

# Effects of patient demands on satisfaction with Japanese hospital care

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## Abstract

**Objective.** The objective of this study was to detect whether there was any difference among the characteristics of patient satisfaction between two patient emphasis groups: patients demanding technical elements of hospital care and patients demanding interpersonal elements.

**Design and setting.** The sample for this study was drawn from in-patients discharged from 77 voluntarily participating hospitals throughout Japan. The relationship between overall satisfaction with hospital care and patient satisfaction, and the evaluation of a hospital's reputation, was explored by stepwise multiple regression analysis of 33 variables relevant to aspects of hospital care for each patient group.

**Results.** In the interpersonal emphasis (IE) group, 'nurse's kindness and warmth' was associated significantly with overall satisfaction, while 'skill of nursing care' and 'nurse's explanation' were significant predictors of overall satisfaction in the technical emphasis (TE) group. On the other hand, 'doctor's clinical competence', 'recovery from distress and anxiety', and items pertaining to the hospital's reputation were significantly related to overall satisfaction in both emphasis groups.

**Conclusion.** For overall patient satisfaction, it is essential to satisfy specific items related to the aspect of hospital care emphasized by the patient. Specific significant predictors of overall satisfaction (e.g. 'doctor's clinical competence') were indispensable measures of professional performance in hospital care, irrespective of the patients' emphasis. A positive perception of hospital reputation items might increase overall patient satisfaction with Japanese hospitals.

**Keywords:** hospital reputation, patient satisfaction, patient demands, quality of hospital care

Patient satisfaction is one of the desired outcomes of hospital care [1,2]. The relationship between a patient's satisfaction with medical care and factors related to the patients' socio-demographic characteristics (i.e. age, sex, race, education, income, marital status, etc.) and predisposing factors (i.e. life satisfaction, health status, etc.) has been examined frequently. To summarize numerous relevant articles, Hall and Dornan conducted a meta-analysis of patient satisfaction studies. This revealed that greater satisfaction was significantly associated with older age and less education, and marginally significantly associated with marriage and belonging to a higher social class [3,4]. Of the sociodemographic variables significantly related to patient satisfaction, Linder-Pelz examined six social psychological determinants of patient satisfaction and found that patients' expectations were the most important in determining patient satisfaction [5,6]. Similarly, Like and Zyzanski reported that fulfilment of a patient's request was directly associated with the patient's satisfaction with the encounter, and that fulfilment of a patient's request predicted a greater

percentage of the total variance in satisfaction than characteristics of the patient, physician, or health care system [7, 8]. In summary, fulfilment of patients' expectations or requests is recognized as one of the key predictors of levels of patient satisfaction [9,10].

Donabedian identified two further important elements in the performance of health care practitioners: the technical and interpersonal elements [1]. His work also indicated that these two elements are crucial to the quality of health care. Although comparison of pre-visit expectations with post-visit fulfilment of those expectations has been identified as an essential social-psychological determinant, no study has explored the relationship between patient demands and patient satisfaction with hospital care in domains by which health care quality can be assessed.

This study examined whether the characteristics related to the association between patients' satisfaction and patients' demands differed for the two main elements of hospital care: 'technical' and 'interpersonal' care. The identification

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of different characteristics should provide information that allows hospital medical personnel to determine the practical items of patient satisfaction that affect overall patient satisfaction in each emphasis group.

## Method

### Subjects

The subjects for this study were in-patients discharged to the community from the 77 hospitals (33 public and 44 private) that participated in the study. The hospitals were located throughout Japan. The authors mailed patient satisfaction questionnaires to the participating hospitals. The authors were not responsible for the participants' care at these hospitals and did not have any vested interest in the hospitals. All of the patients discharged from the participating hospitals ( $n=10\,350$ ) in February and March 1996 were given a copy of a self-administered questionnaire and a stamped, addressed envelope on discharge. Because Donabedian [1] pointed out that patients might be reluctant to reveal their opinions for fear of alienating their medical attendants, the questionnaires were returned directly to the authors to increase the reliability of the responses. The response rate was 56.2%, and 5814 responses were obtained. Of the responses, 1919 were complete, with no blank or non-proxy responses, and the respondents were 16 years of age or older. Of these 1919 responses, the analysis was limited to 846 responses from patients who could be classified as placing a strong emphasis on either interpersonal or technical aspects of care, based on their response to two emphasis questions, described below. The other respondents ( $n=1073$ ) with complete data rated the importance of technical and interpersonal aspects of care equally, and were excluded from further analysis. Our analysis included data that was reported in a study that examined the causal relationship between patient satisfaction and health care workers' satisfaction [11].

