

## Technical report

## The job analysis of Korean nurses as a strategy to improve the Korean Nursing Licensing Examination

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### Abstract

**Purpose:** This study aimed at characterizing Korean nurses' occupational responsibilities to apply the results for improvement of the Korean Nursing Licensing Examination. **Methods:** First, the contents of nursing job were defined based on a focus group interview of 15 nurses. Developing a Curriculum (DACOM) method was used to examine those results and produce the questionnaire by 13 experts. After that, the questionnaire survey to 5,065 hospital nurses was done. **Results:** The occupational responsibilities of nurses were characterized as involving 8 duties, 49 tasks, and 303 task elements. Those 8 duties are nursing management and professional development, safety and infection control, the management of potential risk factors, basic nursing and caring, the maintenance of physiological integrity, medication and parenteral treatments, socio-psychological integrity, and the maintenance and improvement of health. **Conclusion:** The content of Korean Nursing Licensing Examination should be improved based on 8 duties and 49 tasks of the occupational responsibilities of Korean nurses.

**Keywords:** Curriculum; Focus groups; Job description; Korea; Nursing licensure

### Introduction

To reflect the clinical practice of Korean nurses to Korean Nursing Licensing Examination (KNLE), it is necessary to review periodically and to revise the job description. Recently, Park et al. [1] performed a job analysis and proposed that the duties of nurses should be classified into jobs and job elements according to nursing process. Job analyses of Korean nurses in some specific fields, such as the rehabilitation nurses [2], outpatient departments [3], hospice palliative care [4], and advanced oncology [5] have been carried out to some extent, but no job analysis of nurses in general has been conducted yet. It is necessary to review the nursing job and revise the

topics of items of KNLE regularly to reflect current demands and environmental changes to nurses. United States National Council of State Boards of Nursing (NCSBN) has maintained a complementary system that reviews and revises the test items of licensing examination by analyzing the new nursing jobs every three years [6].

This study aimed at characterizing the duties of nurses by analyzing the responsibilities of a nurse in a clinical setting and to provide basic data for the improvement and development of the test item of KNLE by reviewing the validity of the content. Specifically we extracted the content of the jobs of nurses, verified level of importance, difficulty, and validity according to the duties and tasks of nurse.

### Methods

#### Study design

This was a descriptive study applying a qualitative research

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method. It included a focus group interview, application of the Developing a Curriculum (DACUM) method.

**Subjects and methods**

Occupational content was obtained from a literature review. Also the job elements were got from interview with focus group that comprised 13 hospital nurses and 2 nurses in the public health center in June 2012. A group of 7 clinical specialty nurses and 6 nursing faculties performed a DACUM analysis with elements obtained from literature review and focus group interview in July 2012. We prepared the questionnaires according to the results after DACUM analysis and conducted the survey to 5,065 nurses (Fig. 1).

A questionnaire was distributed to hospitals in Korea with 300 to 1,000 beds. A total of 5,065 print copies were distributed in September 2012. The level of importance, difficulty, and validity of the task elements were surveyed. Importance was measured on a Likert scale ranging from 1 (not important) to

5 (very important). Difficulty was measured from 1 (very easy) to 5 (very difficult), and validity was measured from 1 (invalid) to 5 (perfectly valid). The reliability of importance, difficulty, and validity for 8 duties of nurses had high scores (range, 0.96-0.99).

**Statistical analysis**

The collected data were analyzed using SPSS for Windows version 22.0 (IBM Corp., Armonk, NY, USA). We used percentages, averages, and standard deviations for analyzing the subjects' general characteristics and their ratings of the importance, difficulty, and validity of the surveyed items.

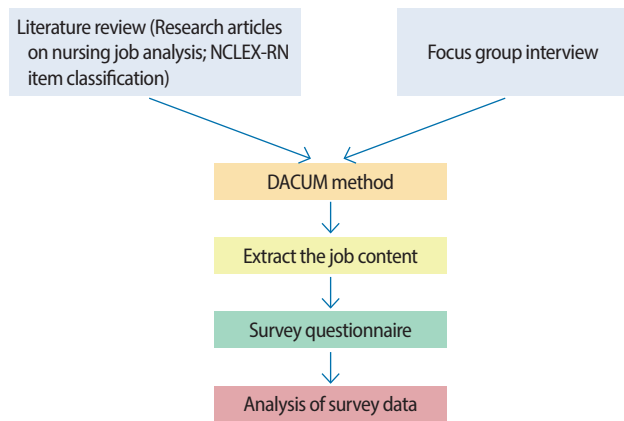
**Ethical approval**

This research was approved by the institutional review board of College of Nursing, Chungnam National University (IRB No, 2012-6).

