



ORIGINAL ARTICLE

# Improving Service Quality in Long-term Care Hospitals: National Evaluation on Long-term Care Hospitals and Employees Perception of Quality Dimensions

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**Abstract**

**Objectives:** To investigate predictors for specific dimensions of service quality perceived by hospital employees in long-term care hospitals.

**Methods:** Data collected from a survey of 298 hospital employees in 18 long-term care hospitals were analysed. Multivariate ordinary least squares regression analysis with hospital fixed effects was used to determine the predictors of service quality using respondents' and organizational characteristics.

**Results:** The most significant predictors of employee-perceived service quality were job satisfaction and degree of consent on national evaluation criteria. National evaluation results on long-term care hospitals and work environment also had positive effects on service quality.

**Conclusion:** The findings of the study show that organizational characteristics are significant determinants of service quality in long-term care hospitals. Assessment of the extent to which hospitals address factors related to employee-perceived quality of services could be the first step in quality improvement activities. Results have implications for efforts to improve service quality in long-term care hospitals and designing more comprehensive national evaluation criteria.

## 1. Introduction

Given that the proportion of the elderly to total population in Korea keeps escalating, the demand for long-term care services is also increasing. The number of long-term care hospitals has risen from 113 in 2004 to

867 in 2010 [1]. In light of the increase in long-term care hospitals, The National Evaluation on Appropriateness of Long-Term Care Hospital Inpatient Admissions (hereafter, national evaluation) was implemented in Korea in 2008. The two objectives of national evaluation are improving quality of care by motivating long-

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term care hospitals to improve service quality voluntarily and protecting consumers' rights to know about hospital performance by publicizing the results of the national evaluation. All eligible long-term care hospitals are evaluated annually. The evaluation criteria consist of three aspects in quality: structure, and process and outcomes of clinical care. A total of 36 items, 26 for structure and 10 for clinical care, is used to assess hospital performance. The 2011 evaluation results show that 78 hospitals (10%), out of the total 782 eligible long-term care hospitals, receive the first grade (Tier 1, excellent quality of care): 141 hospitals (18%) and 234 hospitals (29.9%) are in Tier 2 and Tier 3, respectively [1]. About two-thirds of hospitals provide at least moderate quality of care, which indicates that the service quality in long-term care hospitals has ample room for further improvement.

A qualitative study on long-term care hospital quality indicators in Korea, which takes account of provider perspectives, has identified quality dimensions such as physical environment, staff, and quality improvement programs [2]. Studies have shown that organizational characteristics such as ownership, nurse staffing, and hospital size are associated with quality of care in long-term care hospitals [3,4]. Specifically, job security [5] and supportive work environment and job attributes [6–9] are significantly associated with job satisfaction. Research into job satisfaction among all types of hospital employees has been sparse compared to research on medical staff in hospital settings has been studied extensively [10–13].

As the strong connection between employee satisfaction and service quality has been supported [7,14,15], organizations that provide enabling work environments would have employees satisfied with their job and, to that end, improve service quality. Research on human resource management has mostly argued that providing development opportunities and empowering employees are necessary to increase productivity and service quality [16–18]. Hospital employees do not form a not homogenous group, which makes it difficult from an organizational perspective for hospital administrators and policy makers to decide how to improve quality via increasing their employees' job satisfaction. As the objective of the national evaluation is to have hospitals improve service quality voluntarily, it is necessary to understand the relationship between organization factors and employees' perceptions on their surroundings, which, in turn, would lead to improvement in service quality. Better knowledge of work conditions that could produce better service quality is valuable.

Therefore, the purpose of the study was to evaluate hospital employees' perceptions of service quality in long-term care hospitals and to examine predictors for each dimension of service quality using a standard of quality scale.

## 2. Materials and Methods

### 2.1. Study subjects

Convenience sampling was used to select 18 long-term care hospitals in Daejeon and Chungchong province. In order to reflect the distribution of the national evaluation results, study hospitals were selected from each tier: two hospitals from Tier 1, three from Tier 2, six from Tier 3, and seven from Tier 4. Hospitals in Tier 5 were excluded from sampling since the lowest tier stands for insufficient quality of care. Study subjects were recruited to the survey on a voluntary basis and no statistical sampling procedures were carried out. After explaining the purposes of the study to hospital administrators and respondents, they agreed to participate in the study. The respondents who participated were told that they could withdraw from the study at any time and that this would not affect their subsequent rights in workplace. A total of 230 questionnaires were distributed to the 18 study hospitals and 198 valid questionnaires were returned and used for data analysis. The data collection period was from September to November 2011.

