If so, the high level of scepticism that we have found among Japanese patients against healthcare staff's willingness to disclose accidents may go too far. Some evidence that their scepticism is in fact stronger than warranted may be found in Table 5 that summarises views of three professional groups of healthcare—doctors, nurses and risk managers in clinical sections—about three disclosure-related attitudes and behaviours. Here, respondents of these three groups have been asked what they think their "colleague" doctors will be likely to do in case of the mild and the severe outcome cases we have cited above (cf. Section 2.1). Respondents were asked to rate on a five-point scale, from "few doctors" to "almost all doctors," the question "how many doctors in your clinical section (or hospital) do you think will take the following actions:" informing the patient about the event and future risk, admitting the event caused by own error, and expressing the regret to the patient. The table shows percentage of respondents who stated "negative" assessment of their colleagues' likely behaviours, and thus the figures represent the sum of the lower two response options in the scale, i.e., "few doctors" and "not many doctors" for each item.

Except for two items in the mild outcome case, there were significant differences between doctors and nurses in their views about their colleague's disclosure actions. The nurses' views about doctors' attitudes were slightly more negative than doctors' expectations vis-à-vis their own colleagues. The nurse group had a much higher proportion of "neutral" responses and was less likely than the doctors to respond positively. This difference lies behind the

Table 5
Healthcare professional views about doctors' disclosure of accident information

	Inform event and risk		Admit own error		Express regret	
	Mild	Severe	Mild	Severe	Mild	Severe
Doctors ($N = 165$)	14%	4%	47%	12%	41%	5%
Nurses ($N = 803$)	14%	10%	40%	18%	32%	12%
Risk Managers ($N = 16$)	4%	0%	28%	7%	26%	0%
p (Dr. vs. Ns.) Mann–Whitney	0.006	0.000	0.758	0.000	0.668	0.000
p (Dr. vs. R.M.) Mann–Whitney	0.255	0.690	0.040	0.376	0.145	0.330

Percentages show the proportion of respondents who have answered—on a five-point Likert scale—that "few" or "not many" doctors will engage in each of the three actions described.

significant difference for the item about informing the patient about the event and future risk—which counted the identical percentage of "negative" responses between the two professional groups. Also, it should be noted that it will typically be the doctor—and not the nurse—who will be informing patients about future risks after an injury; but nurses may not feel that they know enough about doctors' interactions in these cases. On the other hand, nurses' responses to this issue were tied to their normal work situation, since they were asked to rate the attitudes of doctors with whom they were normally working and to do so according to their professional point of view. In the light of this and in light of the fact that only small differences were observed between doctors' and nurses' responses (cf. Table 5), we may surmise that the patients' strongly negative views about doctors' disclosure mentioned in Section 3 might be a little exaggerated, involving a certain amount of reflexive scepticism.

4.4. Implications and relevance

4.4.1. General steps of a customer-centred approach

The present study has been aimed, as we said above, at introducing patients' points of view into healthcare risk management, similar to various user-oriented approaches being pursued in other domains such as user-centred system design (e.g., Norman and Draper, 1986). Similarly, in the business world, quality management has long been established as a key strategy for achieving competitive advantage. The traditional quality initiatives, including Statistical Quality Control (SQC), Zero Defects and Total Quality Management (TQM), and more recently Six Sigma all apply various forms of structured approaches reducing error and enhancing quality. Six Sigma in particular includes a customer-centred approach (Kuei and Madu, 2003).

A process for solving a specific problem applying a customer-centred approach can be illustrated in Fig. 3, comprising the following five steps:

1. Set a goal or target for the specific problem;
2. Acquire and analyse active or surface phenomena connected with the goal as viewed from both the customers and the organisation;
3. Find latent factors behind the acquired active phenomena, primarily lying on the organisational side and sometimes also on the customers' side;
4. Create and implement interventions to tackle the latent factors; and