**Results**

**Extraction of a nurse's job**

After the DACUM analysis, we conceptualized the occupational elements of nurses as consisting of 8 duties, 49 tasks, and 303 task elements. The 49 tasks were identified in the focus group interviews which were practiced in clinical settings. The tasks that occurred in community settings in collaboration with public health service officials were included with reference to the specific nursing responsibilities involved. We determined the elements of tasks after classifying 49 tasks into 8 duties referring the job description tool used in developing the National Council Licensure Examination-Registered Nurse (NCLEX-RN) [6]. The task elements reflected specific knowledge, skills, and attitudes. The 8 duties were as follows: nursing management and professional development, safety and infection control, the management of potential risk factors, basic nursing care, and maintenance of physiological integrity,



**Fig. 1.** Procedure of developing survey questionnaires to assess nurses' jobs. NCLEX-RN, National Council Licensure Examination-Registered Nurse; DACUM, developing a curriculum.

**Table 1.** Mean and standard deviation (SD) of importance, difficulty, and validity scores of 8 duties of Korean nurses obtained from 3,770 Korean nurses in 2012

Duty	Importance	Difficulty	Validity
	Mean (SD)	Mean (SD)	Mean (SD)
Nursing management and development	4.23(0.59)	3.57(0.64)	4.18(0.62)
Safety and infection control	4.33(0.62)	3.61(0.74)	4.21(0.67)
Management of potential risk factor	4.52(0.59)	3.64(0.78)	4.44(0.61)
Basic nursing care	4.25(0.67)	3.37(0.79)	4.22(0.69)
Maintenance of physiologic integrity	4.44(0.64)	3.64(0.79)	4.38(0.66)
Medication and parenteral treatment	4.50(0.62)	3.60(0.85)	4.44(0.63)
Maintenance of socio-psychologic integrity	4.15(0.74)	3.69(0.76)	4.10(0.77)
Maintenance and improvement of health	4.07(0.79)	3.69(0.78)	4.05(0.82)

**Table 2.** Mean and standard deviation (SD) of importance, difficulty, and validity scores of 49 tasks of Korean nurses obtained from 3,770 Korean nurses in 2012

