

Cross-Cultural Surveys on Healthcare Staff Views of Barriers against Adverse Event Reporting

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Abstract: The views of doctors and nurses about reporting adverse events were surveyed by questionnaires in five countries: Denmark, Iceland, Japan, New Zealand and Nigeria. Staff responses showed two underlying factors behind unwillingness to report adverse events: (a) fear of sanctions and disrepute and (b) lack of support and motivation. The factor structure, on the one hand, is completely consistent across the five country samples, and on the other, large and significant cross-national differences were found in healthcare professional views of error reporting. The reporting rate of each potential reason is also strongly affected by respondents' experience of reluctance to bring up adverse events. Based on the questionnaire results, we discuss latent causes of perceived obstacles of healthcare staff to reporting errors and strategies for reducing their levels to establish an effective "learning" culture in an organisation.

Keywords: Incident reporting; Cross-cultural comparison; Learning culture; Adverse events; Patient safety; and Questionnaire-based survey

1. Introduction

In recent years, *patient safety* has been attracted increasing attention not only in North America (e.g., Kohn et al., 1999), Australia (e.g., Runciman & Moller, 2001), and Europe (e.g., Department of Health, 2000) but also in Japan (e.g., Hirose et al., 2003). With such public concern with safety in healthcare, a growing number of hospital managers acknowledge the importance of risk prevention as one of the most crucial management issues. Various approaches can be taken to improve patient safety, e.g., introduction of human factors in equipment design, improvement of work schedule and conditions, application of safety culture assessment, safety-related training, and job redesign. Among these methods, as one of the most important and widely prevailed safety-enhancement activities, a large number of healthcare organisations are concerned with reporting and *learning from adverse events* (e.g., Department of Health, 2000). Organisational learning mechanisms and practices induce a heightened awareness about patient safety among healthcare staff and accident/incident analysis for the purpose of developing safety programmes and interventions (e.g., Itoh et al., 2003).

To manage the organisational learning from adverse events efficiently in healthcare, an effective *incident reporting system* is critically required. Such a system includes (i) an in-data part, i.e., a data entry interface with a reporting form having appropriate entry

fields as well as operational procedures that help healthcare staff to enter sufficiently “rich” descriptions of adverse events and their circumstances; (ii) an analysis part – applying root cause and human factors analysis to individual, serious events and searching collections of reports for trends and learning potential; and (iii) an out-data part that is tied to mechanisms for translating recommendations to reviews of procedures (e.g., clinical guidelines), training regimes and focused safety campaigns. Thus, the role of incident reporting systems goes further beyond organisational learning, providing as well one of the most important means for performing risk management and quality assurance in healthcare (Cullen et al., 1995; Hebert et al., 2001; Busse & Holland, 2002). In Japan, the incident reporting system has been regarded as a primary means for hospital risk management although there is not a national system for reporting adverse events. According to a survey of 346 acute hospitals, each of which had more than 400 beds in all regional areas of Japan (Itoh, 2003), more than 90% of organisations exploited adverse event reports to generate accident/incident statistics and to derive, via causal analysis of individual cases, recommendations. In addition, at least 50% of medium- and large-scale hospitals in Japan used their incident reporting system for each of the following managerial functions: development of training programmes, sharing information and analysis results of individual cases, and documentation of analysis results. In Denmark, had already introduced legislation prescribing a strictly confidential system of reporting safeguarding the anonymity outside their own department of healthcare staff members submitting reports of adverse events (Andersen et al., 2004). This reporting system, launched in January 2004, was preceded by pilot systems in several hospitals in Denmark.

Although incident reporting systems are needed in order to derive systematic learning from adverse events, several authors pointed out important problems: There is temptation to just gather data and produce tables and charts showing the distribution of particular types of events and circumstances – rather than deriving insight and learning from human factors and causal analysis of specific events (Itoh, 2003). It is not numbers of cases that are required to elicit, but stories from which we can learn, it has been observed. In addition, it has been pointed out that reporting is selective, and therefore gives no basis for a valid estimate of incidence of different types of events and causal factors (Battles & Lilford, 2003). Similarly, it has been found in various types of wards and clinical specialties that only part of actual incidents has been reported (Antonow et al., 2000; Bates et al., 1995; Classen et al., 1997; Cullen et al., 1995; Elnitsky et al., 1997; Jayasuriya & Anandaciva, 1995; Leape et al., 1991; Moride et al., 1997; Royal Collage of Anaesthetists,

1999; Sutton et al., 1994). Antonow et al. (2000) reported only 4.8% of medication errors were described by written incident reports during their six-month research period in paediatric wards. Cullen et al. (1995) reported that only a small fraction (7%) of all adverse drug events were detected by incident reports, even though most of them were described in the patient chart. Allan and Baker (1990) found a massive discrepancy between the number of medication errors documented in incident reports during a year and that found by direct observation extrapolated over the year. Similarly, the mean rate of medication error by observation was 9.6% whereas chart review and incident reports combined detected a mean rate of 0.2% (Shannon & De Muth, 1987). Regarding such unreported cases, it has been also found that the submission rate of incident reports varies across professional groups and job ranks in healthcare (Vincent et al., 1999). As a general trend, the rate with which doctors bring up incidents is rather low, compared with that of nurses. Beckmann et al. (1996) reported in their study for intensive care the submission rates of incident reports from doctors and nurses were 22% and 74%, respectively.

With regard to factors causing underreporting of incident cases, one of the issues most frequently discussed is the voluntary or mandatory nature of the reports as well as anonymity, confidentiality or identification of reporters (e.g., Kaplan & Barach, 2002). Staender et al. (1997) mentioned that voluntary reporting systems underestimate the frequency of incidents, but not necessarily the nature of problems, even when the reporter is protected from punishment and identification. On the other hand, from viewpoints of accuracy and richness of incident information described in the report, many researches recommend a voluntary system which has allowed us to identify the wide scope of safety problems and explore their organisation based causes. For instance, Cohen (2000) suggested a non-punitive, confidential, voluntary reporting system primarily because voluntary programmes provide frontline practitioners with the opportunity to tell the complete story without fear of retribution, and therefore this contributes to providing more useful information about errors and their causes than a mandatory reporting system. Healthcare staff who is forced to report an error is less likely to provide in depth information because his/her primary motivation is self protection and adherence to a requirement, not to help others avoid the same tragedy (Cohen, 2000).

In addition to the above-mentioned system based aspects, unreported incidents may be intimately connected to *safety culture* or climate in healthcare. In early 1990's, the professional cultures of medicine and nursing typically used "blame" to achieve proper performance, and errors were regarded as someone's fault, caused by a lack of sufficient

attention (Leape, 1994). Similarly, medical authorities were not supposed to err, and this need of infallibility provided doctors and nurses with a strong pressure to intellectual dishonesty, to cover up mistakes rather than to admit them (McIntyre & Popper, 1989). Therefore, doctors and nurses were believed to make no mistakes if they could be properly trained and motivated. In such an organisation, methods used to achieve a goal of patient safety were training and punishment (Leape, 1994). Parker and Lawton (2003) mentioned that blame culture still remains in healthcare: “until recently there has been a tendency in the healthcare system to assume that all errors involve individual incompetence, and that retraining and monitoring are the keys to improvement.” Such a cultural aspect, in particular the emphasis on blaming the individual and the threat of litigation, might be a source of underreporting errors (Lawton & Parker, 2002). A culture characterised as “blame”, therefore, seems to function against the success of any incident reporting system.

There have been research projects that have tried to seek specific reasons for staff unwillingness to report errors. As a result, a number of reasons – too many different reasons, among which a small number of dominant or critically forceful ones might have to be acquired for effective application to healthcare practices – have been suggested from different parties, e.g., countries, specialties and professional groups, in the medical domain. Vincent et al. (1999) examined twelve potential reasons for not reporting, and it is found that all mean ratings of these items were below 50%, suggesting that the majority of staff disagreed that each reason is a strong barrier to incident reporting. In this investigation, however, a considerable number of staff expressed some reservations, agreeing that circumstances often made reporting unnecessary (31% agreement as a reason), that junior staff could be unfairly blamed (36%), that it increased workload (29%), or that they were worried about litigation (23%). In addition, 30% of respondents agreed that they did not report simply because they were busy and forgot it. Similarly, O'Connor (1996) suggested that healthcare staff might be reluctant to report incidents because of fear of censure, the stigma associated with making a mistake or legal implications. Cullen et al. (1995) discussed the following reasons for not reporting adverse events based on their survey results: (1) observer is too busy to fill out the form, especially when it calls for narrative responses; (2) belief that the reporting process is of little value because feedback to those reporting is lacking; (3) fear that disciplinary action might be taken against the individual responsible for the event or the individual writing the report; (4) reluctance of nurses to report incidents involving physicians; (5) concern that the incident report might subject the reporter or others to a lawsuit; (6) failure to recognise that an incident has occurred, that is,

a chance in the patient's condition due to treatment, e.g., inexperience and faulty knowledge base; and (7) lack of understanding of what types of incidents should be reported. Antonow et al. (2000) discussed that many factors are related as reasons for underreporting errors by traditional written incident reporting, including the clerical burden of reporting, fear of repercussions, and time limitations due to activities resulting from the error.

While the above-mentioned researches explored sets of specific reasons, there have been other articles which have explained reasons for not reporting by a small number of factors or aspects. These factors might be suggested by authors' professional experiences, but not based on systematic analysis. The construct of factors differs in the articles. For instance, Leape (1999) mentioned based on his experience that there are really only two factors for not reporting: (1) fear; and (2) lack of belief that it results in improvement. The former factor is itself multi-dimensional, including guilt, fear of embarrassment, punishment of staff him/herself and of others, and litigation, while regarding the latter the 'system' believes it: the usual response to an error is either overt punishment or an effort to improve the individual's performance. Cohen (2000) classified barriers to incident reporting into three categories: (1) fear of individual or organisational repercussion; (2) the false belief that medical error can be used as a measure of practitioners' competence; and (3) potential legal discovery of error reports.

