

# Relationship between job satisfaction and intention to remain among nurses working in a hospital in Japan

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## Abstract

**Objectives:** This study examined the relationship between job satisfaction and intention to remain in the nursing profession among hospital nurses.

**Method:** A self-administered questionnaire survey was conducted among nurses working at a hospital to evaluate their attributes, intention to remain, and job satisfaction levels. The Revised Job Satisfaction Inventory for Nurses (JSN-R) was used to assess job satisfaction levels.

**Results:** Multiple regression analysis of 406 valid responses extracted explanatory variables for nurses' intention to remain in their profession from 16 subscales of the JSN-R. Significant relationships were observed for the following: "Intention to remain in the same department" with "Collaborative relationship among nursing team," "Amount of work," "Salary," and "Work environment"; "Intention to remain in the same hospital" with "Relationship with superiors," "Relationship with hospital staff other than physicians," and "Salary"; and "Intention to remain in the nursing profession" with "Relationship with hospital staff other than physicians," "Salary," and "Exercising your abilities."

**Conclusion:** This study indicated that there is a relationship between job satisfaction among nurses and intention to remain in the nursing profession.

## KEY WORDS

Nurses, Job satisfaction, Intention to remain

## Background

Research on job satisfaction began in the 1930s to examine ways to increase worker efficiency<sup>1)</sup>. However, the volume of studies on job satisfaction decreased after it became clear that the correlation coefficient between job satisfaction and business performance was only  $r=0.14$ <sup>2)</sup>. Yet, there has been growing interest in recent years about job satisfaction in the nursing profession, which has been attributed to an increase in mental health issues among workers and changing attitudes towards the importance of customer satisfaction<sup>3)</sup>. Mental health issues have become more widespread in the nursing profession due to the greater workload that nurses now have as a result of Japan's increasingly sophisticated and complex health care system, the increase in seriously ill and elderly

patients, and the reduction in hospital admission periods<sup>4)</sup>. Attitudes towards the importance of customer satisfaction have changed in that the satisfaction of nurses as service providers is now considered essential to the delivery of quality health care services given the increased perception in Japan of health care as a type of human service<sup>3)</sup>.

A high percentage of workers in the health care and welfare industries experience significant anxiety, worry, and stress<sup>5)</sup>. Job satisfaction among nurses is therefore crucial because the ability to mitigate anxiety and stress and realize job satisfaction would enable nurses to deliver improved health care services. Job satisfaction is also closely related to the intention of nurses to leave or remain in their profession<sup>6-9)</sup>. We must ask, what is the extent of empirical evidence on nurse job satisfaction and intent to

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leave or remain in the nursing profession?

We searched the *Igaku Chuo Zasshi* (a medical literature database created by the Japan Medical Abstracts Society) website for original articles on nurse job satisfaction and intent to leave or remain in the profession and identified 69 articles published over a five-year period from 2010 to 2015. A summary of these studies is provided below.

A study by Sekiguchi and Ishii<sup>10)</sup> used Ozaki's revised Japanese version of Stamps' occupational satisfaction scale (herein "Stamps-Ozaki scale")<sup>11)</sup> showed that nurses were satisfied with their professional autonomy, their relationships with other nurses, and their occupational status, but were dissatisfied with their salary and nursing tasks. There were a study by Kameoka and Togashi-Arakawa<sup>12)</sup> on the effects of reality shock on the work attitude of newly graduated nurses, a study by Sakai, Hagi, Inoue, and Hasegawa<sup>13)</sup> on the specific attitudes of mid-level nurses, and a study by Sumiyoshi, Kumada, and Yago<sup>14)</sup> targeting nurses in their thirties with more than 10 years of nursing experience. Nomoto, Maehara, and Hara<sup>15)</sup> found that practical nursing experience and personal relationships had an impact on intent to remain in the profession. Sumiyoshi et al.<sup>14)</sup> reported that financial considerations were the most common reason for remaining in the nursing profession.

As shown above, various studies have addressed the themes of nurse job satisfaction and intent to remain or leave the profession. However, despite the large amount of literature in Japan on nurse job satisfaction, there is a lack of consistency in terms of study outcomes and issues<sup>16)</sup>. There are also problems with how nursing job satisfaction scales have been used in the literature, such as partial revisions to established methods<sup>16)</sup>.

### Objective

In this study, we sought to demonstrate the relationship between job satisfaction and intention to remain in the profession among nurses working at a hospital in Japan.

### Methods

#### 1. Study Design

We used a relational search approach based on quantitative data from a cross-sectional survey consisting of a self-administered questionnaire.

#### 2. Participants and Data Collection

Our study targeted a single hospital in the Kinki region of Japan. This hospital is a public-interest corporation classified as a general hospital with 1,171 beds. The hospital specializes in psychiatry but also has departments in internal medicine, surgery, rehabilitation, obstetrics, as well as a hemodialysis center and a visiting nurse station. The self-administered questionnaire was distributed to all 469 nurses working at the hospital between 12 and 26 June 2015 by the nursing manager and were collected at a later date.

A total of 418 forms were collected (89.1% response rate). After excluding blank and incomplete forms, there were 406 valid responses (86.6% valid response rate). Table 1 shows characteristics of the respondents. Responses were received from 74 male nurses (18.2%) and 324 female nurses (79.8%), and no responses were received from 8 nurses (2.0%). The average age of nurses was 37.6 years (standard deviation=10.3 years), average length of employment at the hospital was 6.3 years (SD=7.1 year), and average nursing experience was 12.1 year (SD=9.9 years).

#### 3. Selecting the Job Satisfaction Scale

As job satisfaction is an intangible psychological concept, the method by which it is measured is very important. We found that the following four scales tested for validity and reliability: Ozaki's revised scale<sup>11)</sup>, the Japanese-language version of the McCloskey and Mueller Satisfaction Scale<sup>17-18)</sup>, a scale developed by Nakayama and Nojima<sup>19)</sup>, and the Japanese-language version of the Nursing Job Satisfaction Scale<sup>20)</sup>. The overwhelming majority of articles used Ozaki's revised scale<sup>11)</sup>.