Duty	Task	Importance	Difficulty	Validity
		Mean (SD)	Mean (SD)	Mean (SD)
Nursing management and staff development	Shift reports	4.64 (0.65)	3.42 (0.86)	<b>4.58 (0.67)</b>
	Recording of nursing care	4.42 (0.71)	3.44 (0.86)	4.36 (0.72)
	Prescription management	<b>4.70 (0.61)</b>	3.45 (0.99)	4.54 (0.71)
	Admission care and discharge planning	4.31 (0.72)	3.24 (0.88)	4.27 (0.76)
	Management of equipment and devices	4.21 (0.79)	3.20 (0.91)	4.01 (0.90)
	Documentation and reporting	4.16 (0.79)	3.64 (0.85)	4.12 (0.83)
	Quality monitoring	4.18 (0.77)	<b>3.85 (0.82)</b>	4.19 (1.44)
	Ethical decision-making	4.25 (0.82)	3.62 (0.94)	4.25 (0.80)
	Staff development	3.93 (0.83)	3.83 (0.81)	3.98 (0.83)
	Health system guidance	3.81 (0.88)	3.78 (0.85)	3.83 (1.07)
Safety and infection control	Collaboration with other health professionals	4.13 (0.83)	3.65 (0.88)	4.08 (0.85)
	Environmental management	4.41 (0.73)	3.45 (0.92)	4.24 (0.83)
	Infection control	4.52 (0.67)	3.65 (0.91)	4.42 (0.72)
	Surveillance of safety	<b>4.54 (0.67)</b>	3.58 (0.89)	<b>4.44 (0.70)</b>
Management of potential risk factors	Community disaster preparedness	3.97 (0.91)	<b>3.71 (0.88)</b>	3.84 (1.00)
	Vital signs monitoring	4.46 (0.68)	3.57 (0.91)	4.39 (0.71)
	Emergency care and management	<b>4.72 (0.59)</b>	<b>4.07 (0.96)</b>	<b>4.62 (0.64)</b>
Basic nursing care	Diagnostic test management	4.50 (0.66)	3.48 (0.97)	4.43 (0.71)
	Pre-, peri-, and postoperative care	4.57 (0.64)	3.47 (0.93)	4.48 (0.68)
	Pre-, peri-, and postnatal care	4.44 (0.71)	3.74 (0.84)	4.39 (0.71)
	Self-care assistance: hygiene	4.14 (0.88)	3.17 (0.97)	4.10 (0.84)
	Nutrition management	4.31 (0.71)	3.42 (0.83)	4.22 (0.76)
	Urinary elimination management	4.36 (0.71)	3.48 (0.87)	4.32 (0.73)
	Bowel management	4.24 (0.80)	3.27 (0.93)	4.22 (0.80)
	Sleep and bed rest care	4.06 (0.89)	3.15 (0.99)	4.10 (0.89)
	Pressure ulcer prevention and care	<b>4.50 (0.70)</b>	<b>3.55 (0.95)</b>	<b>4.41 (0.74)</b>
	Exercise and activity promotion	4.06 (0.82)	3.36 (0.85)	4.10 (0.83)
Maintenance of physiological integrity	Respiratory monitoring	<b>4.51 (0.67)</b>	3.67 (0.89)	<b>4.44 (0.69)</b>
	Circulatory care	4.48 (0.70)	<b>3.70 (0.88)</b>	4.41 (0.72)
	Maintenance of regulation and metabolism	4.33 (0.75)	<b>3.70 (0.85)</b>	4.31 (0.77)
	Sensation management	4.38 (0.71)	3.68 (0.84)	4.32 (0.74)
	Wound care	4.47 (0.72)	3.60 (0.90)	4.39 (0.73)
	Tube care	4.48 (0.71)	3.56 (0.93)	4.41 (0.72)
	Pain management	4.44 (0.87)	3.44 (0.98)	4.40 (0.74)
Medication and parenteral treatments	Medication administration	4.55 (0.68)	3.60 (0.95)	4.46 (0.70)
	Medication management	4.35 (0.78)	3.46 (0.96)	4.30 (0.81)
	Blood products administration	<b>4.62 (0.63)</b>	3.56 (1.00)	4.56 (0.68)
	Chemotherapy and radiation therapy management	4.53 (0.70)	<b>3.78 (0.95)</b>	<b>4.47 (0.71)</b>
	Total parenteral nutrition management	4.34 (0.79)	3.51 (0.93)	4.32 (0.76)
Maintenance of socio-psychological integrity	Support system enhancement	4.17 (0.82)	3.67 (0.89)	4.16 (0.83)
	Hospice care	<b>4.27 (0.78)</b>	3.74 (0.87)	<b>4.19 (0.81)</b>
	Maintenance of the value of life and beliefs	3.98 (0.94)	3.69 (0.96)	3.92 (0.99)
	Stress reduction	4.07 (0.87)	3.64 (0.86)	4.04 (0.90)
	Risk identification and management	4.14 (0.89)	<b>3.71 (0.86)</b>	4.07 (0.89)
	Substance use management	4.12 (0.85)	3.64 (0.89)	4.07 (0.89)
Maintenance and improvement of health	Education	<b>4.17 (0.82)</b>	3.65 (0.87)	<b>4.12 (0.87)</b>
	Health screening	4.04 (0.89)	3.63 (0.90)	4.04 (0.92)
	Risk identification	4.10 (0.86)	3.66 (0.86)	4.07 (0.89)
	Maintenance of sexual and reproductive health	3.95 (0.93)	<b>3.80 (0.88)</b>	3.96 (0.95)

medication and parenteral treatments, socio-psychological integrity, and maintenance and improvement of health (Table 1). We identified the following 49 tasks, categorized by duty (Table 2).

