

Pay for Performance of Hospital Nursing Employment in Korea

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Abstract. Objective: This study examines the effect of a national legislation paying hospitals depending on staffing levels to increase hospitals' use of nursing resources in Korea. Background: Although financial incentives have been widely adopted to improve hospital performance, little is known about whether the approach is effective in increasing nurse staffing. A decade of experience in Korean nursing payment system provides a testable case to examine the effectiveness of the approach. Methods: Time series data on hospital-level nurse staffing and a nationwide survey of nurses (N= 2,214) were used to compare before and after the reform. Results: We found an increasing trend of RN employment after implementing the reform. However, the effects differ depending on hospital type. Nurse outcomes including job dissatisfaction, burnout, and intention to leave were not significantly improved. Conclusions: Linking reimbursement rates to nursing resources can be more effective in improving staffing levels, if considering hospitals in poor financial shape.

Keywords: Nursing workforce; Hospitals; Policy; Job satisfaction

1 Introduction

A variety of legislative efforts has attempted to increase hospitals' use of nursing resources (1), as there is compelling evidence that nurse staffing directly influences quality of care (2). Hospital managers often argue that they try but have difficulty recruiting and retaining nurses mainly due to budget constraints. Indeed, hospitals serving primarily low-income patients reportedly show low rates of compliance to staffing regulations (3,4).

Previous studies suggest that rewarding hospitals according to their staffing levels may be an effective way to increase hospital investment in nursing resources (3,5,6). For example, Harrington and colleagues found that higher Medicaid reimbursement rates lead facilities increase nursing hours (3). However, there are many unanswered questions. For example, since raising staffing levels requires substantial capital investment, the size of incentives matters (7). It must be sufficient for budget-

constrained hospitals with low nursing resources to hire more nurses (6). Otherwise, a discretionary nursing payment may further worsen their financial status (5). Furthermore, the design of financial incentives should be considered to prevent unintended consequences such as raising the skill mix.

In 1999, the Korean government reformed the method that the National Health Insurance Services (NHIS) could use to pay for hospitals depending on the level of nurse staffing. A hospital that successfully improves its staffing level gets 200% more money per patient per day than a hospital with the minimum level of nursing workforce. Furthermore, a revision of the act in 2006 added a disincentive, whereby hospitals failing to reach the threshold level had to pay penalties for their low nurse staffing. This decade of experience in South Korea provides a testable case to examine the effectiveness of financial incentives to increase nursing resources. This article examines whether the payment incentive leads hospitals to increase nurse employment and whether the response to the nursing incentive has been consistent across hospitals with various financial statuses. We also examine whether the resulting staffing changes improved nurses' working conditions.

2 Methods

2.1 Data Sources

We used two separate data sets to study the changes in nurse staffing after the implementation of the nursing payment in 1999. Time series data from the Ministry of Health and Welfare, the Patient Survey Data, were used. The analytic sample includes 756 to 1,525 hospitals each year from 1996 to 2008.

To learn whether work conditions were improved following payment reform, we used a nationwide survey of hospital RNs conducted by the Korean Health and Medical Workers Union. The survey inquired about satisfaction with work environment, burnout, the reasons for leaving current employers, and information on demographics, education, and the work experience of hospitals' nursing workforce. The survey was distributed to 5,654 RN participants at the annual union meeting in 2010 from 79 nationwide acute care hospitals. For this study, we included data on the respondents who worked at medical-surgical and obstetrics and gynecological units, excluding the ICU, OR, and ER; this resulted in 2,387 RNs from 29 hospitals.

2.2 Measures

To investigate the effect of nursing payment reform on hospital nurse employment, we measured the number of RNs and nurse aids employed for each hospital before (1996, 1999) and after the reform (2002, 2005, 2008).

To measure whether hospital resources influence employment decisions, we examined a set of hospital-level variables including size, location, ownership, teaching status, and Case Mix Index (CMI). Hospital size was measured using both

the number of licensed beds and that of patient discharges. Ownership was categorized as not-for-profit and for-profit hospitals. Teaching status was measured by the number of training doctors including interns and residents.

