

A QUESTIONNAIRE-BASED SURVEY ON HEALTHCARE SAFETY CULTURE FROM SIX THOUSAND JAPANESE HOSPITAL STAFF: ORGANISATIONAL, PROFESSIONAL AND SPECIALTY/WARD DIFFERENCES

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The present paper reports results of a questionnaire-based survey of safety culture collected from 6000 staff responses in Japanese hospitals. Survey results suggest that there are large variations in safety culture between hospitals in Japanese healthcare. In addition, a relatively homogeneity was observed across clinical departments and across doctor's job ranks, while there was a minor cultural difference between ward groups of the nurse.

Introduction

In recent years, there has been an increased focus on safety culture or safety climate for accident prevention in healthcare (e.g., Kohn et al., 1999). Reflecting this increasing awareness, a number of projects have sought to uncover the safety culture of individual hospitals. In our previous survey using a small sample (600 responses from Japanese doctors and nurses; Itoh et al., 2002), safety culture related attitudes and perceptions among hospital staff were investigated along with various sources of cultural differences. However, the generalizability of the survey results to the general situation in Japanese hospitals may be questioned because the previous study involved a sample from only from five hospitals and had has a relatively small number ($N = 66$) of doctor responses.

In the present paper, we report results of a large-scale questionnaire-based survey of safety culture collected from 6000 staff responses in 22 Japanese hospitals.

Questionnaire and responses

The questionnaire had four parts, one of which dealt with safety cultural issues. The items of this part were adapted from the questionnaire "Operating Team Resource Management Survey" (Helmreich & Merritt, 1998). Respondents were asked to indicate their level of agreement on a five-point Likert scale with 57 statements about attitudes to and perceptions of their job, hospital management, and factors that might impact on safety performance.

The survey was carried out in 2002. A total of 5,969 responses (84% mean response rate) were collected from 22 hospitals in Japan, including 391, 5171 and 199 responses from doctors, nurses and pharmacists, respectively.

Professional safety culture in healthcare

We have applied a nine-dimensional model adapted from the previous study (Itoh et al., 2002) to analysis of responses to the 57 safety culture related items. Each dimension, which is called a safety culture factor in this study, includes several items. Table 1 describes a factor label, the number of comprised items, its meanings when taking a high value (opposite meaning for a low value), and the value of Cronbach's alpha for each factor.

The analysis shows that most of the safety culture indices vary among three professional groups (cf. columns "Total" in Table 2). Japanese healthcare respondents indicate a relatively high level of morale and motivation as well as positive perceptions of communication within their organisations. The sample also reveals a relatively small power distance. Most of the healthcare respondents, particularly nurses, have collective or team-oriented attitudes. More than 70% of healthcare staff agreed with items relating to stress management for team members. However, they did not exhibit great awareness of the effects of stress on their own performance. A large part of healthcare staff in all the three professional groups has realistic attitudes to and recognition of human error, and the tendency to show realistic recognition of human fallibility has increased greatly, compared to the previous survey conducted two years before the present study (Itoh et al., 2002).

Sources of cultural difference: specialties/wards and organisations

Percentage [dis]agreements (strongly or slightly) of each safety culture factor are shown in Table 2 for both the doctor and the nurse group in different clinical departments – or rather, specialties – and wards. We performed Kruskal-Wallis tests for each of the 57 safety-culture related items, and Table 2 includes information on the number of items in which significant differences ($p < 0.05$) were observed between the specialty/ward groups for each factor.

Comparing across doctor's specialties, statistical tests showed no significant differences between physicians, surgeons and anaesthesiologists for most of the individual question items. In terms of the safety culture factors, each of which, as explained above, is aggregated from individual items, only a few noticeable differences were observed: the agreement of anaesthesiologists was slightly higher for recognition of stress management; and surgeons were slightly more directed to individualism compared with the other groups.

In contrast to results for doctors, nurses showed significant differences for most items, and there were large differences for most safety culture indices as well across ward types, in particular collectivism-individualism, recognition of stress effects on own performance, stress management for team members, morale and motivation, and satisfaction with management.

Organisational differences in safety culture indices are summarised in Table 3 in terms of mean, maximum and minimum values (and its range; max–min) of percentage agreements and disagreements over 11 and 22 hospitals surveyed for the doctor and the nurse sample, respectively. There were large variations in the safety cultural indices across the Japanese hospitals, and for each professional group, the observed differences between hospitals were much greater than those within hospital groups and subcultures: i.e., between specialties, departments/wards and job ranks.

Table 1. Safety culture factors as analysis framework.