### Importance, difficulty, and validity of nurse's 8 duties and 49 tasks

Out of 5,065 subject, 3,770 responded (74.4%) to the survey. Table 1 showed the importance, difficulty, and validity of 8 duties of nurses. The most important duty was "management of potential risk factors" (4.52). The least important duty was "maintenance and improvement of health" (4.07). The most difficult duty was "maintenance of socio-psychological integrity" (3.69). The least difficult duty was "basic nursing and caring" (3.37). The most valid duty was "management of potential risk factors" (4.44). The nurses viewed "management of potential risk factors" as the least valid duty (4.05). Table 2 showed the importance, difficulty, and validity of 49 nurse's tasks. Tasks of the greatest value in each duty were marked in bold.

## Discussion

The framework of the job analysis in early 2000 reported that nursing job included nursing assessments, nursing diagnoses, nursing implementation, and nursing evaluations. This framework has been the basis of nursing process [1]. The distinctive feature of the nursing job framework in present study is its focus on practice in a clinical setting. Nurse has 8 duties and 49 tasks in this study, and we used simple extraction without duplication to compare our findings with descriptions of a nurse's job published in other studies. Some researchers have attempted to assess the validity of the subjects tested on the national examinations, but it is important to keep in mind that the content of KNLE has not set as an integrated items but 7 subject-based items [1]. Thus, the integration of subjects needs to be done first to apply information about jobs to the national examination.

In the survey results regarding the importance, difficulty, and validity of various responsibilities, the most important duty (the management of potential risk factors) had the highest level of validity, because that duty is closely related to the main responsibilities of nurses (monitoring, screening, surgery, etc.). An analysis of nursing job in intensive care found that monitoring and observing [1] was the main responsibilities of nurses. Emergency care and management had especially high importance, difficulty, and validity, and this finding corresponded to those reported in a previous study [3], indicating that emergency care and management was the most important task in clinical nursing. Thus, most nurses understood the importance of emergency care.

The duty "maintenance and improvement of health" included education, health screening, and risk identification. In order to reflect community nursing, the content of the tasks for health screening and risk identification reflected an understanding of health issues according to the life cycle. Moreover, the maintenance of sex and reproductive health, which are mostly dealt with in the field of maternity nursing, had a low for importance but had a high difficulty score. This result may reflect the relatively lower proportion of survey participants who worked in obstetrics in comparison to the participants who worked in the general ward. The findings of Gu et al. [7] are also relevant, in that they found that neonatal patient care and mastectomy patient care were associated with lower certainty and fewer patients in the clinical practice. Therefore, the educational skill should be developed because one of major role of nurses is to educate patients and their families [8]. The most difficult duty was the maintenance of socio-psychological integrity (3.69), and hospice care was the most difficult task in that category. Since hospice care requires professional knowledge and interpersonal skills, it is hard to classify hospice care as a general job that nurses perform [4]. As a standard aspect of national exam items, it is appropriate to classify hospice care as a job element rather than a task, even though the care provided involves caring for dying patients and their families.

Sleep and bed rest care in basic nursing and caring were reported to be the easiest task. Furthermore, such tasks, including nutrition, exercise, and sleep, were necessary to perform as patients recovered, regardless of their condition. These tasks pose very few clinical questions for developing a standard nursing framework [7].

Since cardiopulmonary resuscitation performance is a component of the highest-validity task (emergency care and management) in the duty of the management of potential risk factors, it is an important task that all staff members must perform, regardless of job position and department. The administration of blood products, which had the highest validity in the category of medication and parenteral treatments, is a crucially important task, and its high validity score reflects the presence of many job elements, such as checking the condition of the patients who give blood transfusions, observing side effects, blood management, and more. According to nursing practice guidelines, medication management and blood transfusion are included in the top 10 priorities within nursing practices. General nurses recognize that this task must be performed frequently [7].

Above findings can be evident data affecting the content of the KNLE items. Some of these jobs had lower importance and lower validity scores because they include departments with a small number of wards, such as the community sector

and maternal and pediatric wards. It is necessary to conduct further occupational analysis targeting nurses in special areas. Also the KNLE should be changed from a subject form to an integrated form in order to improve the examination, as nursing job are classified according to clinical practice. Further comparative analysis of each subject of the KNLE and nursing job is necessary, as well as the implementation of regular job analyses to reflect changes in the health care environment.

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### Conflict of interest

No potential conflict of interest relevant to this article was reported.

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### Supplementary materials

Audio recording of the abstract.  
Raw data of the research.

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