

THE EFFECTS OF THE MEDICAL MARKET AND INSTITUTIONAL CHARACTERISTICS ON THE STAFF MIX OF LONG-TERM CARE HOSPITALS

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Background

The number of long-term care hospitals in Korea has increased dramatically as a result of a rapidly aging population. As a result, now is the time to provide more appropriate services for elderly patients. The staff mix is generally considered to reflect the quality of health care provided. The current system however allows nursing aides to be recorded as registered nurses and the competitive characteristics of the medical services market and other institutional factors also have a strong influence on the intent of long-term care hospitals to recruit additional nurses.

Purpose

This study aimed to explore the effects of health care market competition and institutional characteristics on the staff mix configurations of hospitals for the elderly.

Methods

1. Study Design

A non-experimental study design was used.

2. Data and Data Collection

Data were collected from the health insurance reimbursement records of 376 long-term care hospitals.

3. Data Analysis

Data were analyzed using one-way fixed panel regression.

Dependent variable: Ratio of nurses to nursing staff

Independent variables:

- . Regional availability of acute and long-term care beds
- . Institutional factors (number of patients per bed, number of doctors, number of beds, hospital owner, rate of bed increase)
- . Characteristics of patients (severity, age)

Results

The results of the study are as follows: 1) The ratio of nurses to nursing staff was low in regions with a high level of availability of beds in long-term care hospitals. 2) The nurse to nursing staff ratio was low when acute care hospitals held a relatively large number of beds, and high when a large number of beds were available in long-term care hospitals. 3) With regards to patient characteristics, the nurse to nursing staff ratio decreased with increases in the number of patients per bed and the number of aged patients (which was associated with patient severity). and 4) With respect to the characteristics of long-term care hospitals, the ratio of nurses to nursing staff increased with rising numbers of both doctors and hospitals, while nurse recruitment rates were lower for long-term care hospitals that were established by individuals or corporations, as compared to those established by public organizations.

Conclusion

The staff mix varies significantly with patient type, region, and the characteristics of long-term care hospitals. A government-led monitoring system and policy-making process that ensures the quality of care in hospitals is needed.

<Table 1> Demographic characteristics of Participants (n=376)

Variables	2008	2009	2010
	M±SD, N(%)	M±SD, N(%)	M±SD, N(%)
Number of nursing staff per 100 beds	13.3±4.3	14.4±4.5	15.1±5.2
% of RN among nursing staff	59.5±21.3	58.1±20.9	56.7±20.5
% of severe patients	38.6±14.3	36.8±13.5	36.8±13.6
Patients per bed	2.0±0.9	1.9±0.8	1.7±0.7
% of over 65 years old patients	84.5±13.9	84.7±13.8	85.9±13.1
% of over 80 years old patients	47.7±8.5	49.3±9.1	51.3±9.6
Number of doctor per 100 beds	3.0±0.7	3.1±0.7	3.1±0.6
Number of bed	128.8±67.5	131.0±68.3	140.0±74.0
under 50 bed	24(6.4)	25(6.6)	24(6.4)
51~100 bed	131(34.8)	127(33.8)	111(29.5)
101~150 bed	101(26.9)	98(26.1)	101(26.9)
151~200 bed	72(19.1)	72(19.1)	74(19.7)
201~250 bed	31(8.2)	36(9.6)	37(9.8)
upper 250 bed	17(4.5)	18(4.8)	29(7.7)
Owner Private	153(40.7)	153(40.7)	153(40.7)
Corporation	191(50.8)	191(50.8)	191(50.8)
Public	32(8.5)	32(8.5)	32(8.5)
Increase rate of bed	5.8±31.5	2.9±16.7	8.3±27.5
Increase rate of regional acute hospital bed	0.1±3.8	-2.6±3.3	4.3±2.5
Increase rate of regional long-term care hospital bed	23.7±8.8	18.2±5.4	22.6±6.2

<Table 2> Ratio of Nurses to Nursing Staff by Panel Regression

Variables	Estimate	S. E.	t	Pr> t
Intercept	1.9319	0.2593	7.45	<.0001
Patients per bed	-0.0311	0.0192	-1.62	0.1059
% of over 65 years old patients	0.0127	0.0634	0.2	0.8413
% of over 80 years old patients	-0.3131	0.0866	-3.62	0.0003
% of severe patients	0.2622	0.0451	5.82	<.0001
Number of doctor per 100 beds	0.6431	0.1218	5.28	<.0001
Number of bed	0.0543	0.0254	2.14	0.0327
51~100 bed(ref=under 50bed)				
101~150 bed (ref=under 50bed)	0.0675	0.0261	2.59	0.0097
151~200 bed (ref=under 50bed)	0.1199	0.0273	4.4	<.0001
201~250 bed (ref=under 50bed)	0.1533	0.0307	5	<.0001
upper 250 bed (ref=under 50bed)	0.1863	0.0345	5.41	<.0001
Owner Private(ref=Public)	-0.0497	0.0226	-2.2	0.0279
Corporation(ref=public)	-0.0521	0.0219	-2.38	0.0174
Increase rate of bed	-0.0480	0.0227	-2.11	0.0347
Increase rate of regional acute hospital bed(A)	-0.3066	0.1832	-1.67	0.0945
Increase rate of regional long-term care hospital bed (B)	0.2771	0.0859	3.23	0.0013
interaction effect between A & B	-6.4077	2.1427	-2.99	0.0028
Time effect 2009(ref=2008)	-0.0144	0.0145	-0.99	0.3219
Time effect 2010(ref=2008)	-0.0233	0.0150	-1.56	0.1197
R-Square		0.1454		