However, there have been significant changes to the nursing environment since the first job satisfaction scales were developed in the 1970s<sup>21)</sup>, so it is essential to consider using scales that have been developed more recently. For instance, Eguchi et al.<sup>22-23)</sup> and Muya<sup>24)</sup> have each developed nursing job satisfaction scales in recent years. After comparing these scales, we concluded that one scale—namely, the Job Satisfaction Inventory for Nurses—Revised Version (JSN-R)<sup>22)</sup>—is: (a) versatile enough to be used in general hospitals, (b) possesses a demonstrated high level of internal consistency, (c) includes specific scale items on tasks not directly related to nursing that are more specific and can therefore be used to study satisfaction with non-nursing tasks such as committee activities, and (d) better reflects actual nursing

Table 1. Characteristics of the respondents	N(%)	
Total	406	
Sex		
Male	74	(18.2)
Femel	324	(79.8)
No answer	8	(2.0)
Age		
21-24 y	49	(12.1)
25-29 y	49	(12.1)
30-39 y	137	(33.7)
40-49 y	106	(26.1)
≥50 y	57	(14.0)
No answer	8	(2.0)
Marital Status		
Unmarried	172	(42.4)
Married without children	23	(5.7)
Married with children	195	(48.0)
Other	14	(3.4)
No answer	2	(.5)
Highest level of education		
Vocational school or nursing college	377	(92.9)
University bachelor's or master's degree in nursing	16	(3.9)
Other	8	(2.0)
No answer	5	(1.2)
Qualification		
Nurse	364	(89.7)
Assistant nurse	40	(9.8)
No answer	2	(.5)
Department		
Psychiatry department	220	(54.2)
General departments	185	(45.6)
No answer	1	(.2)
Type of employment		
8-hour shift	32	(7.9)
12-hour shift/early or late 12-hour shift	263	(64.8)
Day shift only	69	(17.0)
Part-time/temporary	39	(9.6)
No answer	3	(.7)
Years employed at the hospital		
≤1 y	80	(19.7)
2-3 y	121	(29.8)
4-9 y	126	(31.0)
10-19 y	46	(11.3)
≥20 y	31	(7.7)
No answer	2	(.5)
Years of nursing experience		
≤1 y	28	(6.9)
2-3 y	65	(16.0)
4-9 y	104	(25.6)
10-19 y	111	(27.4)
≥20 y	93	(22.9)
No answer	5	(1.2)

situations.

#### 4. Questionnaire

The questionnaire form comprised the following three parts.

##### a. Attributes surveyed

The questionnaire covered the following nine nurse attributes: Age, sex, highest level of education, marital status, qualifications, department, type of employment, years employed at the hospital, and years of nursing experience.

##### b. Intention to remain in the nursing profession

After reviewing the literature, we created the following three original questions: Do you want to continue working in your current department?; Do you want to continue

working at this hospital?; and Do you want to continue working as a nurse? Respondents were asked to select one of the following four responses: Strongly agree; Agree; Somewhat disagree; and Strongly disagree. The responses were then scored from four points for "Strongly agree" to one point for "Strongly disagree."

##### c. Job satisfaction

We used the JSN-R scale<sup>22)</sup> to measure job satisfaction from the perspective of the following 16 subscales: (1) Relationship with superiors-four items, (2) Relationship with colleagues-three items, (3) Collaborative relationship with nursing team-five items, (4) Relationship with physicians-four items, (5) Relationship with hospital staff other than physicians-three items, (6) Relationship with patients-five items, (7) Relationship with patient family members-three items, (8) Amount of work-five items, (9) Non-nursing duties-four items, (10) Salary-four items, (11) Exercising your abilities-six items, (12) Autonomy-five items, (13) Learning opportunities-five items, (14) Work environment-five items, (15) Work shifts-three items, and (16) Social standing-two items.

When answering these 66 questions, respondents were asked to select one of the following five responses: Very satisfied; Satisfied; Not sure, Not satisfied, and Very dissatisfied. The responses were then scored from five points for "Very satisfied" to one point for "Very dissatisfied." The score for each subscale was then calculated by dividing the total score by the number of items. Thus, a higher score indicated a higher level of satisfaction, and the scores of each subscale could be compared.

#### 5. Ethical Consideration

Participation in the study was voluntary and anonymous. All study participants received a written explanation of the study's objectives, methods, anticipated outcomes, ethical considerations, and an assurance that they could withdraw from the study even after starting the questionnaire. Submission of the questionnaire form was regarded as consent to participate in the study.

We obtained permission to use the JSN-R scale<sup>22)</sup> from the developers. This study was conducted with the approval of the Medical Ethics Committee of Kanazawa University (approval no: 590-1) .

#### 6. Data Analysis

We began by performing an exploratory factor analysis of the JSN-R scale and then calculated Cronbach's alpha

coefficient to determine factorial validity in the present study and the internal consistency of each subscale. Next, we performed one-way analysis of variance (ANOVA) to estimate the difference between each of the JSN-R scale score attributes, and performed a chi-squared test to estimate the difference between each attribute of willingness to remain in the nursing profession. We categorized the attributes as indicating in Table 1. Finally, to achieve the study objective, we performed (hierarchical) multiple regression analysis and identified the variables from the 16 JSN-R subscales that best explained the willingness of nurses to remain in their profession.

**Results**

1. Scale reliability & validity in the context of this study

After performing exploratory factor analysis (maximum likelihood/promax rotation) , we identified 16 factors that

could be interpreted in the same manner as the original JSN scale.

Cronbach's alpha coefficient was slightly low for the "Relationship with hospital staff other than physicians" and "Social standing" subscales at 0.689 and 0.665, respectively, but was between 0.741 and 0.856 for all other subscales. We concluded that the scale had a certain degree of internal consistency because these two values were not extremely low.