### 2.2. Measures

Survey questionnaires were developed and adapted to long-term care hospital employees from existing measures. Predictors include perceptions on national evaluation criteria, work environment, job satisfaction, and organizational and individual characteristics. The structured questionnaire consists of awareness and appropriateness of national evaluation criteria, work environment, job satisfaction, and service quality. All responses were self-reported. Likert-type scoring measurements were used to assess the intensity of each variable.

#### 2.2.1. Service quality

The study used the SERVQUAL model to measure long-term care hospital service quality perceived by hospital employees. The SERVQUAL model, developed by Parasuraman et al [19], has been widely used to identify service quality dimensions. The model consists of the following five constructs: tangibles, reliability, responsiveness, assurance, and empathy. Tangibles include physical facilities, equipment, and appearance of personnel. Reliability represents ability to perform the promised service accurately and dependably. Responsiveness takes account of willingness to help patients and provide prompt service. Assurance is made up of knowledge and courtesy of employees and their ability to convey trust and confidence. Empathy means caring and individualized attention to patients. We modified the original 22 items to 18 items to take hospital employees perspectives into account. Dimensions of service quality were measured by a five-point Likert scales with

employees responding 1 as “strongly disagree” to 5 as “strongly agree.”

### 2.2.2. Work environment

A scale measuring to what degree employees believed that their work environment has improved due to national evaluation ( $\alpha = 0.89$ ), comprised on responses on a five-point Likert scale to nine items measuring facility, staffing, and benefits. The total possible score ranged from 11 to 44, with a higher score meant a greater satisfaction of work environment.

### 2.2.3. Job satisfaction

Job satisfaction of hospital employees was measured with 12 items which are scored on a five-point Likert scale ranging from 1 as “very dissatisfied” to 5 as “very satisfied.” Items address the satisfaction with the unit supervisor, promotion possibilities, contact with colleagues, and clarity of tasks. Internal consistency of the whole job satisfaction scale in the sample was 0.94.

Two variables represent job satisfaction: (1) a scale measuring work itself ( $\alpha = 0.92$ ), comprised of responses of seven items measuring task clarity, training programs, growth opportunities, and performance; and (2) a scale measuring interpersonal relationship ( $\alpha = 0.90$ ), comprised of responses of five items measuring relations with supervisors and co-workers, and in other work divisions. The total possible score ranged from 7 to 35 and 8 to 25, for work itself and interpersonal relations, respectively, with an increasing score representing a greater job satisfaction.

### 2.2.4. National evaluation criteria appropriateness

Two variables indicated perceptions on national evaluation criteria: (1) an overall indicator, “how much do you know about the national evaluation on long-term care hospitals?” on a five-point Likert scale; and (2) evaluation criteria appropriateness scale ( $\alpha = 0.89$ ) created from seven items measuring each domain of the national evaluation. For the overall indicator, 14% were “not much” or “none”; thus responses were collapsed into “a lot” and all others (86%). The total possible score ranged from 7 to 35, with an increasing score representing a greater agreement with the evaluation criteria.

Variables for organizational characteristics involved the number of beds and thenational evaluation results. The number of beds was categorized into two groups: (1) 100 beds and (2)  $\geq 100$  beds. The results of national evaluation were divided into four grade-tiers: Tier 1 represents the best quality while Tier 4 means lower quality. To compare higher and lower grade hospitals, Tier 3 was used as a reference group, with Tier 1 and Tier 2 combined as an above average group. We also controlled for omitted hospital characteristics with hospital fixed effects. Individual characteristics such as gender, age, education, work years and status, and position were included in the model.

## 2.3. Data analysis

Descriptive analyses were carried out to understand respondents’ characteristics and study measures: national evaluation criteria appropriateness, work environment, job satisfaction, and service quality. Multivariate ordinary least squares (OLS) regression analyses were conducted to assess the effect of hospital employees’ perceptions of any improvement in work environment and job satisfaction on service quality dimensions in long-term care hospitals. Stata (Release 8.1, College Station, Texas, USA) was used for the data analysis. We used a significance level of  $p < 0.05$ .

## 3. Results

### 3.1. Descriptive results

Respondents were primarily female (81.5%), were aged from 30 years to 49 years of age (63.7%), and had college or higher education (70.5%)(Table 1). About three-quarters (76.9%) were lay employees and had up to 6 years of work experience (75.4%). About 80% of the respondents hold permanent status. The respondents were fairly well distributed according to the result of national evaluation: 36.2% were in Tier 1 and Tier 2, and 35.6% were in Tier 4. About 86% of respondents were aware of the national evaluation.