Shifting focus to other domains rather than medicine such as aviation, chemical and process industries, there have been a number of projects – more work than in healthcare – investigating important factors or reasons for not reporting accidents and incidents. Like in the medical domain, issues involved in “blame culture” or social/in-organisation pressures have been frequently pointed out as one of the most crucial factors for impedance of error reporting since 1970's. Adams and Hartwell (1977) studied in the steel industry, and identified a culture based problem associated with processing of accident information: Information might be selectively filtered before transfer to higher hierarchical levels in an organisation to avoid blame and liability issues. Webb et al. (1989) similarly mentioned, in their “filter” model for work injury reporting, that the attribution of responsibility and blame is a filtering factor in reporting. O'Leary (1995) also reported about fear of blaming in aviation as follows: Legal judgements have often ignored performance reducing circumstances; there is a high pressure from society to allocate blame and punish someone; the military culture exists in aviation; and pilots, justified or not, feel responsible or even guilty for mishaps. Similarly, Bridges (2000) concluded, through surveys in chemical

process plants, that fear of disciplinary actions and of teasing by co-workers is among the primary reasons for lack of reporting.

In addition to these reasons connecting to “blaming”, practical reasons against a reporting system have been also pointed out in the non-medical domains. For instance, Powell et al. (1971) observed that people soon find incident reporting useless when no one ever reads and uses the reports; and that the reporting rate lowers when those to whom one has to report do not understand the job of the persons involved in the incidents. Elwell (1995) mentioned that human errors, especially when they have not been observed by others, are underreported in aviation, and explained as its major reason that flight crew members may be too embarrassed to report their mistakes, or they expect to be punished. Similarly, Glendon (1991) suggested the amount of time and effort involved in reporting as practical reasons for deciding not to report an incident case. In addition, Bridges (2000) also identified the following practical reasons for lack of reporting: high levels of efforts required to report and investigate near misses; and not knowing which system to use; lack of understanding what constitutes a near miss versus a non-incident; lack of incentives for reporting; or even disincentives, for instance, when reporting hurts the department’s safety performance and reduces related bonuses. Based on their wide-range of literature surveys and from the perspectives of individual employees investigated in chemical plants, van der Schaaf and Kanse (2004) grouped the factors influencing reluctance of incident reporting into four categories: (1) fear of disciplinary action (as a result of “blame culture”) or of other people’s reactions (embarrassment); (2) risk acceptance; (3) useless (perceived attitudes of management taking no notice, not likely to do anything about it); and (4) practical reasons (too time-consuming; too difficult).

The present paper aims at uncovering and generalising the views of doctors and nurses about reporting adverse events, acknowledging the above-mentioned existing work carried out not only in healthcare but also in other safety-critical domains. For this purpose, particularly focusing on causes of healthcare staff reluctance to report adverse events, we elicit underlying factors behind obstacles of error reporting through questionnaire responses to a set of potential reasons, which were formulated with reference to outcomes of focus group interviews and literature surveys, from doctors and nurses in five countries. Comparing results of the multi-national questionnaire-based surveys, we review consistency and reliability of the factor structure as well as similarities or cross-national differences in strength of each reason for not reporting adverse events. Based on these results, we discuss links of each country’s forceful reasons to cultural and structural

aspects relating to healthcare practices, and describe strategies for reducing perceived obstacles to reporting errors.

2. Questionnaires and Respondents

2.1 Potential reasons offered

We used two questionnaires for five country surveys – one was originally made for the Danish survey and the other was developed for surveys in the other four countries, i.e., Iceland, Japan, New Zealand and Nigeria. The two questionnaires differed in certain parts but shared exactly the same parts regarding reasons for not reporting adverse events/errors as well as regarding their attitudes to reporting errors and to interaction with patients who suffered an adverse event (Andersen et al., 2002). In the present study, only the former part, i.e., reasons for not reporting adverse events/errors, were used. The potential reasons for not reporting offered in the questionnaire are shown in Table 1. Respondents were asked to indicate their agreement or disagreement on a five-point Likert scale (from ‘strongly disagree’ to ‘strongly agree’, including a neutral option) with each of 13 statements describing potential reasons for not reporting adverse events (closed questions). These items were generated following results of focus group interviews and with reference to existing literature mentioned in Section 1. The respondents were also asked to rate their experience of reluctance to bring up adverse events on the same five-point Likert scale in the following question: “There have been situations where I have been reluctant to bring up adverse events/errors?” In addition to the 13 potential reasons plus the item on reluctance experience, they were asked to describe, in an open-ended question and therefore in their own words, any additional or different reasons they might have for not reporting.

A questionnaire for the Danish survey was described in their mother language, i.e., Danish. The other questionnaire had two different language versions: English and Japanese. Question items used in this study were first translated into English from the original Danish version. Then, these English written items were translated into Japanese, and the translation was carefully checked by several Japanese doctors and nurses. The Japanese version was used only for the Japanese survey while the English version was applied to the other three country surveys, i.e., Iceland, New Zealand and Nigeria.

Table 1 Potential reasons for not bringing up events/errors offered in the questionnaire

Abbreviations	Potential reasons offered
<ul style="list-style-type: none"> ● No tradition ● Forget when busy ● Patient complaint ● Don't know who responsible ● Reprimand ● My career ● No help for the patient ● The press ● Licensing board ● Cumbersome ● No trust in department ● Appearing incompetent ● No improvement 	<p>We have no tradition in my department for bringing up adverse events/errors.</p> <p>When I am busy I forget to bring up adverse events/errors.</p> <p>The patient may file a complaint.</p> <p>I don't know who is responsible for bringing up adverse events/errors.</p> <p>I might get a reprimand.</p> <p>It might have consequences for my future employment or career.</p> <p>It wouldn't help the patients that I bring up my own events/errors.</p> <p>It might get out and the press might start writing about it.</p> <p>The adverse event/error may become reported to the medical licensing board.</p> <p>It is too cumbersome to bring up adverse events/errors.</p> <p>One does not feel confidential about bringing up adverse events/errors in our department.</p> <p>I do not wish to appear as an incompetent doctor [nurse].</p> <p>Bringing up adverse events/errors will not lead to any improvement in our ward.</p>

Table 2 Collected responses and response rates in each country sample

Country	Doctors		Nurses		Pharmacists		Others [†]	Total	
Denmark	703	46%	1,305	53%	0	–	0	2,008	50%
Iceland	29	29%	54	100%	0	–	0	83	55%
Japan	391	38%	5,171	90%	199	93%	208	5,969	84%
New Zealand	57	42%	142	71%	21	100%	0	220	63%
Nigeria	164	96%	59	95%	26	100%	3	252	98%
Total	1,344	46%	6,731	79%	246	97%	211	8,532	73%

[†]Other professionals include inspection technicians and rehabilitation specialists, and responses with no description in the professional category.

2.2 Surveyed samples

The surveys were carried out between 2002 and 2004 in five countries: Denmark, Japan, Nigeria, Iceland and New Zealand. The number of responses and response rate collected in each country sample are shown in Table 2 based on professional groups, i.e., doctors, nurses and pharmacists. The Danish sample was collected from 12 hospitals in four counties of Denmark. Responses from a single healthcare organisation were included in the Icelandic sample since it is only a large hospital in which we might be able to distribute (and – more importantly – to collect) the questionnaire to more than 100 doctors and 50 nurses in this country. The Japanese sample comprised approximately 6,000 responses, collected from 22 hospitals dispersed in all regional areas of Japan – six hospitals in metropolitan areas and most of the other hospitals were local central hospitals. The sample

of New Zealand included responses from 14 hospitals, six of which were based in city areas and the other hospitals were located in a rural environment. In the Nigerian sample, we collected questionnaire responses from doctors and nurses working in three university based teaching hospitals, all of which were located in (non-capital) local cities of this country.

As can be seen in Table 2, response rates of the nurse group were reasonably high in most country samples, with 79% of the mean response rate across the five countries. In contrast, those of the doctor group were not high enough to insist on non-biased samples except for the Nigerian sample. Excluding this country's sample, the mean response rate of doctors was 39% across the four countries. In the present paper, responses only from doctors and nurses in each country sample were used for data analysis.

3. Underlying Factors for Not Reporting

3.1 Two common barriers to reporting

A principal component analysis was applied separately to each of the five country samples, aggregating responses from both doctors and nurses, to elicit underlying factors behind obstacles to reporting adverse events/errors. The results of the analysis with all five country samples are shown in Table 3 in terms of factor loadings, Cronbach's alpha and variance accounted for each principal component. As clearly indicated in this table, a consistent set of factors were obtained independently from the five country samples with accounting for 56-57% of the cumulative variance. The 13 potential reasons offered for hindrance to error reporting were exclusively divided into two principal components on basis of their factor loadings. It is of great interest not only to obtain perfectly identical two principal components from each of the five country samples but also to account almost identical variances for each sample. Each factor was comprised by exactly the same set of potential reasons across the five countries, some of which even differ in national cultures, i.e., Europe, Oceania, Africa and Asia (Hofstede, 1991; 2001). In addition, Cronbach's alpha of each factor is reasonably high in every country sample. This implies that two sets of items identified by the analysis can reliably measure a single bi-dimensional latent construct.