### Questionnaire

Wolf and colleagues generated 26 items that could be categorized into three clinically relevant dimensions (cognitive, affective, and behavioural) of patient satisfaction with the patient-provider interaction [12]. Similarly, Linder-Pelz and Struening identified three dimensions of patient satisfaction: doctor conduct, general satisfaction, and convenience (access) [13]. After reviewing these articles, Ware and Hays developed a Visit-Specific Satisfaction Questionnaire to assess satisfaction with the overall visit, technical quality, interpersonal manner, and length of wait [14]. Although these studies assessed out-patient satisfaction, two of these dimensions (technical quality and interpersonal manner) were included in the questionnaire for hospital in-patients because of their high content validity and internal consistency. Furthermore, in order to summarize either the frequency with which different aspects have been measured or the levels of satisfaction procured for different aspects [15], Hall and Dornan identified 11 aspects of satisfaction in a meta-analysis of 107 studies. In addition,

Billinghurst and Whitfield reported that 36.3% of respondents chose their new doctor because of a recommendation or the doctor's reputation [16]. Imanaka *et al.* also revealed that hospital reputation was positively related to patient satisfaction with hospital care, in a survey of out-patients in Japan [17,18]. Similarly, we assumed that items pertaining to the dimension 'hospital reputation' were also essential for in-patient satisfaction. However, sociodemographic variables such as social class, type of medical insurance, level of education, race, and access, were not incorporated in the model because of their non-significant predictability, shown previously [17].

Considering the dimensions and items used in these previous studies, as well as the characteristics of Japanese hospitals, our questionnaire explored satisfaction in six dimensions: improvement in health status, attitude and performance of hospital staff, emotional communication, medical information, care provision system, and living arrangements. The questionnaire consisted of 33 items for measuring overall satisfaction and one dimension in which the patient evaluated the hospital's reputation. Table 1 shows the patient satisfaction questionnaire items used for the analysis.

### Measurements

The outcome measure was overall satisfaction with hospital care, which was measured using four items with a 5-point ordinal scale format. The four items were satisfaction with hospital care, satisfaction with the outcome of the care, intention to use the same hospital again in case of sickness, and recommendation of the hospital to family members or friends. The overall satisfaction score was calculated by summing the four responses (range, 4–20).

Independent variables included the patient's age and sex (1 = male, 0 = female), patient's subjective evaluation of the state of daily activity after discharge (from completely normal to rest, and assistance needed using a five-point Likert type format), necessity for periodic medical examination (1 = yes, 0 = no), frequency of hospitalization, surgery performed during hospitalization (1 = yes, 0 = no), length of hospital stay (1 = less than 3 days, 2 = less than 1 week, 3 = less than 2 weeks, 4 = less than 1 month, 5 = less than 3 months, 6 = more than 3 months), and department involved (1 = internal medicine, 0 = surgery). As described above, patient satisfaction and evaluation of hospital reputation were measured using 33 items dealing with specific aspects of hospital care. These items were analysed individually to identify specific aspects of patient satisfaction affecting overall satisfaction.

As is usual in satisfaction studies, the scores obtained tended to be skewed toward the upper (satisfied) end of the scale [19]. Ross *et al.* confirmed that the distribution of values from an evaluation rating scale was as acceptable as normal distribution, although the scale distribution was slightly skewed to the positive end of the scale [20]. Ware and Hays also identified that the evaluation rating scale format yielded a mean score closer to the midpoint of the scale range (i.e. a lower score) and greater response variability than a six-choice satisfaction scale (from 'extremely satisfied' to 'extremely