2. Differences in JSN-R Subscale Scores by Attribute (Table 2-1-2-3)

Sex: There were significant differences in the "Relationship with superiors," "Amount of work," "Exercising your abilities," "Learning opportunities," and "Work environment" subscale scores according to sex. Specifically, all of these scores were significantly higher in the male group.

Age: There were significant differences in the

Table2-1. Differences in JSN-R subscale scores by attribute

	N	Relationship with superiors	Relationship with colleagues	Collaborative relationship with nursing team	Relationship with physicians	Relationship with hospital staff other than physicians	Relationship with patients	n.s.
		Mean ± S.D.	Mean ± S.D.	Mean ± S.D.	Mean ± S.D.	Mean ± S.D.	Mean ± S.D.	
Sex								
Male	74	3.65 ± .59 *	3.33 ± .51 n.s.	3.52 ± .62 n.s.	3.14 ± .51 n.s.	3.22 ± .50 n.s.	3.28 ± .45 n.s.	
Femel	324	3.47 ± .64	3.26 ± .46	3.40 ± .58	3.07 ± .54	3.23 ± .47	3.29 ± .47	
Age								
21-24 y	49	3.69 ± .58 **	3.29 ± .42 n.s.	3.78 ± .69 **	3.15 ± .47 n.s.	3.20 ± .45 n.s.	3.41 ± .45 n.s.	
25-29 y	49	3.66 ± .64	3.40 ± .55	3.41 ± .55	3.04 ± .35	3.12 ± .46	3.25 ± .43	
30-39 y	137	3.53 ± .57	3.28 ± .44	3.39 ± .53	3.09 ± .51	3.26 ± .44	3.25 ± .42	
40-49 y	106	3.38 ± .76	3.25 ± .54	3.28 ± .62	3.02 ± .66	3.23 ± .53	3.29 ± .56	
≥50 y	57	3.32 ± .57	3.16 ± .42	3.41 ± .51	3.13 ± .53	3.29 ± .48	3.35 ± .38	
Marital Status								
Unmarried	172	3.50 ± .64 n.s.	3.25 ± .49 n.s.	3.45 ± .64 n.s.	3.04 ± .48 n.s.	3.15 ± .47 n.s.	3.28 ± .48 **	n.s.
Married without children	23	3.60 ± .52	3.28 ± .34	3.60 ± .42	3.30 ± .45	3.41 ± .33	3.35 ± .39	
Married with children	195	3.51 ± .64	3.30 ± .46	3.40 ± .53	3.09 ± .57	3.28 ± .47	3.31 ± .43	
Highest level of education								
Vocational school or nursing college	377	3.49 ± .64 n.s.	3.28 ± .46 n.s.	3.41 ± .58 n.s.	3.08 ± .53 n.s.	3.23 ± .46 n.s.	3.29 ± .44 n.s.	
University bachelor's or master's degree in nursing	16	3.67 ± .61	3.29 ± .51	3.68 ± .60	3.14 ± .45	3.35 ± .68	3.49 ± .55	
Qualification								
Nurse	364	3.49 ± .65 n.s.	3.28 ± .48 n.s.	3.41 ± .59 n.s.	3.08 ± .55 n.s.	3.22 ± .48 n.s.	3.30 ± .47 n.s.	
Assistant nurse	40	3.50 ± .58	3.19 ± .42	3.43 ± .57	3.06 ± .36	3.26 ± .44	3.22 ± .34	
Department								
Psychiatry department	220	3.48 ± .65 n.s.	3.23 ± .50 n.s.	3.39 ± .62 n.s.	3.01 ± .50 **	3.16 ± .49 **	3.26 ± .47 **	n.s.
General departments	185	3.52 ± .63	3.32 ± .45	3.45 ± .55	3.16 ± .56	3.31 ± .43	3.33 ± .44	
Type of employment								
8-hour shift	32	3.46 ± .49 n.s.	3.32 ± .46 n.s.	3.41 ± .54 n.s.	3.09 ± .49 n.s.	3.29 ± .41 *	3.43 ± .39 *	
12-hour shift/early or late 12-hour shift	263	3.48 ± .70	3.24 ± .49	3.38 ± .62	3.05 ± .53	3.17 ± .48	3.25 ± .48	
Day shift only	69	3.53 ± .49	3.37 ± .46	3.46 ± .54	3.16 ± .61	3.37 ± .47	3.40 ± .44	
Part-time/temporary	39	3.57 ± .56	3.28 ± .39	3.54 ± .50	3.06 ± .46	3.27 ± .42	3.26 ± .36	
Years employed at the hospital								
≤1 y	80	3.72 ± .53 **	3.32 ± .39 n.s.	3.70 ± .56 **	3.17 ± .50 n.s.	3.31 ± .44 n.s.	3.37 ± .42 *	
2-3 y	121	3.57 ± .61	3.29 ± .50	3.44 ± .59	3.08 ± .48	3.24 ± .43	3.29 ± .44	
4-9 y	126	3.38 ± .66	3.17 ± .50	3.23 ± .60	3.00 ± .55	3.15 ± .51	3.21 ± .48	
10-19 y	46	3.45 ± .69	3.33 ± .45	3.35 ± .52	3.11 ± .54	3.22 ± .43	3.29 ± .45	
≥20 y	31	3.21 ± .64	3.38 ± .45	3.43 ± .43	3.10 ± .70	3.27 ± .57	3.46 ± .50	
Years of nursing experience								
≤1 y	28	3.94 ± .36 **	3.30 ± .34 n.s.	4.01 ± .47 **	3.21 ± .28 n.s.	3.20 ± .29 n.s.	3.41 ± .40 n.s.	
2-3 y	65	3.56 ± .61	3.32 ± .47	3.48 ± .60	3.08 ± .42	3.22 ± .43	3.35 ± .46	
4-9 y	104	3.48 ± .62	3.27 ± .50	3.35 ± .54	3.02 ± .50	3.17 ± .51	3.19 ± .48	
10-19 y	111	3.52 ± .63	3.25 ± .51	3.34 ± .64	3.11 ± .64	3.26 ± .48	3.34 ± .50	
≥20 y	93	3.30 ± .70	3.27 ± .46	3.36 ± .51	3.05 ± .56	3.27 ± .50	3.29 ± .40	