For the first principal component (Factor I), accounting for 42-45% of variance in each of the five country samples, Table 3 indicates that factor loadings of the following items were particularly high: "I might get a reprimand", "The adverse event/error may

become reported to the medical licensing board”, “It might have consequences for my future employment or career”, “The patient may file a complaint”, “I do not wish to appear as an incompetent doctor [nurse]” and “It might get out and the press might start writing about the event”. All of these statements describe various forces or possible consequences – either stemming from a personal sense of professional pride (“competent doctor [nurse]”) or from considerations of negative pressures inside or outside of the organisation. Therefore, we have labelled this principal component a factor on “*fear of sanctions and disrepute*”.

Table 3 Two principal components on hindrance to reporting adverse events obtained from each country sample

	DK		IS		JP		NZ		NG	
	I	II	I	II	I	II	I	II	I	II
I. Fear of sanctions and disrepute										
Licensing board	0.813	-0.337	0.837	-0.169	0.825	-0.226	0.843	-0.287	0.710	-0.334
The press	0.681	-0.292	0.787	-0.016	0.810	-0.249	0.738	-0.180	0.744	-0.341
Future career	0.811	-0.265	0.823	-0.345	0.794	-0.230	0.852	-0.228	0.748	-0.457
Reprimand	0.855	-0.261	0.739	-0.094	0.763	-0.293	0.784	-0.127	0.767	-0.191
Patient complaint	0.779	-0.176	0.705	-0.402	0.718	-0.272	0.709	-0.223	0.531	-0.511
Appearing incompetent	0.769	-0.020	0.747	-0.359	0.715	-0.063	0.776	-0.198	0.765	-0.368
II. Lack of support and motivation										
No trust in department	0.632	0.319	0.772	0.260	0.630	0.348	0.618	0.488	0.599	0.197
Cumbersome	0.524	0.489	0.660	0.170	0.579	0.422	0.548	0.567	0.684	0.274
No help for the patient	0.391	0.120	0.479	0.276	0.564	0.391	0.549	0.093	0.629	0.355
No improvement	0.494	0.436	0.450	0.476	0.489	0.541	0.467	0.334	0.489	0.520
Don't know who responsible	0.468	0.461	0.610	0.294	0.439	0.451	0.340	0.346	0.608	0.405
No tradition	0.533	0.488	0.590	0.579	0.359	0.535	0.358	0.523	0.445	0.471
Forget when busy	0.352	0.415	0.340	0.095	0.341	0.582	0.439	0.562	0.489	0.477
Cronbach's alpha	0.894	0.756	0.895	0.766	0.890	0.801	0.896	0.761	0.882	0.810
Variance accounted for	45%	11%	46%	10%	44%	13%	45%	12%	42%	15%

DK: Denmark, IS: Iceland, JP: Japan, NZ: New Zealand, NG: Nigeria

The second principal component (Factor II), accounting for 10-15% of variance for each country sample, was composed of the rest of the 13 potential reasons (which were highly loaded whereas all of the other items for this factor were negatively loaded and very low): “One does not feel confidential about bringing up adverse events/errors in our department/ward”, “It is too cumbersome to bring up adverse events/errors”, “It wouldn't help the patients that I bring up my own events/errors”, “Bringing up adverse events/errors will not lead to any improvement in our department/ward”, “I do not know who is responsible for bringing up adverse events/errors”, “We have no tradition in my department/ward for bringing up adverse events/errors” and “When I am busy I forget to bring up adverse events/errors”. Any item of these statements is intimately connecting to

organisational or work-related issues which may influence – encourage or discourage – employees to report adverse events/errors. Accordingly, the principal component comprising these items has been labelled a factor on “*lack of support and motivation*” (for reporting adverse events/errors).

3.2 Factor-based cross-national comparisons

Figure 1 shows the graph plotting of the doctor and the nurse group in the five country samples in terms of mean scores of questionnaire responses to the above-mentioned two factors on obstacles to reporting adverse events/errors. This figure indicates some overall trends on staff views of barriers to reporting adverse events. Firstly, the fear of sanctions and disrepute (representing in the horizontal axis) is a stronger barrier against error reporting for both doctors and nurses than the lack of support and motivation (in the vertical axis) in every country surveyed in this study. In particular, the Nigerian doctors and nurses exhibited far stronger negative influences received from the former factor than any other country’s healthcare providers. In the rest of the country samples, the former factor was negatively more impacted to doctors’ reporting behaviour by 12% on average than the latter factor (2.48 versus 2.18 in terms of mean scores, excluding the Nigerian sample). Similarly, nurses in these four countries were negatively influenced against error reporting attitudes 24% more strongly from the fear of sanctions and disrepute, compared with the lack of support and motivation (2.39 versus 1.81). Connecting to such strong emphasis on the fear of sanctions and disrepute, in the beginning and middle of 1990’s, many healthcare employees viewed the incident reporting primarily as a disciplinary tool rather than a quality management instrument (Cullen et al., 1995). The result mentioned here may support that such a view of “blaming” about the reporting system is, more or less, still remained in healthcare.

Secondly, doctors are more likely to perceive, in particular, Factor II as barriers to reporting adverse events than nurses in most countries. Only in the Icelandic sample both doctors’ and nurses’ responses were alike in terms of these two factors: no significant differences were identified between the doctor and the nurse group in this country for all the 13 potential reasons (the results of the Mann-Whitney test will be shown in Table 4 with rank orders of these reasons in terms of their strength). The influence of the lack of support and motivation tends to distinguish to a much greater extent doctors and nurses independent of nationality. There were significant differences between doctors and nurses

in all the country samples except the Icelandic for most items representing this factor. Thus, doctors receive a greater impact from the lack of support and motivation than nurses on their potential reluctance to report adverse events.

In contrast, as mentioned above, the fear of sanctions and disrepute gives similarly more negative effects on error reporting both to doctors and nurses than Factor II. There were not large differences in responses to the former factor between the doctor and the nurse group in some country samples. For instance, no significant differences were observed between these two professional groups for the items “my career might suffer” and “the event may be reported to the medical licensing board” in any country sample; for the item “I might get reprimand” in four country samples except the Japanese; and for the item “fear of appearing incompetent” in three country samples.

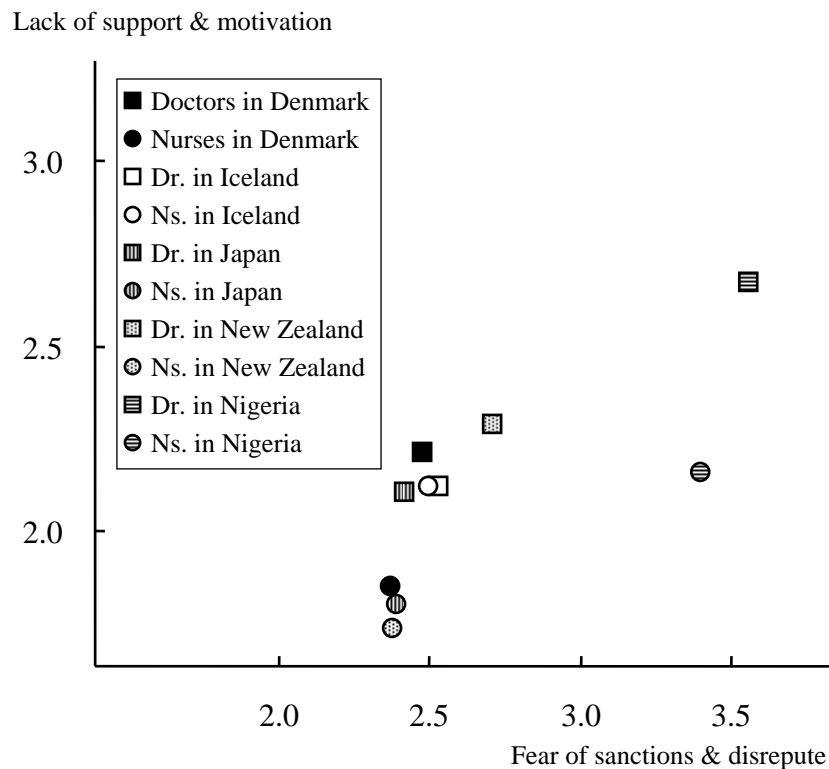


Figure 1 Mean scores of each country’s healthcare staff responses to the two factors on hindrance to reporting adverse events

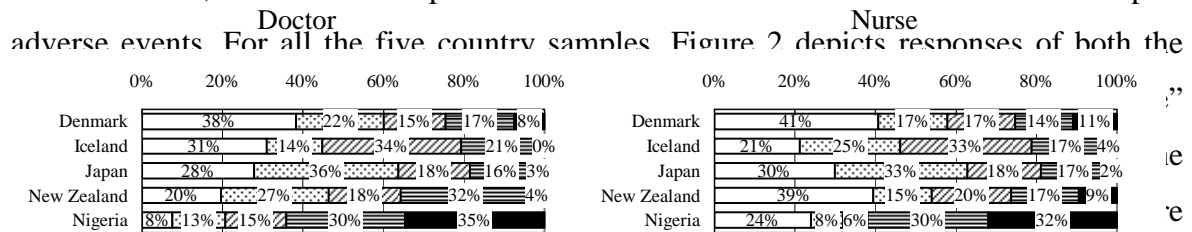
Finally, cross-national differences seem to be rather large in both of these factors for some pairs of countries – as will be mentioned in detail in the next section. As mentioned above, the Nigerian sample was mapped far from the rest of countries for both doctors and nurses. Looking at the graph mapping in Figure 1 separately for the doctor and the nurse group – excluding the Nigerian sample – responses of the four country samples can be seen

more alike in terms of the two factors behind unwillingness to report adverse events. Yet, small differences can be seen between countries, for instance, in the doctor group's responses to the fear of sanctions and disrepute, e.g., New Zealand vs. others, and in the nurse group's responses to lack of support and motivation, e.g., Iceland vs. others.