**Table 1.** Questionnaire items used for analysis

Overall satisfaction (scale)	
	I'm satisfied with this hospital's care.
	I'm satisfied with the outcome of the care I received.
	I will reuse this hospital in case of sickness.
	I will recommend this hospital to my family or friends.
Patient satisfaction items	
1.	Improvement in health status
	Physical health recovery
	Recovery from distress and anxiety
	Relief of pain
2.	Hospital staff attitude and performance
	Reception of hospital clerk
	Smoothness and correctness of clerical procedures
	Nurse's responsibility and dedication
	Skill of nursing care
	Nurse's kindness and warmth
	Nurse's courtesy
	Doctor's responsibility
	Doctor's clinical competence
	Doctor's kindness and warmth
	Doctor's courtesy
3.	Emotional communication
	Helping communication, difficulties in asking questions
	Respect for patients' opinions and feelings
	Respect for patients' family opinions and feelings
4.	Medical information
	Doctor's explanation
	Nurse's explanation
5.	Care provision system
	Prompt response to patients' symptoms
	Consideration of the pain of therapy
	Communication and co-operation between medical staff
	Fairness to all patients
	Medical equipment
	Consideration of patients' privacy
6.	Living arrangement
	Comprehensive comfort during hospitalization
	Lavatory cleanliness
	Bathing
	Security in hospital
	Meals
	Convenience of hospital life
7.	Evaluation of hospital's reputation
	Family member's evaluation
	Hospital's reputation among other patients
	General reputation

dissatisfied') [14]. Therefore, our patient satisfaction questionnaire used a five-point evaluation rating scale (poor, fair, good, very good, excellent).

Patients' emphasis was categorized according to their response to two items, which asked respondents how much

importance they attached to aspects of interpersonal manner and technical performance in hospital care. Each item had a 10-point Likert scale, which ranged between 0 (not important) and 10 (extremely important). The scores were used to categorize the subjects into three groups, to identify the effect of practical demands on patients' satisfaction. Respondents who scored technical performance higher than interpersonal manner during hospital care were placed in the 'technical emphasis (TE)' group, whereas respondents who scored interpersonal manner higher than technical performance were included in the 'interpersonal emphasis (IE)' group. Respondents who rated the importance of these aspects of care equally were categorized as belonging to the 'equal emphasis' group and excluded from further analyses.

### Analysis

Two sample *t*-tests and chi-square tests were used to compare the demographic variables and patient satisfaction items between the TE and IE groups, to identify predictors of overall satisfaction and potential biases in the respondent sample. Multivariate modelling was then conducted in a stepwise manner, starting with the strongest univariate predictor; additional covariates were added if the change significantly improved the fit of the model, or removed if their contribution was non-significant. The usual level of statistical significance (in  $P < 0.05$  and out  $P < 0.10$ , based on the corresponding *F*-statistic) was used as the criterion for adding and removing predictors. The analysis was conducted using SPSS 7.5 [21].

### Results

Because there was no statistical difference in the basic sample characteristics (e.g. age, sex, surgical procedure, and department) of respondents who were hospitalized in public and private hospitals, all of the respondents were combined for the subsequent analysis. The mean (standard deviation) of the overall satisfaction score was 15.8 (2.83) and the distribution was skewed to the 'satisfied' end of the scale.

Table 2 shows the result of bivariate analysis using the patient emphasis groups defined in this study. There were statistically significant differences between the two emphasis groups for age, sex, and the rate of surgical procedures. Subjects in the IE group were younger than those in the TE group. In addition, significant differences were observed between the two groups for the patients' subjective evaluation of the state of daily activity after discharge, the necessity of periodic examination, and the length of hospitalization. The state of daily activity was lower in the IE group than that in the TE group, and the length of hospital stay was shorter in the former than in the latter. However, there was no statistical significance in the scale or in the items of overall satisfaction between the two emphasis groups. Cronbach's alpha for the overall satisfaction scale was 0.87, indicating adequate internal consistency [22].