1) One-way ANOVA \* :p<.05 \*\* :p<.01

“Relationship with superiors,” “Collaborative relationship with nursing team,” “Amount of work,” “Non-nursing duties,” “Exercising your abilities,” “Autonomy,” and “Work shifts” subscale scores according to age. Specifically, scores in all of these seven subscales were highest in the group of nurses aged 21–24 years. In all of the nurse age groups except nurses aged  $\geq 50$  years, the subscale scores often declined significantly as age increased, whereas scores in the  $\geq 50$  years group were predominantly higher than those in the 40–49 years group. Scores for the “Non-nursing duties” and “Autonomy” subscales were lowest in the 25–29 years group.

Marital status: There was a significant difference in the “Relationship with hospital staff other than physicians” subscale scores according to marital status. This subscale score was highest in the married without children group,

and was significantly low in the married with children and unmarried groups.

Highest level of education: There was a significant difference in the “Autonomy” subscale scores according to highest level of education. Specifically, scores for this subscale were significantly higher among nurses with a university bachelor’s or master’s degree in nursing.

Qualifications: There were no significant differences in any of the subscale scores according to qualifications.

Department: There were significant differences in the “Relationship with physician,” “Relationship with hospital staff other than physicians,” “Relationship with patients,” and “Work environment” subscale scores according to department. Specifically, scores for all of these four subscales were significantly higher among nurses working in general departments.

Table2-2. Differences in JSN-R subscale scores by attribute

	Relationship with patient family members	Amount of work	Non- nursing duties	Salary	Exercising your abilities	Autonomy
	Mean $\pm$ S.D.	Mean $\pm$ S.D.	Mean $\pm$ S.D.	Mean $\pm$ S.D.	Mean $\pm$ S.D.	Mean $\pm$ S.D.
Sex						
Male	3.14 $\pm$ .40	2.88 $\pm$ .70	3.11 $\pm$ .57	2.20 $\pm$ .75	3.37 $\pm$ .48	3.45 $\pm$ .55
Femal	3.20 $\pm$ .47	2.62 $\pm$ .68	2.98 $\pm$ .52	2.33 $\pm$ .76	3.23 $\pm$ .48	3.33 $\pm$ .51
Age						
21-24 y	3.16 $\pm$ .35	2.89 $\pm$ .69	3.28 $\pm$ .70	2.36 $\pm$ .77	3.47 $\pm$ .49	3.58 $\pm$ .50
25-29 y	3.12 $\pm$ .42	2.70 $\pm$ .81	2.93 $\pm$ .52	2.12 $\pm$ .69	3.24 $\pm$ .48	3.25 $\pm$ .52
30-39 y	3.15 $\pm$ .46	2.73 $\pm$ .65	2.99 $\pm$ .48	2.39 $\pm$ .80	3.22 $\pm$ .45	3.33 $\pm$ .48
40-49 y	3.24 $\pm$ .51	2.49 $\pm$ .66	2.95 $\pm$ .55	2.23 $\pm$ .73	3.22 $\pm$ .52	3.31 $\pm$ .62
$\geq 50$ y	3.24 $\pm$ .41	2.64 $\pm$ .64	2.99 $\pm$ .34	2.32 $\pm$ .75	3.24 $\pm$ .41	3.38 $\pm$ .39
Marital Status						
Unmarried	3.15 $\pm$ .44	2.67 $\pm$ .70	2.98 $\pm$ .61	2.24 $\pm$ .80	3.26 $\pm$ .51	3.33 $\pm$ .55
Married without children	3.25 $\pm$ .40	2.78 $\pm$ .56	3.13 $\pm$ .43	2.38 $\pm$ .63	3.38 $\pm$ .37	3.49 $\pm$ .39
Married with children	3.21 $\pm$ .44	2.68 $\pm$ .67	3.03 $\pm$ .43	2.36 $\pm$ .74	3.25 $\pm$ .43	3.37 $\pm$ .48
Highest level of education						
Vocational school or nursing college	3.19 $\pm$ .43	2.66 $\pm$ .67	3.01 $\pm$ .51	2.29 $\pm$ .76	3.26 $\pm$ .46	3.34 $\pm$ .51
University bachelor’s or master’s degree in nursing	3.25 $\pm$ .60	3.00 $\pm$ .87	3.19 $\pm$ .74	2.47 $\pm$ .84	3.34 $\pm$ .50	3.63 $\pm$ .59
Qualification						
Nurse	3.19 $\pm$ .46	2.67 $\pm$ .70	3.01 $\pm$ .55	2.29 $\pm$ .77	3.27 $\pm$ .49	3.36 $\pm$ .53
Assistant nurse	3.12 $\pm$ .29	2.65 $\pm$ .55	3.01 $\pm$ .28	2.43 $\pm$ .65	3.13 $\pm$ .33	3.24 $\pm$ .36
Department						
Psychiatry department	3.13 $\pm$ .46	2.67 $\pm$ .68	2.97 $\pm$ .52	2.29 $\pm$ .74	3.22 $\pm$ .48	3.36 $\pm$ .54
General departments	3.25 $\pm$ .43	2.67 $\pm$ .69	3.05 $\pm$ .53	2.31 $\pm$ .79	3.29 $\pm$ .48	3.34 $\pm$ .50
Type of employment						
8-hour shift	3.22 $\pm$ .48	2.82 $\pm$ .69	3.02 $\pm$ .48	2.44 $\pm$ .70	3.26 $\pm$ .38	3.42 $\pm$ .44
12-hour shift/early or late 12-hour shift	3.15 $\pm$ .46	2.61 $\pm$ .67	2.97 $\pm$ .55	2.22 $\pm$ .76	3.22 $\pm$ .49	3.32 $\pm$ .54
Day shift only	3.31 $\pm$ .45	2.74 $\pm$ .73	3.09 $\pm$ .55	2.37 $\pm$ .75	3.36 $\pm$ .52	3.41 $\pm$ .53
Part-time/temporary	3.14 $\pm$ .37	2.86 $\pm$ .67	3.07 $\pm$ .29	2.56 $\pm$ .74	3.26 $\pm$ .39	3.35 $\pm$ .44
Years employed at the hospital						
$\leq 1$ y	3.19 $\pm$ .44	2.85 $\pm$ .71	3.21 $\pm$ .45	2.50 $\pm$ .86	3.39 $\pm$ .44	3.44 $\pm$ .44
2-3 y	3.12 $\pm$ .45	2.76 $\pm$ .66	3.02 $\pm$ .58	2.36 $\pm$ .70	3.29 $\pm$ .50	3.38 $\pm$ .51
4-9 y	3.14 $\pm$ .42	2.58 $\pm$ .72	2.91 $\pm$ .53	2.14 $\pm$ .72	3.13 $\pm$ .48	3.26 $\pm$ .58
10-19 y	3.26 $\pm$ .45	2.56 $\pm$ .59	2.98 $\pm$ .43	2.20 $\pm$ .74	3.22 $\pm$ .42	3.29 $\pm$ .51
$\geq 20$ y	3.43 $\pm$ .52	2.43 $\pm$ .54	2.88 $\pm$ .46	2.43 $\pm$ .75	3.31 $\pm$ .47	3.44 $\pm$ .49
Years of nursing experience						
$\leq 1$ y	3.07 $\pm$ .26	3.11 $\pm$ .48	3.43 $\pm$ .46	2.66 $\pm$ .67	3.52 $\pm$ .40	3.51 $\pm$ .46
2-3 y	3.18 $\pm$ .39	2.82 $\pm$ .68	3.09 $\pm$ .63	2.45 $\pm$ .78	3.33 $\pm$ .49	3.38 $\pm$ .48
4-9 y	3.16 $\pm$ .40	2.65 $\pm$ .75	2.96 $\pm$ .47	2.16 $\pm$ .75	3.21 $\pm$ .46	3.27 $\pm$ .55
10-19 y	3.22 $\pm$ .59	2.64 $\pm$ .69	2.97 $\pm$ .56	2.29 $\pm$ .81	3.20 $\pm$ .53	3.34 $\pm$ .58
$\geq 20$ y	3.20 $\pm$ .40	2.48 $\pm$ .60	2.91 $\pm$ .44	2.28 $\pm$ .69	3.24 $\pm$ .43	3.37 $\pm$ .44