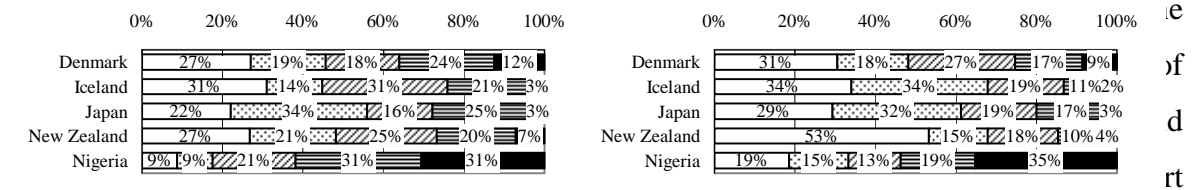
4. Cross-cultural Comparisons of Strong Reasons

4.1 Overall trend across countries

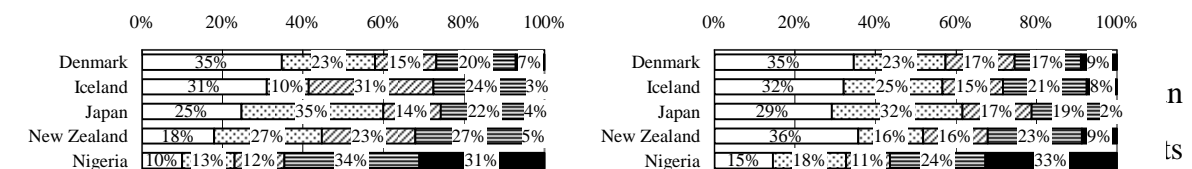
In this section, we mention impacts of individual reasons on staff reluctance to report adverse events. For all the five country samples, Figure 2 depicts responses of both the



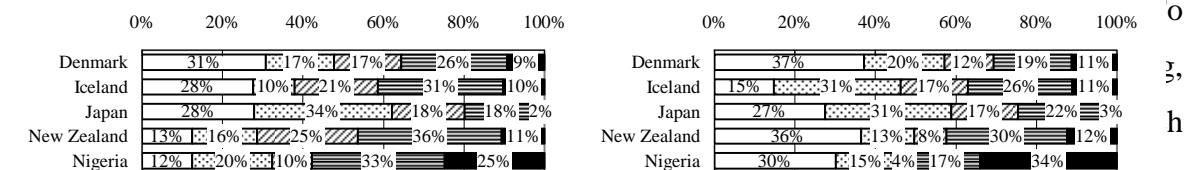
3. Except for the Nigerian staff, (a) Licensing board (b) The press (c) My career (d) Appearing incompetent (e) Reprimand (f) Patient complaint



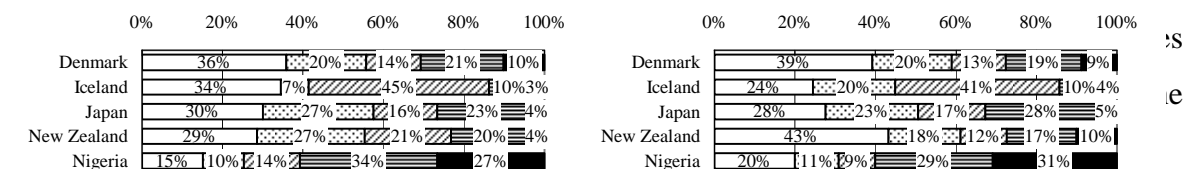
and motivation with which nurses agreed as reasons even in this



with which a relatively greater number of staff agreed as reasons for not reporting



be seen in this figure, the latter group gave far stronger ratings as reasons



(f) Patient complaint

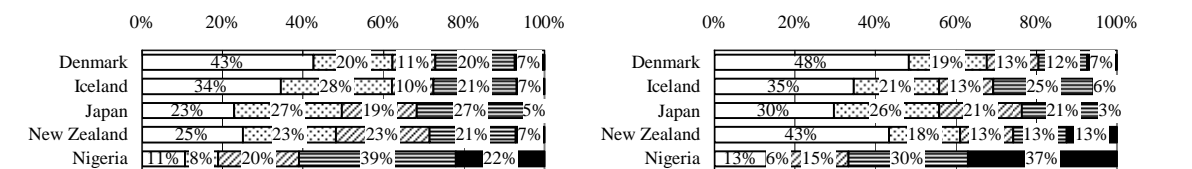


Figure 2 Healthcare staff responses to items relating to “fear of sanctions and disrepute” as reasons for not reporting adverse events

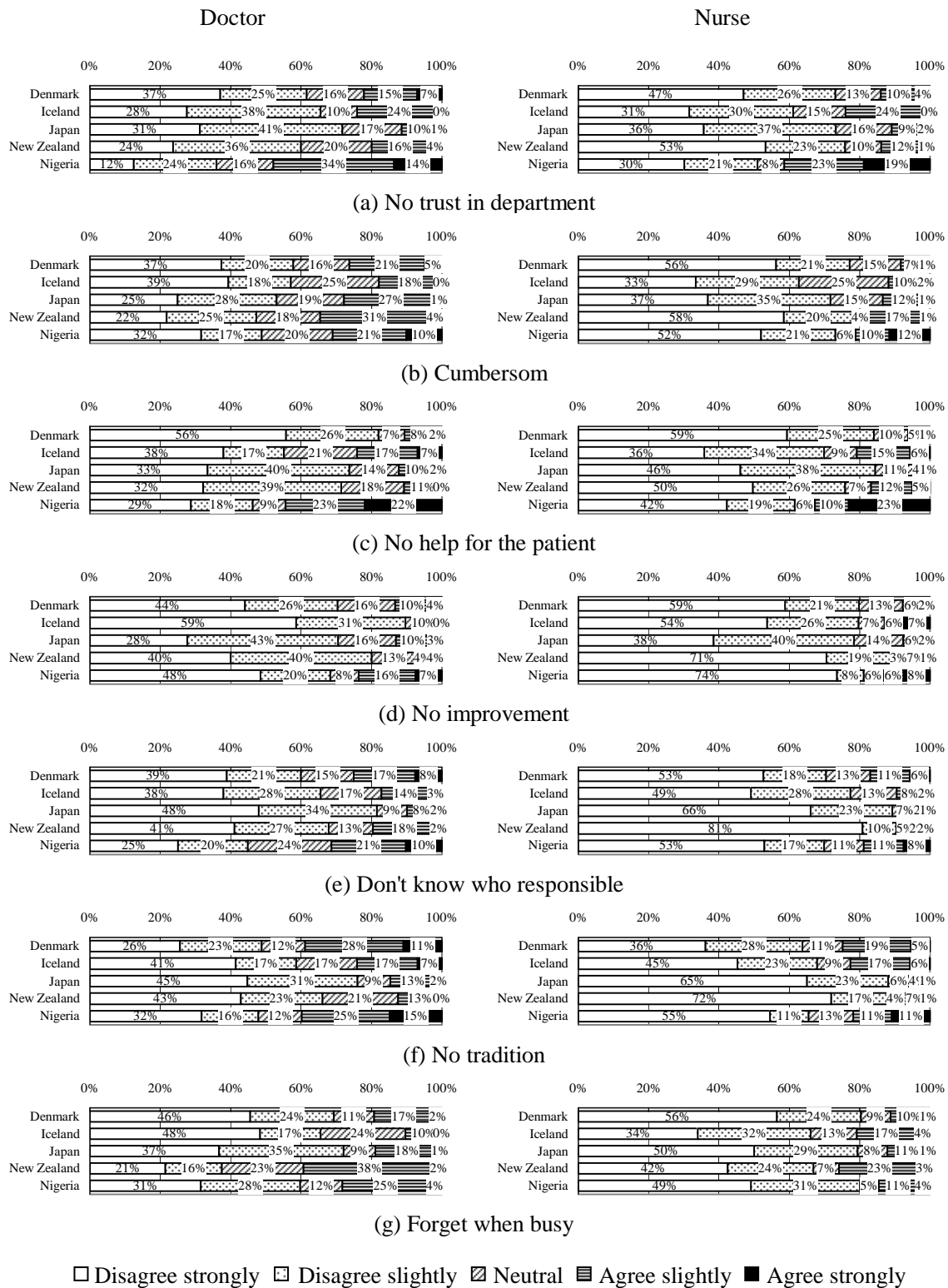


Figure 3 Healthcare staff responses to items relating to “lack of support and motivation” as reasons for not reporting adverse events