Table 3 shows the correlation coefficients between some

**Table 2.** Basic sample characteristics and overall satisfaction by each emphasis group

	IE group (n = 151)	TE group (n = 695)	Statistics
Age [years, mean (SD)]	38.40 (18.31)	48.15 (16.33)	-6.036 <sup>2***</sup>
Sex [male (%)]	59 (39.1)	418 (60.1)	22.395 <sup>1***</sup>
Surgical procedure performed (%)	61 (40.4)	395 (56.8)	13.488 <sup>1***</sup>
Department [internal medicine (%)]	63 (41.7)	318 (45.8)	
Necessity of periodic examination [yes (%)]	64 (42.4)	360 (51.8)	4.398 <sup>1*</sup>
Frequency of hospitalization [mean (SD)]	2.89 (2.17)	2.79 (2.46)	
State of daily activity [5-point scale, mean (SD)]	1.87 (0.91)	1.71 (0.76)	2.160 <sup>2*</sup>
Length of hospital stay [6-point scale, mean (SD)]	3.21 (1.30)	3.59 (1.23)	-3.453 <sup>2**</sup>
Overall satisfaction [scale, mean (SD)]	15.66 (3.02)	15.87 (2.79) <sup>2</sup>	
I'm satisfied with this hospital's care	3.85 (0.85)	3.97 (0.77)	
I'm satisfied with the outcome of the care I received	3.87 (1.04)	3.92 (0.86)	
I will reuse this hospital in case of sickness	4.09 (0.97)	4.10 (0.84)	
I will recommend this hospital to family or friends	3.85 (1.01)	3.89 (0.90)	

\**P* < 0.05, \*\**P* < 0.01, \*\*\**P* < 0.001. <sup>1</sup>Chi-square test. <sup>2</sup>*t*-test. IE, Interpersonal emphasis; TE, technical emphasis.

**Table 3.** Correlation coefficient (Pearson's *r*) between basic sample characteristics and overall patient satisfaction

	1	2	3	4	5	6	7	8	9
1 Overall satisfaction (scale)	—	0.13**		0.09*		-0.07*		-0.15**	
2 Age		—	0.40**		0.20**	0.29**	0.15**	0.12*	0.31**
3 Sex		0.37**	—		0.28**	0.16**		-0.11**	0.15**
4 Surgical procedure				—	-0.20**		-0.09*		0.20**
5 Department		0.46**	0.40**		—	0.20**	0.09*	-0.11**	
6 Necessity of periodic examination		0.30**	0.22**	0.17*	0.31**	—	0.20*	0.19**	0.25**
7 Frequency of hospitalization	-0.17*						—	0.10*	
8 State of daily activity						0.17*		—	0.32**
9 Length of hospital stay		0.20*	0.32**	0.17*	0.32**	0.35**			—

\**P* < 0.05, \*\**P* < 0.01, \*\*\**P* < 0.001. Note: Figures at the upper right (lower left) represent coefficients in the technical emphasis group (interpersonal emphasis) group.

basic sample characteristics and overall satisfaction. The coefficients were generally relatively small, indicating that multicollinearity among control variables should not have an effect in the multiple regression analysis.

The results of the stepwise multiple regression analysis, which was controlled for the basic sample characteristics, are shown in Table 4. The overall satisfaction of the IE group patients was significantly related to satisfaction with 'recovery from distress and anxiety', 'reputation among other patients', and 'nurse's kindness and warmth'. The most significant item related to overall satisfaction was 'doctor's clinical competence'. In the TE group, on the other hand, 'skill of nursing care', 'physical health recovery', and 'nurse's explanation' significantly affected overall satisfaction. In addition, some items assumed to evaluate the hospital reputation dimension (e.g. 'family member's evaluation', 'general reputation of hospital') were also significantly related to overall satisfaction. Furthermore, 'doctor's clinical competence' and 'recovery from distress and anxiety' were significant predictors of

overall satisfaction common to both emphasis groups. These factors remained significant in each emphasis group when the analysis was repeated for subsamples consisting of non-surgical patients, females, or patients aged 30–60 years old. In addition, the average point difference between the score for the two emphasis questions was 1.98. An analysis using only the subset of respondents whose rating of interpersonal and technical aspects of care differed by two points showed tendencies similar to those described above in each emphasis group. Each *R*<sup>2</sup> for the two multivariate models exceeded 0.5, and the increment in variance accounted for by the satisfaction items was significant.