1) One-way ANOVA \*: $p < .05$  \*\*: $p < .01$

Type of employment: There were significant differences between the “Relationship with hospital staff other than physicians,” “Relationship with patients,” “Salary,” and “Work environment” subscale scores according to type of employment. Scores for the “Relationship with hospital staff other than physicians” and “Work environment” subscales were highest in the day shift only group, while scores for the “Relationship with patient” subscale were highest in the 8-hour shift group, and scores for the “Salary” subscale were highest in the part-time/temporary group. Meanwhile, scores for the “Work environment” subscale were lowest in the 12-hour shift/early or late 12-hour shift group.

Years employed at hospital: There were significant differences between the “Relationship with superiors,”

“Collaborative relationship with nursing team,” “Relationship with patients,” “Relationship with patient family members,” “Amount of work,” “Non-nursing duties,” “Salary,” “Exercising your abilities,” “Work environment,” and “Work shifts” subscale scores according to years employed at the hospital. Scores for the “Relationship with patients” and “Relationship with patient family members” subscales were highest in the ≥ 20 years group, and scores for the remaining eight subscales were highest in the ≤ 1 year group. Scores for the “Relationship with superiors,” “Amount of work,” “Non-nursing duties,” “Work environment,” and “Work shifts” subscales were lowest in the ≥20 years group. Moreover, scores in the “Collaborative relationship with nursing team,” “Relationship with patients,” “Salary,” and “Exercising your abilities,”