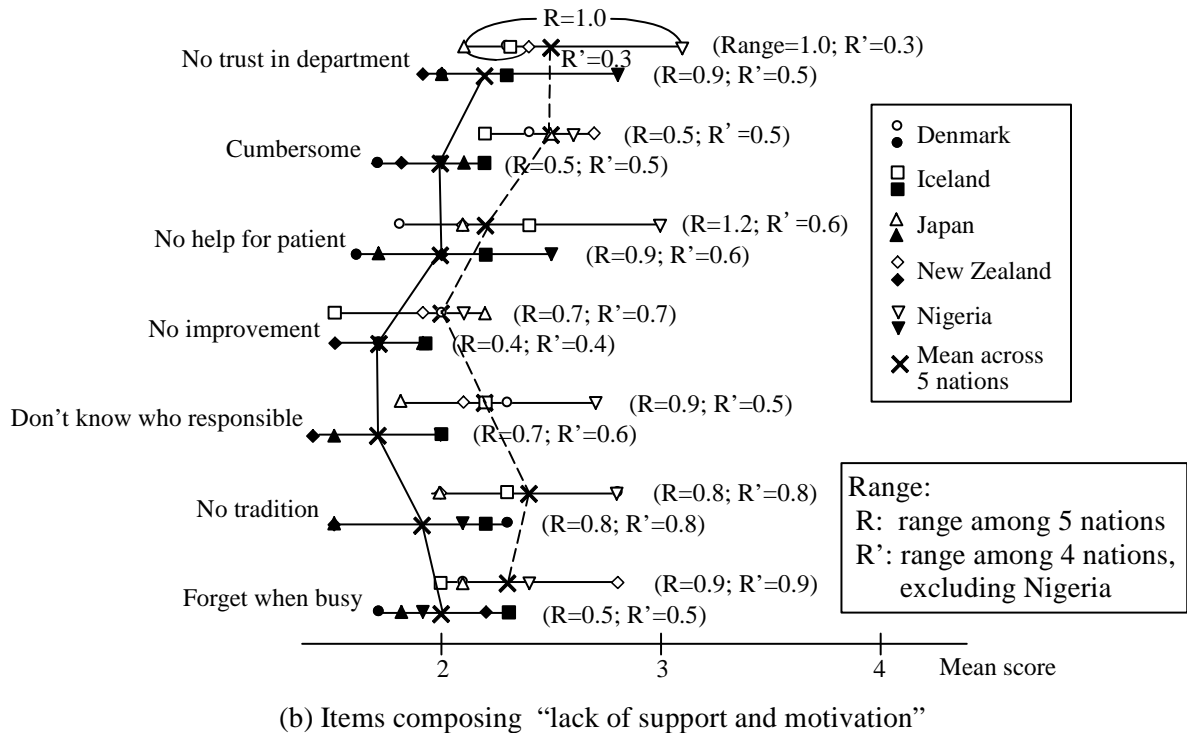
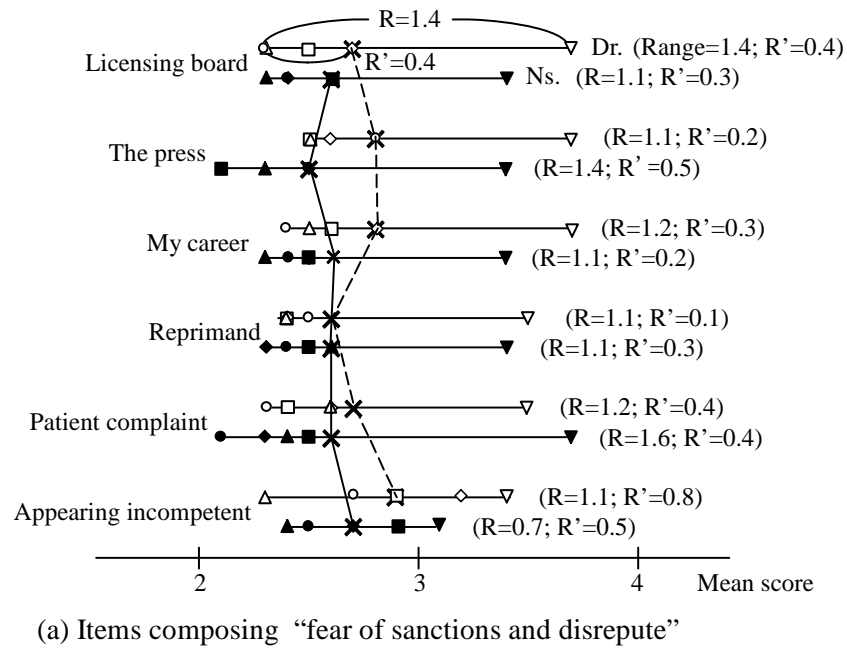


Figure 4 Mean strength and variance of each potential reason for not reporting across five nations

As can be seen in Figure 4, the three strongest reasons for doctors across the countries are “appearing incompetent”, “my career” and “the press”, all of which are fallen into the fear of sanctions and disrepute. Other reasons classified into this factor are also

relatively stronger than those composing the other factor. A similar trend can be seen for nurses' strong reasons for not reporting: reasons classified into the factor of "fear of sanctions and disrepute" are relatively stronger than those of the other factor. The three strongest reasons for the nurse group are "appearing incompetent", "reprimand" and "patient complaint".

Table 4 Country-based ranks of "greater" impact for each of potential reason and Mann-Whitney significance between doctors and nurses

Reasons for not reporting	DK		IS		JP		NZ		NG	
	Dr.	Ns.	Dr.	Ns.	Dr.	Ns.	Dr.	Ns.	Dr.	Ns.
I. Fear of sanctions and disrepute										
Licensing board rank	9	5	8	6	8	6	3	4	2	2
Significance level	$p=0.934$		$p=0.71$		$p=0.779$		$p=0.073$		$p=0.308$	
The press	2	3	4	10	2	5	7	9	3	5
	$p=0.001$		$p=0.171$		$p=0.001$		$p=0.002$		$p=0.378$	
My career	6	4	2	3	5	4	5	2	1	4
	$p=0.945$		$p=0.689$		$p=0.059$		$p=0.165$		$p=0.474$	
Reprimand	4	2	11	9	4	1	8	3	5	3
	$p=0.076$		$p=0.836$		$p=0.019$		$p=0.973$		$p=0.364$	
Patient complaint	5	7	2	2	1	3	6	6	4	1
	$p=0.002$		$p=0.818$		$p=0.001$		$p=0.089$		$p=0.165$	
Appearing incompetent	3	1	1	1	6	2	1	1	6	6
	$p=0.002$		$p=0.818$		$p=0.001$		$p=0.089$		$p=0.165$	
II. Lack of support and motivation										
No trust in our department	10	19	4	4	12	9	9	10	7	7
	$p=0.000$		$p=0.972$		$p=0.156$		$p=0.001$		$p=0.144$	
Cumbersome	7	11	9	12	2	7	4	7	11	10
	$p=0.000$		$p=0.923$		$p=0.000$		$p=0.000$		$p=0.111$	
No help for the patient	13	13	4	7	11	12	12	8	8	8
	$p=0.065$		$p=0.642$		$p=0.000$		$p=0.151$		$p=0.130$	
No improvement	12	12	13	11	10	10	13	12	13	13
	$p=0.000$		$p=0.410$		$p=0.000$		$p=0.000$		$p=0.005$	
Don't know who responsible	8	8	10	13	13	13	10	13	10	11
	$p=0.000$		$p=0.225$		$p=0.000$		$p=0.000$		$p=0.001$	
No tradition	1	6	4	5	9	11	11	11	9	9
	$p=0.000$		$p=0.620$		$p=0.000$		$p=0.000$		$p=0.005$	
Forget when busy	11	10	12	7	7	8	2	5	12	12
	$p=0.000$		$p=0.305$		$p=0.000$		$p=0.001$		$p=0.006$	

DK: Denmark, IS: Iceland, JP: Japan, NZ: New Zealand, NG: Nigeria

Upper row: ranks of impact in terms of percentage agreements

Lower row: Mann-Whitney significance levels between doctor and nurse group

As mentioned above, on the one hand, reasons pertaining to the "lack of support and motivation" are not strong as obstacles to bringing up adverse events/errors for healthcare employees, and in particular weak for nurses. On the other hand, strength as reasons for not reporting varies more diversified from county to country for items composing this

factor than those of the “fear of sanctions and disrepute”. On basis of the response range of mean score among four countries excluding the Nigerian sample – since the mean score of their agreement was far higher for almost every item than the rest of the countries surveyed, as mentioned previously – cross-national variation is greater for items from the “lack of support and motivation” than those from the “fear of sanctions and disrepute”. In particular, “forget when busy”, “no tradition” and “appearing incompetent” – only the latter item is from the “fear of sanctions and disrepute” among the five most diversified reasons across countries – are top three reasons in terms of great variations for doctor responses across the countries. Three reasons having the greatest cross-national variance for the nurse group are “no tradition”, “no help for patients” and “don’t know who responsible”.

As in another representation, we compiled rank orders of the 13 suggested items according to percentage agreements (aggregating “strongly” and “slightly”) to easily identify strong reasons in each country. Table 4 included such ranking data, among which top five forceful reasons were described in bold face in each country sample. As such, the reasons receiving the few top ranks by doctors and nurses vary in national samples.

4.2 Additional reasons

We did find few reasons – offered by respondents themselves – other than the proposed 13 potential statements. At most 4% of doctors – from New Zealand – and also 4% of nurses – from Denmark and New Zealand – offered comments on additional reasons for not reporting. Lack of descriptions provided by the Icelandic – collected only from a single doctor (3%) – and by the Nigerian respondents – from three doctors (2%) and a single nurse (2%) – may be partly caused by the language used in the questionnaire – English, which is not their mother tongue.

In the Japanese sample, we obtained 12 and 161 comments on additional reasons from the doctor and the nurse group, respectively – 3% description rate from each group. Many of their comments were similar to ones among the 13 suggested reasons and more than half of their described “other reasons” fell into the following four categories: I am reluctant to report (1) when an error has not been made by myself but someone else (in most Japanese hospitals, a report should be submitted by one who detects an incident case first); (2) when an error does not injure a patient or in case of near miss; (3) because of stigma or feeling shameful associated with making an error; or (4) because of the lack of trust in a risk manager or leader in my ward/department.

A couple of Danish respondents suggested that implicating a colleague would be an obstacle. As another reason from this country sample, a few respondents noted that they did not know to whom or to which system to report. This may be influenced by the fact that the Danish survey was made prior to the introduction of a nation-wide reporting system, as mentioned previously.

4.3 Cross-national and professional comparisons

We compared strength or weakness of each potential reason between the five country samples based on the professional groups. Table 5 shows results of the Mann-Whitney test between any pair of the five countries in terms of significance levels. As mentioned previously, the agreement of the Nigerian respondents with almost every potential reason was significantly much higher than that of any other country sample for both doctors and nurses. Only a few reasons relating to the lack of support and motivation were not observed significant differences between Nigeria and the rest of countries surveyed in this study.