	Safety culture factors [no. of items]	(Cronbach's α)	Meaning of factors when taking high value
I.	Power distance [7 items]	($\alpha = 0.539$)	Large psychological distance between leaders or superiors and subordinate members. A bureaucratic, authoritative atmosphere may exist within an organisation. There is limited or little open communication between leaders and their subordinates within a department or workplace as well as lack of communication between departments.
II.	Communication [4 items]	($\alpha = 0.583$)	Importance of open communication is acknowledged for performing job functions within an organisation or among team members.
III.	Collectivism-individualism [3 items]	($\alpha = 0.478$)	Members of the organisation or group are willing to engage in team-oriented or collectivistic behaviour.
IV.	Recognition of stress effects on own performance [6 items]	($\alpha = 0.620$)	Members understand well the effects of stress, fatigue and other psychological factors on their own work performance. They also recognise the need of work sharing and collaboration between members in stressful situations.
V.	Recognition of stress management [6 items]	($\alpha = 0.504$)	Members are well aware of other team members' stress and fatigue levels when they are working as a team. Also, they recognise the need of taking care of each other in high-stress or high-workload situations.
VI.	Moral & Motivation [6 items]	($\alpha = 0.705$)	There are many members who have high morale and motivation within an organisation.
VII.	Recognition of human error [3 items]	($\alpha = 0.197$)	Human errors are well and realistically recognised within an organisation.
VIII.	Satisfaction with management [4 items]	($\alpha = 0.622$)	Staff members are satisfied with hospital management system. Their trust in senior managers, and leaders and superiors in department is high.
IX.	Awareness of own competence [6 items]	($\alpha = 0.563$)	Staff members' awareness of their own competence and skills is very high. They are quite confident in their own competence and skills. They believe staff's competence and skills are the most important for working in a hospital.

Table 2. Specialty- and ward-based comparisons in safety culture factors.

Safety culture factors	Doctors					Nurses				
	Intern. med. (%)	Surgery (%)	Aneath. (%)	Others (%)	Total (%)	No. items significant	Intern. med.	Surgery (%)	ICU (%)	
Power distance agree: disagree:	12 68	12 71	8 81	11 75	12 71	0/7	12	11	12	
Communication	92	94	96	91	93	0/4	70	69	70	
Collectivism- individualism	2	1	3	2	2		89	90	90	
Recognition of stress effects on own performance	72	64	77	65	68	0/3	2	2	2	
Recognition of stress management	10	12	8	12	11		73	70	71	
Moral & motivation	39	36	39	42	38	0/6	8	10	10	
Recognition of human error	39	37	44	37	38	44	42	40	45	
Satisfaction with management	73	70	78	66	71	1/6	29	30	28	
Awareness of own competence	12	14	14	18	13		73	72	73	
	68	69	72	64	68	1/6	12	11	12	
	11	11	13	18	12		18	17	22	
	58	61	60	62	60	0/3	25	24	24	
	28	23	27	24	25		56	56	51	
	55	54	52	56	54	0/4	18	17	22	
	20	18	26	18	19		54	52	55	
	54	51	53	51	52	0/6	25	25	24	
	17	18	20	17	18		16	16	20	
							40	40	42	
							26	25	27	

Nurses							
Safety culture factors	OR (%)	Out patient (%)	Psychiatry (%)	Paediatric (%)	Mixed (%)	Others (%)	Total (%)
Power distance agree:	10	12	11	11	11	11	11
disagree:	69	73	71	73	71	70	5/7
Communication	90	93	94	93	92	91	90
	2	2	1	2	2	2	4/4
Collectivism-individualism	67	72	65	81	72	69	71
	12	10	15	6	11	10	2/3
Recognition of stress effects on own performance	42	37	41	41	42	39	42
	29	39	32	25	33	33	5/6
Recognition of stress management	73	74	73	79	74	75	73
	10	11	11	9	12	10	5/6
Moral & motivation	56	65	58	59	62	63	58
	17	14	16	13	17	13	6/6
Recognition of human error	54	52	51	52	54	51	53
	24	28	28	26	26	26	0/3
Satisfaction with management	59	57	60	61	64	60	60
Awareness of own competence	19	22	16	16	16	16	18
	42	45	43	42	41	45	42
	23	24	25	24	27	22	25

Table 3. Cultural variations between hospitals in Japan.

Safety culture factors	Doctors				Nurses			
	Mean (%)	Max (%)	Min (%)	Range (%)	No. items significant	Mean (%)	Max (%)	Min (%)
Power distance								
agree:	12	22	6	16	1/7	11	17	7
disagree:	72	80	66	14	71	78	66	10
Communication	93	94	84	10	1/4	91	97	85
Collectivism-individualism	2	13	1	11	2	2	5	12
Recognition of stress effects on own performance	67	78	56	23	0/3	71	82	62
Recognition of stress management	11	17	7	10	10	14	10	20
Moral & motivation	37	48	23	25	1/6	41	49	32
Recognition of human error	42	58	30	28	31	39	26	17
Satisfaction with management	74	82	67	15	0/6	73	80	67
Awareness of own competence	13	17	7	10	12	15	13	13

Conclusion

The results of the present large sample have turned out to support most, though not all, of the findings obtained in our previous survey involving a much smaller sample (Itoh et al., 2002). For nurses, there are only minor differences in safety culture within Japanese hospitals across wards, and the differences are even smaller for doctors across specialties. We are inclined to speculate that the reason for this relatively robust homogeneity across specialties might possibly be due to the effects of more forceful professional and hospital-based cultures. In contrast, there are relatively large differences in safety cultural attitudes and perceptions across hospitals. Again, it might be speculated that the dissimilarity across hospitals may be due to differences in style and procedures of management in general and risk management in particular, including error reporting, safety training and attention to safety procedures.

References

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