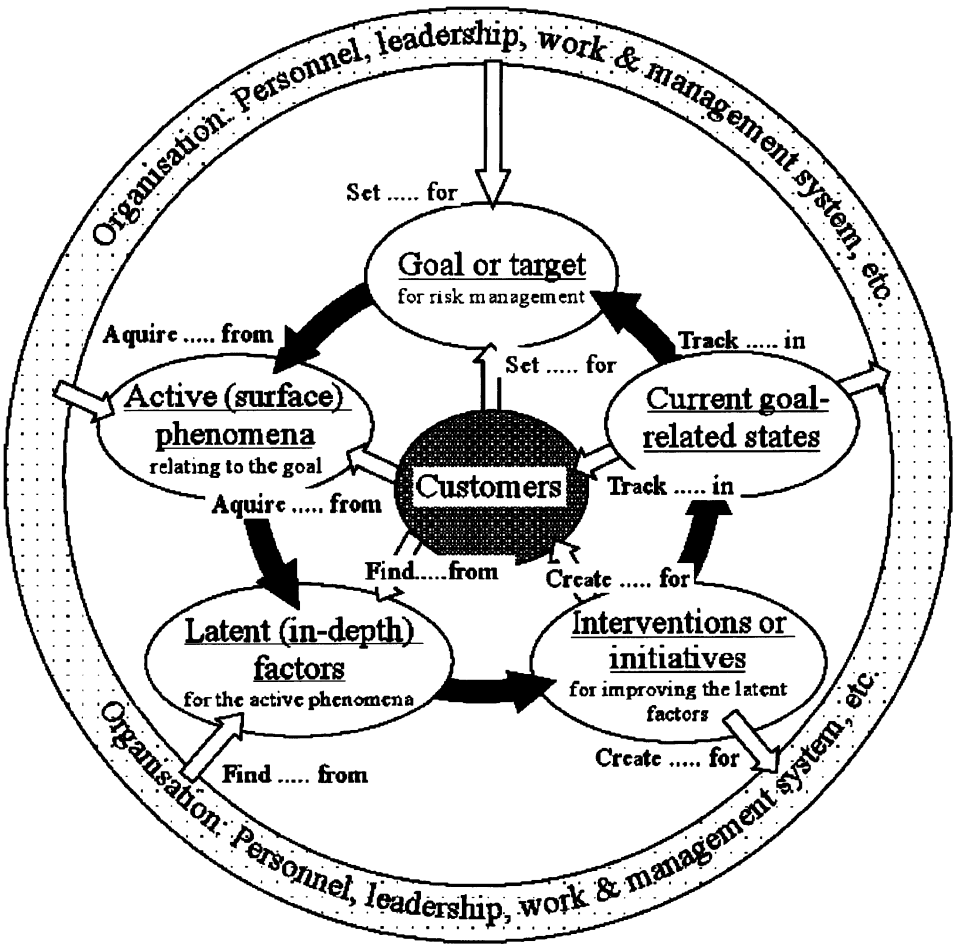

Fig. 3. Generic cycle of problem solving for customer-centred approach.

Table 6
Application examples of customer-centred problem solving approach to healthcare and railway settings

		Steps	This study (healthcare) Customers = Patients	Example in railway Customers = Passengers
1	Set	Goal or target	(Increase of) patient trust in disclosure of accident information by healthcare staff	(Improving) passenger satisfaction with a specific railway line
2	Acquire	Active phenomena	Patient expectations and wishes to healthcare staff willingness to disclose	Passengers' dissatisfaction with and wishes to current conditions in railway operations and services, etc.
3	Find	Latent factors	Potential sources of patient mistrust in healthcare staff and organisation	Potential factors behind passengers' dissatisfaction with operations, safety, services, etc.
4	Create	Interventions or initiatives	Structure and culture for enhancing disclosing actions of healthcare staff	Structure and culture for effective railway operations and services.
5	Track	Current goal-related states	Safety climate and patient views	Passengers' satisfaction and various performance measures of railway operations

5. Track (continuously or periodically) current goal-related states in organisation and customers to examine effects of the interventions.

At the end of the first cycle of this process, the goal initially set shall be evaluated against the current states, and subsequently an updated goal will be determined. As such, the problem solving process will be continued in the cycle of these steps. We believe that this problem solving cycle for the customer-centred approach would be applicable not only to issues in healthcare risk management—like the one in this study—but also to various issues tackled by human factors professionals in other domains. The present study applied this approach to the healthcare risk management, primarily targeting at the disclosure-related issue of medical accidents. Table 6 outlines applications of this approach to the issue addressed in this study and, as an illustration, an example in a different domain, i.e., customer satisfaction with railway operations.

4.4.2. *Acquiring active phenomena*

In the cycle of problem solving shown in Fig. 3, this paper has focused on Steps 2 and 3, being given a goal of increased patient trust in healthcare professionals and organisation in terms of disclosure of accident information and related actions. In Step 2, one can use various human factors and task analysis techniques such as observation, questionnaire, interviews, critical incidents and activity sampling (e.g., Kirwan and Ainsworth, 1992) to acquire active phenomena related to the specific goal.