To examine whether nurses perceived improvements in their working conditions, we used three self-rated measures: job satisfaction, burnout, and intention to leave. Job satisfaction was rated on a 4-point Likert-type scale (1 = very dissatisfied, 2 = dissatisfied, 3 = satisfied, and 4 = very satisfied). We compared responses of very satisfied and satisfied (which received a score of 1) to those of dissatisfied and very dissatisfied (which received a score of 0). To measure the degree of burnout, we used a structured set of questionnaires termed the Maslach Burnout Inventory–Human Services Survey, which has been used and validated internationally (9, 10). This questionnaire contained nine items, each rated on a seven-point scale. In the analyses, we dichotomized the emotional exhaustion value by using the cutoff of 27, with a score above 27 being defined as high burnout. Intention to leave current employer was measured by a single item asking, “Are you intending to leave your current employer(s) within a year?”

2.3 Statistical analysis

We first presented the trend in the mean number of RNs and assistant staff by comparing data from before the financial incentives for staffing was introduced with that from after the incentives. Next, we estimated what factors affected the changes in nurse employment using multivariate regressions. We finally conducted logistic regressions to examine whether hospital nurses had perceived improvements in their working conditions after the nursing payment reform. We controlled for the demographic characteristics of nurses and the organizational and market characteristics of employing hospitals. We used multinomial specifications in the analyses to control for the hospital effect since respondents coming from the same hospitals shared the same work conditions as well as other organizational characteristics

3 RESULTS

3.1 Effect on RN employment

Between 1996 and 2008, the average number of RNs per 100 bed increased by about 12%, rising from 18.51 to 20.70, while the number of doctors and nurse aides did not show any increasing trend. This increased trend after 1999 was more significant in tertiary than in secondary hospitals. Between 2005 and 2008, the increasing trend disappeared in both types.

RN employment appeared to be higher in General Hospitals than in Hospitals. The volume of patients cared for at a hospital, ownership, urban location, and teaching status were significantly associated with nurse employment.

The coefficients of policy indicators showed significant changes in hospital RN staffing, after controlling for the effects of covariates, after nursing payment reform was implemented. The coefficients of 2002, 2005, and 2008 were 0.39, 0.47, and 0.44, respectively. The interaction terms indicating the effect of policy among Hospital-level institutions compared to General Hospitals showed that Hospitals were not significantly likely to increase their employment of RNs responding to the payment reform. However, their reliance on assistant nursing workforce was significantly more likely to increase during the study period. In 2008, the employment of assistant nurses rose by about 20% compared to 1996.

3.2 Effect on RN satisfaction

We examined whether hospital nurses perceived improvements in their working conditions after the implementation of the nursing payment reform. The results of a chi-square analysis showed that nurses working in a hospital that improved nurse staffing for the past five years were significantly less likely to report job dissatisfaction and intention to leave. About 71% of nurses were dissatisfied with jobs in hospitals where staffing level had not improved, 68% where staffing levels had increased only by one grade, and 65% where staffing had improved by two grades or more ($\chi^2 = 5.463$, $p = 0.065$). Intention to leave current employers was also higher in hospitals with no changes in staffing levels than in hospitals that had advanced their staffing grade for the past five years ($\chi^2 = 6.993$; $p = 0.032$).

We also found that the improvement of nursing fees over the past five years was not significantly related to any measure of nurse outcomes. Current staffing levels also did not show any significant relation with job satisfaction ($p = 0.672$) or intention to leave ($p = 0.289$). However, nurses currently working in hospitals with higher staffing levels were significantly less likely report burnout (coefficient = -0.667 , $p = 0.097$).

4 Conclusions

Linking hospital nursing staffing to payment may provide hospitals with motivations and incentives to improve staffing levels. A decade of experience in Korea shows that the approach is somewhat effective for hospitals with adequate resources to invest in nurse staffing, but less so with hospitals that lack such resources. It can be more effective in improving staffing levels, if considering those hospitals in poor financial shape.

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