Regarding the other country samples of the doctor group, significant differences were identified only for a few items between the Icelandic sample and any other country sample. However, the lack of significant differences seems to be partly caused by a “Type 2 Error” due to a small number of responses included in the Icelandic sample, i.e., only 29 responses from doctors. This may be conjectured by the facts that the responses in the Icelandic sample were not biased extremely among the country samples surveyed in this study for most of the 13 potential reasons – even if the Nigerian sample is excluded – and that a greater number of reasons were detected which had significant differences between any pair of the other countries, viz., for eight items were there significant differences between Denmark and Japan, eight items between Denmark and New Zealand and five items between Japan and New Zealand. As for the differences between the Danish and the Japanese doctors, agreements of the former were significantly higher than the latter for five items concerning the lack of support and motivation, and so were those for a couple of items classified into the fear of sanctions and disrepute. Such a mono-directional relationship cannot be identified between New Zealand and either of the other two countries.

Table 5 Results of cross-national comparisons in each reason for not reporting
(in Mann-Whitney significance levels)

Reasons for not reporting		Doctors				Nurses			
		IS	JP	NZ	NG	IS	JP	NZ	NG
Licensing board	DK	0.478	0.450	0.009	0.000	DK	0.084	0.256	0.508
	IS		0.443	0.257	0.000	IS		0.052	0.326
	JP			0.008	0.000	JP		0.567	0.000
	NZ			0.000	0.000	NZ			0.000
The press	DK	0.379	0.036	0.456	0.000	DK	0.063	0.000	0.000
	IS		0.933	0.836	0.000	IS		0.251	0.184
	JP			0.794	0.000	JP		0.000	0.000
	NZ			0.000	0.000	NZ			0.000
My career	DK	0.440	0.204	0.018	0.000	DK	0.656	0.877	0.365
	IS		0.582	0.479	0.000	IS		0.568	0.875
	JP			0.041	0.000	JP		0.212	0.000
	NZ			0.000	0.000	NZ			0.000
Reprimand	DK	0.860	0.948	0.917	0.000	DK	0.280	0.000	0.720
	IS		0.954	0.929	0.000	IS		0.566	0.255
	JP			0.888	0.000	JP		0.009	0.000
	NZ			0.000	0.000	NZ			0.000
Patient complaint	DK	0.578	0.000	0.028	0.000	DK	0.029	0.000	0.052
	IS		0.244	0.336	0.000	IS		0.915	0.482
	JP			0.996	0.000	JP		0.166	0.000
	NZ			0.000	0.000	NZ			0.000
Appearing incompetent	DK	0.467	0.001	0.007	0.000	DK	0.017	0.649	0.141
	IS		0.038	0.344	0.053	IS		0.007	0.347
	JP			0.000	0.000	JP		0.065	0.003
	NZ			0.210	0.000	NZ			0.072
No trust in department	DK	0.667	0.311	0.229	0.000	DK	0.011	0.000	0.365
	IS		0.373	0.671	0.002	IS		0.093	0.008
	JP			0.055	0.000	JP		0.006	0.001
	NZ			0.000	0.000	NZ			0.000
Cumbersome	DK	0.673	0.009	0.035	0.035	DK	0.000	0.000	0.476
	IS		0.187	0.088	0.181	IS		0.392	0.014
	JP			0.303	0.656	JP		0.000	0.292
	NZ			0.566	0.566	NZ			0.323
No help for the patient	DK	0.006	0.000	0.001	0.000	DK	0.000	0.000	0.002
	IS		0.330	0.458	0.083	IS		0.011	0.141
	JP			0.824	0.000	JP		0.404	0.008
	NZ			0.001	0.001	NZ			0.068
No improvement	DK	0.060	0.000	0.964	0.515	DK	0.270	0.000	0.025
	IS		0.000	0.084	0.060	IS		0.133	0.023
	JP			0.044	0.052	JP		0.000	0.000
	NZ			0.788	0.788	NZ			0.975
Don't know who responsible	DK	0.723	0.000	0.406	0.000	DK	0.998	0.000	0.000
	IS		0.111	0.810	0.041	IS		0.003	0.000
	JP			0.098	0.000	JP		0.002	0.003
	NZ			0.004	0.004	NZ			0.000
No tradition	DK	0.081	0.000	0.001	0.881	DK	0.345	0.000	0.000
	IS		0.233	0.568	0.140	IS		0.000	0.663
	JP			0.378	0.000	JP		0.137	0.006
	NZ			0.004	0.004	NZ			0.003
Forget when busy	DK	0.783	0.115	0.000	0.001	DK	0.000	0.000	0.000
	IS		0.455	0.002	0.076	IS		0.007	0.631
	JP			0.000	0.018	JP		0.002	0.857
	NZ			0.025	0.025	NZ			0.160

DK: Denmark, IS: Iceland, JP: Japan, NZ: New Zealand, NG: Nigeria

In the nurse responses, significant cross-national differences were observed for many potential reasons. Even for a pair of countries in Northern Europe, i.e., Denmark and

Iceland, significant differences were observed for about a half of the 13 potential reasons. The agreement rates of the Icelandic nurses were significantly higher than those of the Danish for all of these potential reasons. Comparing the Danish with the Japanese nurses, significant differences were observed for most potential reasons, i.e., ten items. Except for a few items such as “the patient may file a complaint”, “I might get a reprimand” and “too cumbersome”, the Danish nurses perceived stronger impacts from these potential reasons on unwillingness to report than the Japanese. Similar to these comparative results with the Danish nurses, the Japanese nurses received significantly less negative effects on error reporting from four reasons regarding the lack of support and motivation than the Icelandic nurses. A similar trend was also observed with the New Zealand sample, viz., the Japanese nurses were significantly less impacted from four potential reasons fallen into this factor on their unwillingness to report adverse events. In contrast, the former country group received significantly negatively stronger influences than the latter from a couple of offered reasons relating to the fear of sanctions and disrepute, i.e., “the press might start writing” and “I might get a reprimand”.

5. Self-reported Reluctance to Bring up Adverse Events

5.1 Experience of reluctance to report

In this section, we first describe results of healthcare staff experience of unwillingness to report adverse events/errors, and subsequently discuss its effects on perceptions of reporting behaviour. As mentioned in Section 2.1, respondents were asked to rate their reluctance experience on a five-point Likert scale to the question, “There have been situations where I have been reluctant to bring up adverse events/errors?” Table 6 shows results of the rank-based Mann-Whitney test, which identified differences in responses to this question between the doctor and the nurse group in each country sample, as well as the number of respondents with or without reluctance experience for the two professional groups. In this table, we divided each country sample into respondents who had indicated [strong and slight] agreement and [strong and slight] disagreement, respectively, to the question (leaving out neutral responses), and we labelled the former respondents “reluctant” group and the latter “not-reluctant” group. Figure 5 also depicts the percentage of respondents of these two “reluctance” groups for the two healthcare professionals to easily compare their responses between countries, and between doctors and nurses.

Table 6 Number (and percentage) of respondents divided into “reluctant” vs. “not-reluctant” group based on professional groups and nationality

	Doctors		Nurses		Mann-Whitney significance
	Reluctant	Not-reluctant	Reluctant	Not-reluctant	
Denmark	230 (35%)	375 (57%)	246 (20%)	864 (70%)	0.000
Iceland	14 (48%)	12 (41%)	13 (26%)	21 (41%)	0.185
Japan	208 (57%)	108 (30%)	2,925 (61%)	1,062 (22%)	0.102
New Zealand	27 (53%)	17 (33%)	66 (52%)	47 (37%)	0.359
Nigeria	79 (53%)	41 (28%)	22 (48%)	17 (37%)	0.295

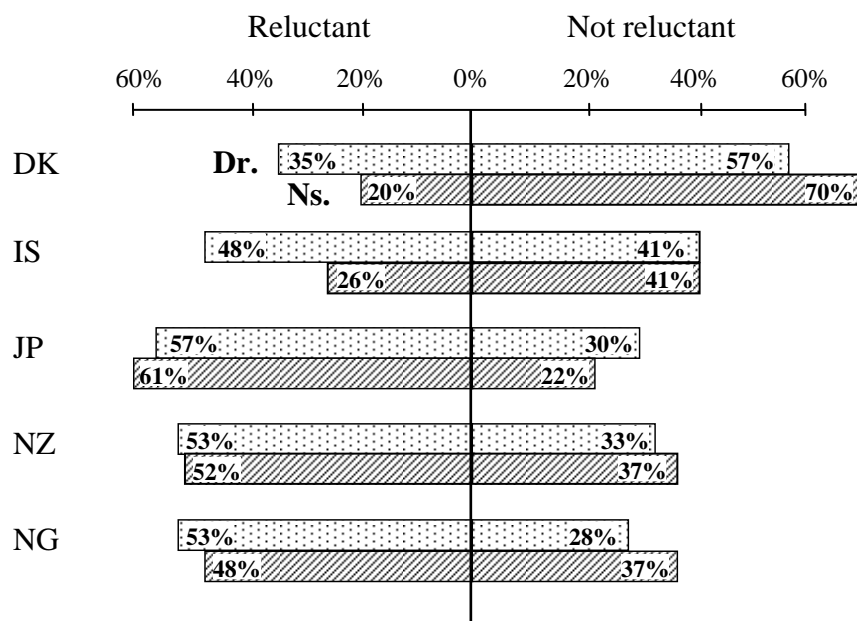


Figure 5 Percentage of respondents divided into “reluctant” vs. “not-reluctant” group based on healthcare profession and nationality

To make cross-national comparisons of the self-reported reluctance experience, the results of the Mann-Whitney test are shown in Table 7 based on the professional groups. For the doctor group, significant differences were observed only between the Danish and each of the Japanese, New Zealand and Nigerian respondents. As can be seen in Figure 5, the Danish doctors had significantly less experiences of reluctance to bring up their errors than the other country groups. The Japanese doctors had the highest [strong or slight] agreement with this statement among the five country samples, but no significant difference was identified with other country samples than the Danish.