## Discussion

The goal of this study was to investigate whether there were any differences in the characteristics associated with patient satisfaction and patient demands when the focus of hospital

**Table 4.** Stepwise multiple regression of overall patient satisfaction on demographic and each satisfaction item between emphasis groups

	IE group ( <i>n</i> =151)			TE group ( <i>n</i> =695)		
	b	Beta (step) <sup>1</sup>	t	b	Beta (step) <sup>1</sup>	t
Control variables						
Age	0.021	0.129	1.895	0.020	0.114***	3.690
Sex	-0.54	-0.087	-1.344	-0.334	-0.059	-1.937
Surgical procedure	-0.385	-0.063	-1.057	0.288	0.051	1.825
Department	0.252	-0.041	0.586	0.115	0.020	0.710
Necessity of periodic examination	-0.254	-0.042	-0.642	-0.098	-0.018	-0.590
Frequency of hospitalization	-0.144	-0.103	-1.772	0.037	0.003	0.118
State of daily activity	0.084	0.025	0.419	-0.083	-0.023	-0.764
Length of hospital stay	0.042	0.018	0.277	-0.012	-0.005	-0.170
<i>R</i> <sup>2</sup> for the control variables		0.058			0.060	
Patient satisfaction items						
Physical health recovery				0.365	0.124(3)**	3.058
Recovery from distress and anxiety	0.608	0.204(3)**	3.221	0.233	0.081(7)*	2.048
Skill of nursing care				0.408	0.134(4)**	3.655
Nurse's kindness and warmth	0.522	0.164(4)*	2.424			
Doctor's clinical competence	1.068	0.358(1)***	5.199	0.773	0.248(1)***	6.970
Nurse's explanation				0.314	0.100(5)**	2.819
Family member's evaluation				0.462	0.145(2)**	3.421
Reputation among other patients	1.065	0.293(2)***	4.540			
General reputation of the hospital				0.319	0.094(6)*	2.404
<i>R</i> <sup>2</sup> for the model		0.564			0.531	
<i>F</i> statistic		14.858***			51.289***	

\**P*< 0.05, \*\**P*< 0.01, \*\*\**P*< 0.001. Note: Empty cells in patient satisfaction items represent non-significance of the item. IE, Interpersonal emphasis; TE, technical emphasis.

<sup>1</sup> Item significantly entered into the model.

care stressed 'technical' versus 'interpersonal' care. This is the first study to explore associations between these parameters. Several conclusions were drawn from our results. First, regarding demographic variables in the model, age had a positive significant relationship with overall satisfaction in the TE group. Several other studies that have explored the relationship in hospital setting support this trend [9,23,24]. However, in their meta-analysis to clarify the relationships between satisfaction with medical care and patients' socio-demographic characteristics, Hall and Dornan described this relationship as extremely small, even when it was statistically significant [4]. In our study, all of the demographic variables except for patient's age were non-significant predictors of satisfaction and *R*<sup>2</sup> was small (< 0.06 in both patient emphasis groups). The causal relationship between these demographic variables and satisfaction must be explored further.

Second, in the IE group, one of the unique items related positively to overall satisfaction was 'nurse's kindness and warmth', which represented a specific attribute in this group. This indicates that it was extremely important for the IE group patients to receive warm and humane nursing care. Numerous other studies have identified a significant positive relationship between patient satisfaction with nursing care and overall satisfaction with hospital care [10,25,26]. Furthermore,

our study also revealed details of the relationship between overall satisfaction and aspects of nursing care. Compared with those in the IE group, TE group patients emphasized 'skill of nursing care' and 'nurse's explanation' as being related to their overall satisfaction. Both of these items are concerned with patient satisfaction with technical aspects of nursing care in hospital. It is likely that these technical aspects of hospital care are clues to patients' evaluation of satisfaction and could affect overall satisfaction more than other aspects in this group. The finding that 'physical health recovery', as the outcome of health care, was a significant predictor in the TE group might verify the high reliability of this inference. Most of the unique items in each emphasis group pertained to aspects of nursing care. This may be because nursing care is the major supportive service provided to hospitalized patients, and nursing personnel comprise the largest proportion of the health service community [7].

Third, there were a few predictors common to both emphasis groups (e.g. 'doctor's clinical competence' and 'recovery from distress and anxiety') that were significantly associated with overall satisfaction. Prior research in a hospital setting also reported that satisfaction with physicians was the best predictor of general satisfaction, and explained most of the variance in general satisfaction with hospitalization [23].