Table2-3. Differences in JSN-R subscale scores by attribute

	<u>Learning opportunities</u>	<u>Work environment</u>	<u>Work shifts</u>	<u>Social standing</u>
	Mean ± S.D.	Mean ± S.D.	Mean ± S.D.	Mean ± S.D.
Sex				
Male	3.35 ± .51 **	3.23 ± .55 *	3.64 ± .81 n.s.	3.05 ± .69 n.s.
Femal	3.17 ± .50	3.06 ± .60	3.50 ± .82	2.97 ± .58
Age				
21-24 y	3.38 ± .60 n.s.	3.27 ± .73 n.s.	3.95 ± .88 **	3.15 ± .67 n.s.
25-29 y	3.29 ± .52	3.13 ± .52	3.65 ± .68	2.88 ± .60
30-39 y	3.18 ± .46	3.11 ± .52	3.57 ± .78	3.05 ± .53
40-49 y	3.17 ± .55	3.02 ± .63	3.39 ± .85	2.90 ± .62
≥50 y	3.14 ± .39	2.96 ± .62	3.26 ± .77	2.96 ± .63
Marital Status				
Unmarried	3.23 ± .52 n.s.	3.10 ± .59 n.s.	3.56 ± .85 n.s.	2.95 ± .61 n.s.
Married without children	3.32 ± .50	3.05 ± .42	3.64 ± .62	3.09 ± .36
Married with children	3.19 ± .46	3.10 ± .61	3.54 ± .80	3.05 ± .57
Highest level of education				
Vocational school or nursing college	3.21 ± .49 n.s.	3.08 ± .59 n.s.	3.52 ± .82 n.s.	2.98 ± .59 n.s.
University bachelor’s or master’s degree in nursing	3.34 ± .56	3.20 ± .66	3.90 ± .75	3.22 ± .71
Qualification				
Nurse	3.22 ± .52 n.s.	3.09 ± .60 n.s.	3.53 ± .81 n.s.	2.98 ± .61 n.s.
Assistant nurse	3.10 ± .26	3.05 ± .50	3.51 ± .88	3.05 ± .42
Department				
Psychiatry department	3.22 ± .51 n.s.	2.92 ± .54 **	3.53 ± .77 n.s.	2.98 ± .61 n.s.
General departments	3.19 ± .50	3.29 ± .59	3.54 ± .87	3.00 ± .58
Type of employment				
8-hour shift	3.15 ± .43 n.s.	2.84 ± .53 **	3.40 ± .64 n.s.	3.16 ± .41 n.s.
12-hour shift/early or late 12-hour shift	3.21 ± .53	3.06 ± .60	3.52 ± .85	2.95 ± .62
Day shift only	3.26 ± .48	3.25 ± .55	3.57 ± .76	2.99 ± .62
Part-time/temporary	3.14 ± .42	3.18 ± .60	3.65 ± .82	3.12 ± .53
Years employed at the hospital				
≤1 y	3.33 ± .55 n.s.	3.31 ± .68 **	3.71 ± .78 **	3.11 ± .67 n.s.
2-3 y	3.24 ± .49	3.06 ± .55	3.68 ± .77	2.94 ± .54
4-9 y	3.14 ± .47	3.05 ± .57	3.43 ± .81	3.00 ± .57
10-19 y	3.16 ± .46	2.97 ± .52	3.36 ± .95	3.01 ± .60
≥20 y	3.15 ± .60	2.95 ± .61	3.23 ± .65	2.89 ± .56
Years of nursing experience				
≤1 y	3.59 ± .48 **	3.56 ± .65 **	3.93 ± .58 **	3.41 ± .58 **
2-3 y	3.23 ± .53	3.05 ± .54	3.82 ± .78	3.02 ± .52
4-9 y	3.20 ± .47	3.12 ± .55	3.51 ± .79	2.88 ± .62
10-19 y	3.18 ± .54	3.11 ± .57	3.53 ± .86	3.04 ± .64
≥20 y	3.11 ± .44	2.92 ± .62	3.24 ± .81	2.90 ± .53

1) One-way ANOVA \* :p<. 05 \*\* :p<. 01

subscales were lowest in the 4-9 years group.

Years of nursing experience: There were significant differences in the "Relationship with superiors," "Collaborative relationship with nursing team," "Amount of work," "Non-nursing duties," "Salary," "Exercising your abilities," "Learning opportunities," "Work environment," "Work shifts," and "Social standing" subscale scores according to years of nursing experience. Specifically, scores for all of these 10 subscales were significantly higher among nurses in the  $\leq 1$  year group. Scores for the "Relationship with superiors," "Amount of work," "Non-nursing duties," "Learning opportunities," "Work environment," and "Work shifts" subscales were lowest in the  $\geq 20$  years group.

### 3. Differences in Intention to Remain in the Nursing Profession by Attribute (Table 3-1-3-3)

#### 3.1 Desire to continue working in current department

Sex: There were no differences in the distribution of responses according to sex.

Age: There were significant differences in the

distribution of responses in the five age groups. Specifically, the most frequent response in all age groups except the 20-24 years group was "Agree" followed by "Somewhat disagree." The most frequent response in the 20-24 years group was "Agree" followed by "Strongly agree."

Marital status: There were no differences in the distribution of responses according to marital status.

Highest level of education: There were no differences in the distribution of responses according to whether the nurses had attended vocational school/nursing college or had a university bachelor's or master's degree in nursing.

Qualifications: There were no differences in the distribution of responses according to nurse or assistant nurse qualifications.

Department: There were no differences in the distribution of responses according to department.

Type of employment: There were no differences in the distribution of responses according to type of employment.

Years employed at hospital: There were significant

Table3-1. Differences in intention to remain in the nursing profession by attribute