Table 7 Differences in experience of reluctance to report errors/incidents between the five countries (in Mann-Whitney significance levels)

	Doctors				Nurses			
	Iceland	Japan	New Zealand	Nigeria	Iceland	Japan	New Zealand	Nigeria
Denmark	0.068	0.000	0.003	0.000	0.001	0.000	0.000	0.001
Iceland	-	0.262	0.578	0.395	-	0.000	0.069	0.236
Japan	-	-	0.663	0.756	-	-	0.001	0.053
New Zealand	-	-	-	0.846	-	-	-	0.958

In contrast, for the nurse group, there were significant differences between most pairs of the five country samples in the self-reported reluctance experience of error reporting. Like doctors, a greater number of nurse respondents in Japan experienced reluctance to report errors than in any other country, followed by the New Zealand and the Nigerian nurses. Also, similar to the doctor case, the self-reported rate of reluctance experience was very low for the Danish nurses – even lower by 15% than its doctor group.

5.2 Reasons based on experience of reluctance to report

As mentioned in Section 4, there were no dominant reasons for not reporting adverse events with which more than half of respondents agreed strongly or slightly in any country except Nigeria. This result was derived by analysing data from respondents both who had experience of unwillingness to report adverse events/errors, and who had no such experience. It is natural to consider that such experience may affect on respondents perceptions of error reporting behaviour. Therefore, we can build a hypothesis that healthcare employees who recall and acknowledge that they have ever been reluctant to bring up adverse events or errors might differ in terms of specific reasons to hold back from those who do *not*.

To explore this hypothesis we compared responses from both the “reluctant” and the “not-reluctant” group (cf. Figure 5) to each of the 13 potential reasons. Analysing results of the Mann-Whitney test about differences between these two groups in each country sample are shown in Tables 8 (for items concerning the “fear of sanctions and disrepute”) and 9 (for items concerning the “lack of support and motivation”). As indicated in these tables, we identified significant differences for all or almost all of the 13 potential reasons between the two “comparison” groups in most country samples (both for doctors and nurses). In the responses from the Icelandic nurses and those from the New Zealand doctors, only a few items were identified to have significant differences between the

“reluctant” and the “not-reluctant” group due to their small samples.

As have been expected, the percentage agreements of respondents who had experienced reluctance to report or bring up their errors were far greater with almost all the potential reasons than those of doctors and nurses who had not, regardless of the countries (confer Tables 8 and 9). This trend was also shared qualitatively by the country samples in which statistical differences were not identified between the “reluctance experience” and the “not-reluctant” group. It is of critical importance to notice that *more than half* of the “reluctant” respondents agreed (strongly or slightly) with several items – most of which are fallen into the category, the fear of sanctions and disrepute – as reasons for not reporting in some countries besides the Nigerian sample.

Table 8 Percentage agreements of “reluctant” vs. “not-reluctant” group to items classified into “fear of sanctions and disrepute” in each country sample

Reasons for not reporting		Doctors			Nurses		
		Relu.	Not rel.	<i>p</i>	Relu.	Not rel.	<i>p</i>
Licensing board	DK	41%	16%	0.000	40%	21%	0.000
	IS	43%	0%	0.001	23%	20%	0.262
	JP	29%	4%	0.000	24%	12%	0.000
	NZ	37%	29%	0.664	35%	13%	0.000
	NG	68%	50%	0.006	68%	50%	0.353
The press	DK	48%	30%	0.000	37%	24%	0.000
	IS	50%	0%	0.001	15%	24%	0.572
	JP	39%	10%	0.000	25%	13%	0.000
	NZ	30%	24%	0.706	20%	9%	0.001
	NG	75%	48%	0.002	73%	41%	0.049
My career	DK	39%	21%	0.000	41%	21%	0.000
	IS	43%	8%	0.007	31%	29%	0.371
	JP	39%	7%	0.000	27%	13%	0.000
	NZ	44%	12%	0.571	45%	13%	0.000
	NG	73%	49%	0.006	68%	47%	0.127
Reprimand	DK	44%	22%	0.000	48%	22%	0.000
	IS	21%	0%	0.004	17%	17%	0.877
	JP	41%	6%	0.000	43%	16%	0.000
	NZ	30%	6%	0.496	35%	15%	0.001
	NG	77%	44%	0.000	64%	47%	0.166
Patient complaint	DK	41%	19%	0.000	33%	14%	0.000
	IS	50%	8%	0.004	38%	25%	0.386
	JP	47%	9%	0.000	29%	16%	0.000
	NZ	30%	24%	0.840	32%	15%	0.012
	NG	71%	44%	0.010	81%	53%	0.009
Appearing incompetent	DK	50%	28%	0.000	55%	24%	0.000
	IS	64%	17%	0.002	46%	33%	0.049
	JP	31%	4%	0.000	33%	10%	0.000
	NZ	59%	35%	0.369	60%	20%	0.000
	NG	68%	35%	0.002	59%	35%	0.066

DK: Denmark, IS: Iceland, JP: Japan, NZ: New Zealand, NG: Nigeria

Table 9 Percentage agreements of “reluctant” vs. “not-reluctant” group to items classified into “lack of support and motivation” in each country sample

Reasons for not reporting		Doctors			Nurses		
		Relu.	Not rel.	<i>p</i>	Relu.	Not rel.	<i>p</i>
Trust in department	DK	34%	16%	0.000	26%	11%	0.000
	IS	50%	0%	0.003	31%	14%	0.057
	JP	15%	3%	0.000	14%	6%	0.000
	NZ	37%	6%	0.469	22%	0%	0.000
	NG	61%	23%	0.000	55%	24%	0.074
Cumbersome	DK	40%	18%	0.000	15%	6%	0.000
	IS	29%	0%	0.005	15%	21%	0.543
	JP	37%	12%	0.000	18%	6%	0.000
	NZ	33%	25%	0.051	25%	7%	0.001
	NG	34%	21%	0.085	32%	6%	0.009
No help for the patient	DK	17%	5%	0.000	8%	5%	0.001
	IS	43%	8%	0.003	23%	19%	0.178
	JP	15%	9%	0.000	5%	3%	0.000
	NZ	19%	6%	0.879	23%	4%	0.000
	NG	53%	34%	0.019	35%	29%	0.450
No improvement	DK	17%	10%	0.000	12%	7%	0.000
	IS	0%	0%	0.143	15%	10%	0.308
	JP	16%	9%	0.000	9%	6%	0.000
	NZ	7%	6%	0.157	9%	2%	0.154
	NG	33%	13%	0.042	23%	6%	0.144
Don't know who responsible	DK	31%	22%	0.000	24%	15%	0.000
	IS	29%	8%	0.021	31%	0%	0.317
	JP	11%	5%	0.003	3%	3%	0.000
	NZ	26%	12%	0.802	0%	5%	0.532
	NG	38%	24%	0.017	19%	6%	0.066
No tradition	DK	51%	31%	0.000	45%	18%	0.000
	IS	43%	8%	0.034	46%	10%	0.009
	JP	17%	9%	0.000	5%	6%	0.130
	NZ	15%	12%	0.169	11%	6%	0.365
	NG	48%	24%	0.010	14%	12%	0.467
Forget when busy	DK	28%	13%	0.000	18%	8%	0.000
	IS	14%	8%	0.121	31%	19%	0.331
	JP	22%	15%	0.001	14%	10%	0.000
	NZ	52%	24%	0.019	33%	15%	0.000
	NG	38%	20%	0.016	23%	0%	0.001

DK: Denmark, IS: Iceland, JP: Japan, NZ: New Zealand, NG: Nigeria

As such a critical reason for not reporting, in the Danish sample, 50% of the doctor and 55% of the nurse respondents who have had the reluctance experience suggested “fear of appearing incompetent” while the percentage agreements of the “not-reluctant” doctors and nurses with this item were 28% and 24%, respectively. In addition, this item was agreed with as a reason by 59% doctors and 60% nurses of the “reluctant” group in New Zealand – the percentage agreements of “not-reluctant” doctors and nurses were 35% and 20%, respectively. The “reluctant” respondents in the Icelandic sample also exhibited

rather higher percentage of agreement with this item – 64% of doctors and 46% of nurses. As other noticeable reasons, a half of the “reluctant” Icelandic doctors perceived the items, “the patient may file a complaint” and “the press might start writing” as reasons for not reporting while only a few doctor respondents – 8% and 0% for these items, respectively – and no nurse respondents of this country’s “not-reluctant” group agreed with these items. A large part of “reluctant” Japanese doctors (47%) also agreed with the former and many of the same doctor group in Denmark (48%) did with the latter although their percentage agreements were slightly lower than 50%.

A clear contrast of agreements between the “reluctant” and the “not-reluctant” group can be seen in the Icelandic doctors’ responses with the item “one does not feel confident about bringing up adverse events/errors in our department”. A half of respondents who had experienced reluctance to report pointed to this item as a reason while no doctor in the “not-reluctant” group agreed strongly or slightly with this item. Excluding the Nigerian sample, “the lack of trust in this department” was not a strong reason against error reporting even for “reluctant” respondents in any other countries. Among other items fallen into the lack of support and motivation, “no tradition for reporting in this department/ward” was critical for the “reluctant” Danish doctors, i.e., 51% agreement. Also, a large part of the “reluctant” Icelandic respondents (43% for doctors and 46% for nurses) as well as the Danish nurses (45%) suggested it as a reason. In contrast, this is only the item for which no significant difference was observed between the “reluctant” and the “not-reluctant” group in the Japanese nurse sample, and its agreement rates of the both groups were very low.