The results indicated that hospital employees perceived the national evaluation criteria to be fairly appropriate (range7–35, mean24.9, SD 4.1; Table 2). Respondents in the study were moderately satisfied with any improvement in their work environment due to the national evaluation (range11–44, mean28.6, SD 5.5). The total score for job satisfaction among the respondents ranged from 15 to 59 and the average score was 38.9 (SD 7.6). For work itself, the mean score was 22.6 (SD 4.7, range 7–35), while for interpersonal relationships, the result was 16.2 (SD 3.4, range8–25). The standardized means of each dimension for perceived quality were similar to each other, which indicated that employees perceived service quality to be comparatively satisfactory.

### 3.2. Multivariate analysis

Table 3 summarizes the results of the regression analysis for each service quality dimension. Among the five dimensions of service quality, job satisfaction from work itself and the degree of national evaluation criteria appropriateness were the most significant predictors. For the dimension of tangibles, the more employees appreciate that national evaluation criteria were appropriate, the better perceived quality. Any improvement in work environment due to the national evaluation and higher job satisfaction of work itself had a significant positive effect on the tangibles dimension of service quality. For the reliability dimension, evaluation criteria appropriateness consent, work environment, and job satisfaction

**Table 1.** Descriptive statistics of respondents,  $n = 298$ 

Variables	Grouping	<i>n</i>	Percentage
Gender	Female	243	81.5
	Male	55	18.5
Age	20–29	42	14.1
	30–39	88	29.5
	40–49	102	34.2
	≥50	66	22.2
Education	High school graduate	88	29.5
	College or higher	210	70.5
Position	Employee	229	76.9
	Manager or higher	69	23.1
Work duration	<3 years	103	34.6
	3–6 years	122	40.9
	≥7 years	73	24.5
Status	Permanent	243	81.5
	Contract	55	18.4
Hospital beds	<100	47	15.8
	≥100	251	84.2
National evaluation results	Tier 1 and Tier 2	108	36.2
	Tier 3	84	28.2
	Tier 4	106	35.6
Awareness of national evaluation	No	42	14.1
	Yes	256	85.9

of work itself were all positively significant predictors. Employees with permanent job status, compared to contractors, were negatively associated with reliability dimension.

The significant predictors for the responsiveness dimension were job satisfaction from interpersonal relationship and working for either Tier 1 of Tier 2 hospitals (compared to Tier 3 hospitals) in addition to criteria appropriateness agreement and job satisfaction. For both assurance and empathy dimensions, being a lay employee, compared to managers and higher position, and work for Tier 1, Tier 2, and Tier 4 hospitals, compared to Tier 3 hospitals, were more likely to assure service and empathy with patients. Both variables for

job satisfaction, work itself and interpersonal relationship, were also significant predictors.

#### 4. Discussion

This study investigated the relationship between employees' perceived improvements in working conditions and job satisfaction due to the national evaluation and the contribution of factors to specific aspects of service quality in long-term care hospitals. The findings reveal that different sets of predictors have an effect each dimension of quality. However, the common set of predictors includes employees' degree of agreement

**Table 2.** Descriptive statistics for measures

Variables	Items	Range	Mean	SD
National evaluation criteria appropriateness	7	7–35	24.9	4.1
Work environment	9	11–44	28.6	5.5
Job satisfaction				
Work itself	7	7–35	22.6	4.7
Interpersonal relationship	5	8–25	16.2	3.4
Service quality				
Tangibles	3	3–15	9.6	2.2
Reliability	3	3–15	10.6	2.3
Responsibility	5	8–25	17.6	3.4
Assurance	4	4–20	14.2	2.9
Empathy	3	3–15	10.7	2.2