When eliciting "active phenomena" from questionnaire data, the wording of question items and response options may affect responses. In the studies reported here, we asked patients about their expectations about the willingness of healthcare staff to disclose accident information both in general terms and concretely for two cases. When the question was asked in abstract terms, the proportion of patients who have "negative" perceptions to healthcare staff attitudes was quite high, whereas it was much lower when the question was asked in relation to concrete cases. This tendency might prompt us to use concrete items (vignettes, fictitious cases) when seeking to estimate the proportion of respondents who have positive or negative attitudes to a specific issue. In contrast, differences in responses between groups (especially cross-national comparisons) may well be identified in a sensitive way by asking respondents to react to items that are phrased in general terms. Similarly, these studies employed two sets of response options for questions about disclosure-related attitudes to healthcare staff respondents: asking about a respondent himself/herself vs. about his/her colleagues. As an overall trend, respondents tend to make slightly more positive predictions about their own likely behaviours than that of their colleagues.

4.4.3. *Finding latent factors*

When identifying latent factors in Step 3, one may possibly be required to analyse the active phenomena from various perspectives using multiple data sources. For this purpose, in this study we not only collected patient data from two countries, but also performed several surveys of patients, doctors, nurses and risk managers using similar questionnaires. We integrated these results in order to identify latent factors behind and potential causes of patient mistrust in healthcare staff. By comparing different groups' (stakeholders') attitudes and understanding of the same issues, we may be able to illuminate discrepancies that may work against safety and which, if understood by the respective groups, may contribute further to creating a safer system—such as facilitating more open communication. Such comparisons may also help us establish a baseline for deciding whether a particular action or intervention is required to initiate for improving safety (as would be the case in fields outside healthcare).

Potentially, baselines and group comparisons may be used as a basis for better understanding between groups and enhance the possibility of changing the system into something that works for all and at high levels of safety integrity.

4.4.4. Making interventions

Comparative consideration can be used in relation to intervention or policy deliberation (in Step 4). When comparing data from different nations in the light of the different legal and safety management systems we have a chance of learning from each other (best practice). We might be able to illustrate and investigate how a certain system, paradoxically, disfavours all groups and patient safety per se. In the case of healthcare, for instance, there is evidence to suggest that a certain system design (litigation, no-fault-compensation systems) has effects on staff behaviours and attitudes that in turn counteract openness and ability to learn from past mistakes.

4.5. Limitations

The present study has some limitations in terms of survey samples. We collected patient responses only from two single hospitals in Japan and in Denmark—though the samples were made among the general patient population in these hospitals. For instance, it may be objected that if we obtained a sample from patients in an other local hospital in Japan, their responses might possibly be different. Still, we have no reason to believe that the differences will be other than minor. In addition, considering slight differences between outpatients and inpatients for some items on doctors' disclosure actions, patients' views might be affected by frequency of contacts of healthcare providers and moreover their experience of receiving good care or satisfaction with hospital quality. If it is true, patients' views may vary from hospital to hospital. Therefore, it is desirable to collect responses from a number of healthcare organisations to derive sound conclusions, which represent nation-wide properties. However, as mentioned previously, views of the Japanese public about patient safety issues may be largely affected by reports of newspapers and broadcasting. Therefore, local differences in peoples' views about this issue can be expected to be small.

5. Conclusion

In the present paper, we aimed at uncovering patients' expectations of and wishes to disclosing actions taken by healthcare professionals when suffering medical errors to introduce patients' point of view into risk management in hospitals. For this purpose, we have conducted questionnaire-based surveys concerning patients' views of adverse events and errors. In particular, we have investigated patients' trust or mistrust in healthcare staff actions of disclosure of adverse events primarily based on the Japanese patient survey. In order to characterise the trust/mistrust of Japanese patients we compared Japanese patient data not only with responses from the Danish patient survey from which the original questionnaire was derived, but also with those from the survey of Japanese doctors. We have also sought to identify overt as well as potential sources for patient mistrust.

Firstly, it has been found that Japanese patients are highly suspicious about healthcare staff attitudes to disclosure of accident information. Secondly, patient expressions of mistrust about disclosure is amplified when respondents are asked in general terms compared with responses to concrete cases described in brief vignettes. This trend was revealed from the Japanese as well as the Danish survey. From these results we have formed a hypothesis regarding the patient's mistrust in medical professionals which needs to be tested through further studies: the level of patients' expression of trust and mistrust depends on whether they are asked in general terms or asked about their expectations with regard to a concretely described case in relation to "a doctor" (or "a nurse," "healthcare staff member") in such a way that the more general the question is phrased, the more critical and negative will be the expectations by respondents. Finally, several potential sources of Japanese patients' mistrust were identified as part of the reasons behind the data of this study: experience of being met with little degree of openness; the stream of uniformly negative media reports; and actual staff reluctance against openness based on fear of sanctions and punishment.

Based on the outcomes of and the process of formulating questionnaire-based surveys, we proposed general steps involved in a patient-centred and consumer-centred approach to improving safety through a more rational healthcare risk management. We believe this approach is applicable to a variety of risk management issues not only in healthcare but also in other safety-critical domains.

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