In addition, Williams and Calnan found that 'confidence in the hospital's doctors' was the strongest and only predictor of overall satisfaction with hospital care [9]. It is likely that a doctor's clinical competence in a practical setting is recognized as one of the most essential aspects positively related to overall satisfaction with hospital care. Moreover, it is extremely noteworthy that 'doctor's clinical competence' was the best predictor in both emphasis groups. This finding emphasizes the importance of doctors' clinical ability in hospital care, irrespective of the patients' preference. Similarly, 'recovery from distress and anxiety', which was included in improvement in the health status dimension, was also a common determinant of overall satisfaction that was independent of the emphasis of patients' demands in hospital care. Carmel also reported that improvement in health status, which is equivalent to 'recovery from distress and anxiety' in our study, was significant, and positively related (more strongly than any other variable) to general satisfaction in a hospital setting [23]. This finding implies that patients attach importance to relief of their psychological burden, even when they do not expect improvement in their physical health. Therefore, it is reasonable that patients' perceived improvement in their own health directly augments their overall satisfaction.

Fourth, regarding the evaluation of a hospital's reputation, several items for this dimension (e.g. 'family member's evaluation', 'reputation among other patients', and 'general reputation') were also significantly related to overall satisfaction in both emphasis groups. Similarly, Imanaka *et al.* reported that patients' assessment of a hospital's reputation was one of the most important determinants of their overall satisfaction and judgement of the quality of hospital care in an out-patient survey of Japanese hospitals [17,18]. For patients seeking hospital care, the general reputation of the hospital that they are planning to visit may provide them with initial information on the quality of hospital care and relieve some anxiety. Although this work reconfirmed the positive relationship between overall satisfaction and some items in the dimension 'hospital reputation' in both emphasis groups, further research is required to examine details of the causal relationship and whether this finding can be generalized for different hospital settings in other countries. Our results suggest that it is very important to have medical personnel with a high level of practical competence, and to determine which elements of clinical performance each patient emphasizes in hospital care.

We need to determine the external validity of our findings. Lasek *et al.* reported that mean differences in a global satisfaction scale, which was similar to our overall satisfaction scale, were not significant between initial respondents and non-respondents who subsequently completed a telephone interview [27]. Furthermore, they reported that responses to the initial mailed survey were obtained from 54% of patients (range: 40–63 % in each participating hospital). The response rate (56.2%) in our study was very close to theirs. Therefore, in terms of study implementation and methodology, the validity of our study seems to be satisfactory. Although Lasek pointed out that the impact of non-response bias on satisfaction surveys of hospitalized patients may be relatively

small, and the effects were not systematically greater in hospitals with lower response rates [27], further evaluation of the non-response bias is needed.

Moreover, except for age, sex and department involved, the differences among the basic sample characteristics and overall satisfaction score were not statistically significant between the subsample of 846 respondents analysed (IE and TE groups) and the other respondents. However, significant differences in demographic variables might not have a great impact on the findings, in as much as repeated analysis of subsamples controlled for sex or age found that similar significant patient satisfaction items in each emphasis group were also significantly related to overall satisfaction. In addition, there were no significant differences in the basic sample characteristics of the 846 respondents analysed and the 1073 'equal emphasis' respondents. It appears that our method of defining the emphasis groups did not distort the study findings. In addition, the  $R^2$  of the model, and its significant increment in variance accounted for by the satisfaction items, indicated that more than 50% of the variance in overall satisfaction could be explained by the best predictor variables, suggesting that the exploratory questionnaire items had satisfactory validity. In short, our findings are applicable to other health care settings in Japan.

Finally, our study has some limitations. All of the patient satisfaction items and dimensions incorporated in the questionnaire were based on the validity of preceding research questionnaire batteries. Further study is required to confirm whether there are other aspects of patient satisfaction with hospital care that are not included in the questionnaire, and whether each battery in this study is internally consistent and valid.

In conclusion, this study made the following major observations: (i) it is essential to satisfy specific items related to the aspects of hospital care emphasized by patients (e.g. 'nurse's kindness and warmth' in the interpersonal emphasis group and 'skill of nursing care' in the technical emphasis group) in order to achieve overall patient satisfaction; (ii) common significant predictors of overall satisfaction (e.g. 'doctor's clinical competence' and 'recovery from distress and anxiety') seemed to be indispensable to professional performance in hospital care, irrespective of patient emphasis; (iii) the evaluation of hospital reputation items might have a meaningful role in overall patient satisfaction with Japanese hospitals.

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