**Table 3.** Multivariate regression analysis for service quality dimensions

	Tangibles		Reliability		Responsiveness		Assurance		Empathy	
Gender (ref = male)										
Female	0.59*	(0.25)	0.55*	(0.27)	0.46	(0.37)	0.62	(0.33)	0.31	(0.27)
Age (ref = 20–29 years)										
30–39	–0.21	(0.34)	–0.02	(0.24)	–0.75*	(0.33)	–0.60*	(0.29)	–0.30	(0.24)
40–49	0.01	(0.96)	0.10	(0.23)	–0.53	(0.31)	–0.63*	(0.27)	–0.59**	(0.23)
≥50	0.34	(0.58)	0.47	(0.67)	–0.41	(0.92)	–0.94	(0.81)	–0.69	(0.67)
Position (ref = manager or higher)										
Employee	–0.29	(0.23)	0.06	(0.25)	0.62	(0.34)	0.59*	(0.29)	0.67**	(0.25)
Work status (ref = permanent)										
Contract	–0.34	(0.22)	–0.62*	(0.24)	–0.48	(0.33)	–0.38	(0.29)	–0.20	(0.24)
National evaluation results (ref = Tier 3)										
Tier 1 and Tier 2	0.26	(0.48)	0.46	(0.27)	1.07**	(0.37)	0.84*	(0.32)	0.61*	(0.27)
Tier 4	0.15	(0.43)	0.04	(0.25)	0.18	(0.35)	0.78*	(0.30)	0.52*	(0.25)
Criteria appropriateness agreement	0.06*	(0.02)	0.13***	(0.03)	0.17***	(0.04)	0.16***	(0.03)	0.10***	(0.03)
Work environment	0.18***	(0.02)	0.07**	(0.03)	0.06	(0.04)	0.08**	(0.03)	0.07**	(0.03)
Job satisfaction										
Work itself	0.07*	(0.03)	0.15***	(0.03)	0.23***	(0.04)	0.13***	(0.04)	0.12***	(0.03)
Interpersonal relationships	0.03	(0.04)	0.06	(0.04)	0.21**	(0.06)	0.19***	(0.05)	0.12**	(0.04)

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; Standard errors are in parenthesis. Variables included in the model but not significant: education, work years, number of hospital beds.

with national evaluation criteria, job satisfaction, and work environment. The more they perceived that the national evaluation criteria were appropriate, the better service quality of each dimension was likely to achieve. Based on the five SERVQUAL model constructs, the study found job satisfaction from work itself was pertinent to all five dimensions and job satisfaction from interpersonal relationship was relevant to the responsiveness, assurance, and empathy dimensions of service quality. The findings are consistent with job satisfaction being positively associated with organizational outcomes such as patient satisfaction, employee retention, and quality of care [3,4,7,9]. Any improvement in working environment had a significantly positive effect on four service quality dimensions: tangibles, reliability, assurance, and empathy. It is also consistent with previous research that work environment is an influencing factor for service quality via job satisfaction [6,8,13,15]. While dimensions of responsiveness and empathy were the most pertinent to nursing care quality [20], all aspects of quality dimensions in the study were germane to employees' perceptions on work environment and job satisfaction.

A previous study found that organizational characteristics such as ownership and the number of beds explained the variances in service quality [3]; in our study, the number of beds was not a strong predictor for service quality. It is plausible that small sample size

could have not captured the differences in hospital size. It is interesting to observe that employees with permanent work status were negatively associated with reliability dimension. It is possible that contractor employees are more likely to demonstrate their ability to provide accurate services when the possibility of status changes to permanent position is conditional upon the precise provision of services. The associations between service quality dimensions and the national evaluation results of hospital grade-tiers were not linear. It is acceptable that Tier 1 and Tier 2 groups, compared to Tier 3, had significantly positive effects on responsiveness, assurance, and empathy dimensions of service. However, being in a Tier 4 hospital was positively associated with assurance and empathy dimensions. It is conceivable that lower graded hospitals also put some effort into achieving at least the assurance and empathy aspects of quality and the deficiency in tangibles and reliability could have resulted in the lower scores in the national evaluation.

Several limitations of the study should be acknowledged. First, since the study uses cross-sectional data, observed associations may not be causal. We took employees with less than 3 years of work experience as a reference group in order to capture the differences between preimplementation and postimplementation of the national evaluation. However, since the study was not designed for pre/post testing *a priori*, the causal



interpretation is not suggested. Second, the findings may be limited because we used convenience sample for the data collection of long-term care hospitals in Daejeon and Chungchong province. While we intended to represent the national evaluation results of grade-tiers, the result may not be transferrable to long-term care hospitals across all of Korea. Further study with a national representative sample is preferable. Third, service quality was assessed through perceptual measures, which are subject to respondents' distortions. Even when we included an objective indicator, national evaluation results (grade-tiers) of hospitals, no uniform relationship between hospital grade-tiers and service quality dimensions was found. The issue remains in question.

The policy implications are clear. Considered collectively, a significant portion of service quality can be explained through employee perceptions on working conditions and satisfaction. Given that various factors have an effect on job satisfaction and its strong associations with service quality, regular assessment of employee satisfaction could be used to monitor and improve service quality. Most importantly, the study joins a substantial body of literature with its support for the relationship between job satisfaction and service quality, and, by inference, inclusion of high-level of organizational factors that are relevant to employees' perceived satisfaction into the national evaluation criteria. The study highlights the need for policies that will enhance the quality of care in long-term care hospitals through training programs for employees in attaining proficiency of tasks and improvement in working conditions, which allow employees to enhance their work satisfaction, and continuous quality improvement efforts considering regular assessments of employee perceptions of quality.

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