	Do you want to continue working in your current department? <sup>1)</sup>					N(%)
	N	Strongly disagree	Somewhat disagree	Agree	Strongly agree	
Sex						n.s.
Male	74	2 (2.70)	20 (27.03)	38 (51.35)	14 (18.92)	
Femel	324	14 (4.32)	107 (33.02)	158 (48.77)	45 (13.89)	
Age						*
21-24 y	49	3 (6.12)	12 (24.49)	20 (40.82)	14 (28.57)	
25-29 y	49	1 (2.04)	19 (38.78)	24 (48.98)	5 (10.20)	
30-39 y	137	5 (3.65)	46 (33.58)	76 (55.47)	10 (7.30)	
40-49 y	106	7 (6.60)	38 (35.85)	46 (43.40)	15 (14.15)	
$\geq 50$ y	57	0 (.00)	15 (26.32)	30 (52.63)	12 (21.05)	
Marital Status						n.s.
Unmarried	172	10 (5.81)	55 (31.98)	80 (46.51)	27 (15.70)	
Married without children	23	0 (.00)	8 (34.78)	10 (43.48)	5 (21.74)	
Married with children	195	5 (2.57)	60 (30.77)	104 (53.33)	26 (13.33)	
Highest level of education						n.s.
Vocational school or nursing college	377	15 (3.98)	124 (32.89)	186 (49.34)	52 (13.79)	
University bachelor's or master's degree in nursing	16	0 (.00)	3 (18.75)	10 (62.50)	3 (18.75)	
Qualification						n.s.
Nurse	364	14 (3.85)	115 (31.59)	182 (50.00)	53 (14.56)	
Assistant nurse	40	1 (2.50)	15 (37.50)	19 (47.50)	5 (12.50)	
Department						n.s.
Psychiatry department	220	9 (4.09)	71 (32.27)	109 (49.55)	31 (14.09)	
General departments	185	7 (3.78)	58 (31.35)	92 (49.73)	28 (15.14)	
Type of employment						n.s.
8-hour shift	32	1 (3.13)	13 (40.62)	16 (50.00)	2 (6.25)	
12-hour shift/early or late 12-hour shift	263	12 (4.56)	88 (33.46)	127 (48.29)	36 (13.69)	
Day shift only	69	3 (4.35)	18 (26.09)	34 (49.27)	14 (20.29)	
Part-time/temporary	39	0 (.00)	10 (25.64)	23 (58.97)	6 (15.39)	
Years employed at the hospital						*
$\leq 1$ y	80	0 (.00)	17 (21.25)	46 (57.50)	17 (21.25)	
2-3 y	121	6 (4.96)	37 (30.58)	59 (48.76)	19 (15.70)	
4-9 y	126	9 (7.14)	47 (37.30)	56 (44.45)	14 (11.11)	
10-19 y	46	0 (.00)	19 (41.30)	20 (43.48)	7 (15.22)	
$\geq 20$ y	31	1 (3.23)	10 (32.26)	18 (58.06)	2 (6.45)	
Years of nursing experience						n.s.
$\leq 1$ y	28	0 (.00)	5 (17.86)	18 (64.28)	5 (17.86)	
2-3 y	65	4 (6.15)	23 (35.39)	25 (38.46)	13 (20.00)	
4-9 y	104	3 (2.88)	40 (38.46)	49 (47.12)	12 (11.54)	
10-19 y	111	6 (5.41)	35 (31.53)	58 (52.25)	12 (10.81)	
$\geq 20$ y	93	3 (3.23)	25 (26.88)	48 (51.61)	17 (18.28)	

1)Chi-squared test \*:p<.05 \*\*:p<.01

differences in the distribution of responses in the five groups. Specifically, the most frequent response in all age groups except the ≤ 1 year group was “Agree” followed by “Somewhat disagree.”

Years of nursing experience: There were no differences in the distribution of responses according to years of nursing experience.

3.2 Desire to continue working at the hospital

Sex: There were no differences in the distribution of responses according to sex.

Age: There were significant differences in the distribution of responses in the five age groups. The most frequent response in all five age groups was “Agree” followed by “Somewhat disagree.”

Marital status: There were no differences in the distribution of responses according to marital status.

Highest level of education: There were no differences in the distribution of responses according to highest level of education.

Qualifications: There were no differences in the distribution of responses according to qualifications.

Department: There were no differences in the distribution of responses according to department.

Type of employment: There were no differences in the distribution of responses according to type of employment.

Years employed at hospital: There were significant differences in the distribution of responses in the five groups. Specifically, the most frequent response in all five age groups was “Agree” followed by “Somewhat disagree.”

Years of nursing experience: There were significant differences in the distribution of responses in the five groups. The most frequent response in all age groups except the 2–3 years group was “Agree” followed by “Somewhat disagree.” The most frequent response in the 2–3 years group was “Somewhat disagree” followed by “Agree.”

3.3 Desire to remain in the nursing profession

Sex: There were no differences in the distribution of

Table3-2. Differences in intention to remain in the nursing profession by attribute

	Do you want to continue working at this hospital?					N(%)
	N	Strongly disagree	Somewhat disagree	Agree	Strongly agree	
Sex						n.s.
Male	74	4 (5.40)	30 (40.54)	35 (47.30)	5 (6.76)	
Femal	324	23 (7.10)	116 (35.80)	163 (50.31)	22 (6.79)	
Age						**
21-24 y	49	6 (12.25)	18 (36.73)	21 (42.86)	4 (8.16)	
25-29 y	49	7 (14.29)	19 (38.77)	22 (44.90)	1 (2.04)	
30-39 y	137	7 (5.11)	52 (37.96)	73 (53.28)	5 (3.65)	
40-49 y	106	6 (5.66)	41 (38.68)	55 (51.89)	4 (3.77)	
≥50 y	57	1 (1.76)	16 (28.07)	28 (49.12)	12 (21.05)	
Marital Status						*
Unmarried	172	19 (11.05)	61 (35.46)	84 (48.84)	8 (4.65)	
Married without children	23	1 (4.35)	11 (47.83)	8 (34.78)	3 (13.04)	
Married with children	195	6 (3.08)	67 (34.36)	105 (53.84)	17 (8.72)	
Highest level of education						n.s.
Vocational school or nursing college	377	25 (6.63)	143 (37.93)	185 (49.07)	24 (6.37)	
University bachelor's or master's degree in nursing	16	1 (6.25)	3 (18.75)	12 (75.00)	0 (0.00)	
Qualification						n.s.
Nurse	364	25 (6.87)	131 (35.99)	185 (50.82)	23 (6.32)	
Assistant nurse	40	1 (2.50)	17 (42.50)	17 (42.50)	5 (12.50)	
Department						n.s.
Psychiatry department	220	15 (6.82)	85 (38.64)	107 (48.63)	13 (5.91)	
General departments	185	12 (6.49)	63 (34.05)	95 (51.35)	15 (8.11)	
Type of employment						n.s.
8-hour shift	32	2 (6.25)	13 (40.63)	17 (53.12)	0 (0.00)	
12-hour shift/early or late 12-hour shift	263	23 (8.75)	102 (38.78)	121 (46.01)	17 (6.46)	
Day shift only	69	1 (1.45)	24 (34.78)	36 (52.18)	8 (11.59)	
Part-time/temporary	39	1 (2.56)	9 (23.08)	26 (66.67)	3 (7.69)	
Years employed at the hospital						*
≤1 y	80	1 (1.25)	23 (28.75)	45 (56.25)	11 (13.75)	
2-3 y	121	11 (9.09)	45 (37.19)	62 (51.24)	3 (2.48)	
4-9 y	126	11 (8.73)	51 (40.47)	54 (42.86)	10 (7.94)	
10-19 y	46	1 (2.17)	19 (41.31)	23 (50.00)	3 (6.52)	
≥20 y	31	3 (9.68)	10 (32.26)	17 (54.84)	1 (3.22)	
Years of nursing experience						*
≤1 y	28	0 (0.00)	7 (25.00)	18 (64.29)	3 (10.71)	
2-3 y	65	7 (10.77)	29 (44.61)	27 (41.54)	2 (3.08)	
4-9 y	104	10 (9.62)	45 (43.27)	47 (45.19)	2 (1.92)	
10-19 y	111	6 (5.41)	37 (33.33)	60 (54.05)	8 (7.21)	
≥20 y	93	4 (4.30)	29 (31.18)	47 (50.54)	13 (13.98)	