6. Discussion

6.1 Latent factors against reporting

Based on the results mentioned in Sections 3 through 5, healthcare staff reasons for not reporting adverse events may be projected not only by cultural aspects such as professional, national and organisational cultures but also by structural issues of healthcare practices such as safety systems, rules and procedures, and relevant acts and regulations. Speculated based on the questionnaire results obtained in this study, for instance, external pressures, e.g., “the press might start writing” and “the patient might file a complaint”, seem to be strong barriers against error reporting for Japanese healthcare providers, particularly for doctors although invisible internal pressures from team members, and those within a ward

or hospital may also be crucial in Japanese healthcare, particularly for nurses, e.g., “fear of appearing incompetent” and “I might get a reprimand”. As mentioned in Section 4, it is a common trend with any country sample surveyed in this study that these items representing the fear of sanctions and disrepute give relatively strong impacts to staff reluctance of error reporting.

The Japanese healthcare staff’s strong fear of sanctions, particularly from external pressures, may be influenced on the one hand by cultural issues, e.g., “blame” culture, and on the other by structural issues which form healthcare systems. Connecting to the former aspect, there has been the extensive coverage of “medical errors/adverse events” in the Japanese press. During 2001, for instance, the major Japanese newspapers brought stories about 412 medical accidents (Japan Nursing Association, 2002), and the number of such reports in newspapers and broadcasts has continued to increase since then. In these reports, erroneous actions of an individual healthcare professional who involved the event were emphasised and he or she was blamed in most cases.

As one of the structural issues, there are no established rules concerning the use of accident reports in medical lawsuits in Japan, and therefore written reports may be able to be obtained on request by patients and to be used as evidence in malpractice lawsuits. Such a lack of formal rules or legislation about use of reports has been often suggested as a major drawback for incident reporting systems in Japanese medical institutions (Yokota et al., 2001). As another structural issue specific to Japanese healthcare, the staff reluctance to report may be closely linked to healthcare management systems such as ones treating with the patient’s complaints and compensation for medical accidents and incidents. In Europe, first Denmark, and later England and Wales formally established no-fault “complaint” and “compensation” systems, but there are no such official systems in Japan. Instead, when an adverse event is revealed to a patient or his/her family in Japan, staff who involved the event may be likely to become a target of criticism not only about responsibility or discipline of his/her mistake but also sometimes for its compensation. Therefore, the lack of such systems may be also one of the latent factors for the Japanese staff’s strong fear against external pressures, particularly litigation or compensation to a patient or his/her family.

6.2 Limitations

The present paper investigated healthcare staff views of reporting errors, primarily focusing on comparison results between the five country samples having different national cultures. Such cross-national comparisons are of great effectiveness for providing a clear cut of an individual country's characteristics on staff views and attitudes. However, this study has several limitations. Firstly, we were not able to collect an enough number of responses in some country surveys, i.e., the Icelandic sample for both doctors and nurses, the doctor sample of New Zealand and the nurse sample of Nigeria. For some of these countries, it was of great difficulty to obtain a larger sample, for instance, because of the size of country and its healthcare system. For use of data aggregated from doctors and nurses like the one to which we applied the principal component analysis, we believe that each country sample included a necessary number of responses. However, for the purpose of characterisation of healthcare staff views based on professional groups, the sample size was not large enough for the above-mentioned countries. To derive sound conclusions on such characteristics, we need a larger number of responses from these countries.

Secondly, as connecting to the first limitation, a questionnaire based survey always faces a problem of sample bias, and it is not possible to draw a truly random sample. For a sample with a low response rate, it may be likely that those who responded are individuals having particular interests in issues under study. In the present study, the response rates for the doctor group were not high except for the Nigerian sample whereas that of the nurse group was very high in every country sample. As mentioned in Section 2, the mean response rate of the doctor group, excluding the Nigerian sample, was approximately 40%, which we believe was close to a minimal requirement for sampling. In the surveys presented here, responses were collected from wide-range of doctors and nurses, e.g., different ages, job experience and specialties or ward types. For some country samples, we extended the data collection period to gather responses from those who did not respond by the deadline originally determined. For these reasons, we suppose that a possibility that only those who were especially interested in or motivated to the issues we surveyed responded was low. In addition, we took a strong anonymity policy in collecting responses, and therefore we believe that genuine answers were obtained from respondents as what they really thought or perceived.

Finally, we used the English version of questionnaire for respondents in Iceland and Nigeria while the other country samples were collected using the questionnaires of their mother tongue, i.e., Danish, Japanese and English. Use of the non-native language might influence respondents in the former two countries in part, for instance, giving fewer

comments to the open-ended question about additional reasons. However, we believe that the healthcare respondents in these countries well understood the statements of the potential reasons and made their responses appropriately because of the following fact: In the instruction part of the questionnaire, we noticed a subject to leave blank for a question item which does not make sense for him/her or to which he/she does not understand, but there were very few responses which included no answer even in the samples which were collected using the non-mother tongue questionnaire.

7. Conclusion

In this paper, we reported the cross-national survey results of the healthcare staff views about reasons for not reporting adverse events/errors based on the questionnaire responses from five countries: Denmark, Iceland, Japan, New Zealand and Nigeria. First, we identified two common barriers of healthcare staff against reporting adverse events: faults either to “pull” a healthcare staff from avoiding internal and external pressures or to “push” him/her to commit the reporting system. These barriers may be mixed with both safety structure and culture. We labelled the former barrier the *fear of sanctions and disrepute* – which may be partly influenced by “blame” culture; and the latter the *lack of support and motivation* – which seems to be somewhat relating to local culture and organisation dependent issues. These factors were acquired by applying the principal component analysis to response data to the same set of items regarding potential reasons for not reporting – very few additional reasons to these items were offered by the respondents in each country. We believe that the factor structure derived in this study could be commonly applicable to any healthcare setting regardless of countries since these two factors were independently elicited as consistent principal components from each sample of the five different countries which are dispersed regionally and have different national cultures (Hofstede, 1991; 2001) and different healthcare systems.

Integrating the analysis results mentioned in this paper, we seem compelled to summarise that we could not find one or a few of dominant specific barriers against reporting adverse events in the recent healthcare work setting. Rather, there are a small set of common or general barriers each of which comprises several potentially contributable reasons like the ones derived in this study. Effects of the fear of sanctions and disrepute on hindrance to reporting errors are greater than those of the other factor in all the countries surveyed. The comparative results about individual reasons showed large and significant

differences between the five countries in the rates of healthcare providers who assigned to potential causes for not reporting. Such strength of each individual reason as a barrier against reporting seems to vary, to some extent, depending not only on cultural aspects peculiar to a specific ward/department and organisation as well as national culture but also on structural issues such as various systems for regulating and controlling healthcare practices. For instance, the Japanese nurses are strongly influenced to their reporting behaviour from internal pressures while external pressures may be a stronger barrier for the Japanese doctors, e.g., “the press might start writing” and “the patient might file a complaint”. “Fear of appearing incompetent” is also a strong barrier for healthcare providers in Denmark and New Zealand. Strong reasons for the Icelandic respondents are somewhat similar to those for the Danish. Among the 13 potential reasons offered in this study, all the items fallen into the fear of sanctions and disrepute are found very strong barriers for the Nigerian healthcare providers.

Considering existence of such differences in forceful reasons for not reporting between countries and between hospitals – though we did not mention about the latter, i.e., organisational differences, in this paper – we suggest that the overall goal of promoting staff reporting of adverse events may best be pursued by focusing on reducing or eliminating the greatest national and local hindrances as perceived by the doctors and nurses themselves. As summarised above, a number of employees in many countries are threatened with internal pressures within a department/ward or an organisation such as reprimand and disrepute. This might be still partly caused by a “blame” culture of an organisation (Parker & Lawton, 2003) as well as by unrealistic acknowledgement of human fallibility and limitations, e.g., effects of stress, fatigue and workload (Itoh et al., 2002).

On the one hand, the blame culture is likely to impede healthcare staff as well as managers to learning safety-related issues not only from their own but also from other individuals’ experiences of adverse events. Fear of sanctions will often be justified and will lead employees to be less than candid when they are questioned about their own involvement. In turn, this may make it difficult or even neither possible to gain a clear picture of and a valid analysis of events, nor to make them adequate safety awareness from the events. A model for prompting healthcare staff to effectively bring up adverse events may be to change an organisational culture or a management policy to a “blame-free” or “non-punitive” style, as many studies have suggested (e.g., Department of Health, 2000; Kohn et al., 1999). In some reporting systems, employees are granted immunity against

sanctions it they inform of their role in the accident, in others there may be a conditional immunity (so, acts of gross negligence or criminal acts are exempted) and again in others no immunity is granted (e.g., Orlady & Orlady, 1999). On the other hand, it can be expected to effectively eliminate impedance to refraining from reporting adverse events by realistic recognition of human fallibility. To prompt healthcare providers to do so as well as to make them have higher awareness of the effects of fatigue and stress, it may be suggested to provide them with an appropriate training programme on crew resource management (Helmreich et al., 1999).

Finally, as partly connecting to the issues discussed above, in addition to cultural changes in healthcare, structural supports by establishing or changing management rules or systems may be also required so that healthcare staff can prevent from unfairly becoming a target about discipline and responsibility of compensation when he/she writes an incident/accident report. As mentioned previously, in Japan, it might be required to establish formal systems for treating patients' complaints and compensation for medical accidents and incidents since they do not have a formal channel to express their questions or requests for these matters. These systems may allow healthcare staff to free from taking additional efforts and burdens about incidence of errors as well as fear of direct censure from the patient. This may also contribute to more open attitudes of healthcare staff towards effective and efficient reporting of adverse events and errors, and it in turn leads to build an appropriate "reporting" and moreover "learning" culture within an organisation for achieving patient safety.

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