1)chi-squared test \*:p<.05 \*\*:p<.01



responses according to sex.

Age: There were no differences in the distribution of responses according to age.

Marital status: There were significant differences in the distribution of responses in the three groups. The most frequent response in the unmarried and married with children groups was "Agree" followed by "Strongly agree." The most frequent response in the married without children was "Strongly agree" followed by "Agree."

Highest level of education: There were no differences in the distribution of responses according to whether the nurses had attended vocational school/nursing college or had a university bachelor's or master's degree in nursing.

Qualifications: There were no differences in the distribution of responses according to nurse or assistant nurse qualifications.

Department: There were no differences in the distribution of responses according to department.

Type of employment: There were no differences in the

distribution of responses according to type of employment.

Years employed at hospital: There were no differences in the distribution of responses according to years employed at the hospital.

Years of nursing experience: There were no differences in the distribution of responses according to years of nursing experience.

#### 4. Variables that Best Explain Intention to Remain in the Nursing Profession (Table 4)

First, we analyzed the effects of the following nine attribute variables indicating Table 1 based on the presumption that they influenced the intention of nurses to remain in the profession. We then added the 16 JSN-R subscales to our analysis as explanatory variables. This second round of multiple regression analysis yielded a significant increase in the explanation rate; therefore, we concluded that the 16 subscale variables also had an effect on intention to remain in the profession.

Our results indicated that "Collaborative relationship

Table3-3. Differences in intention to remain in the nursing profession by attribute

	Do you want to continue working as a nurse?						N(%)
	N	Strongly disagree	Somewhat disagree	Agree	Strongly agree		
Sex							n.s.
Male	74	1 (1.35)	13 (17.57)	41 (55.40)	19 (25.68)		
Femal	324	2 (.62)	51 (15.74)	173 (53.39)	98 (30.25)		
Age							n.s.
21-24 y	49	0 (.00)	8 (16.33)	26 (53.06)	15 (30.61)		
25-29 y	49	1 (2.04)	12 (24.49)	23 (46.94)	13 (26.53)		
30-39 y	137	0 (.00)	22 (16.06)	77 (56.20)	38 (27.74)		
40-49 y	106	2 (1.89)	16 (15.09)	56 (52.83)	32 (30.19)		
≥50 y	57	0 (.00)	6 (10.53)	31 (54.38)	20 (35.09)		
Marital Status							*
Unmarried	172	1 (.58)	35 (20.35)	98 (56.98)	38 (22.09)		
Married without children	23	0 (.00)	1 (4.35)	9 (39.13)	13 (56.52)		
Married with children	195	1 (.51)	26 (13.33)	105 (53.85)	63 (32.31)		
Highest level of education							n.s.
Vocational school or nursing college	377	2 (.53)	57 (15.12)	206 (54.64)	112 (29.71)		
University bachelor's or master's degree in nursing	16	0 (.00)	3 (18.75)	10 (62.50)	3 (18.75)		
Qualification							n.s.
Nurse	364	3 (.82)	57 (15.66)	195 (53.57)	109 (29.95)		
Assistant nurse	40	0 (.00)	7 (17.50)	23 (57.50)	10 (25.00)		
Department							n.s.
Psychiatry department	220	3 (1.36)	33 (15.00)	123 (55.91)	61 (27.73)		
General departments	185	0 (.00)	30 (16.22)	96 (51.89)	59 (31.89)		
Type of employment							n.s.
8-hour shift	32	0 (.00)	6 (18.75)	19 (59.38)	7 (21.87)		
12-hour shift/early or late 12-hour shift	263	2 (.76)	43 (16.35)	148 (56.27)	70 (26.62)		
Day shift only	69	0 (.00)	12 (17.39)	33 (47.83)	24 (34.78)		
Part-time/temporary	39	1 (2.57)	3 (7.69)	18 (46.15)	17 (43.59)		
Years employed at the hospital							n.s.
≤1 y	80	0 (.00)	10 (12.50)	38 (47.50)	32 (40.00)		
2-3 y	121	2 (1.65)	16 (13.22)	71 (58.68)	32 (26.45)		
4-9 y	126	1 (.79)	28 (22.22)	67 (53.18)	30 (23.81)		
10-19 y	46	0 (.00)	6 (13.04)	23 (50.00)	17 (36.96)		
≥20 y	31	0 (.00)	4 (12.90)	19 (61.29)	8 (25.81)		
Years of nursing experience							n.s.
≤1 y	28	0 (.00)	2 (7.14)	18 (64.29)	8 (28.57)		
2-3 y	65	1 (1.54)	12 (18.46)	39 (60.00)	13 (20.00)		
4-9 y	104	0 (.00)	18 (17.31)	53 (50.96)	33 (31.73)		
10-19 y	111	2 (1.80)	17 (15.32)	55 (49.55)	37 (33.33)		
≥20 y	93	0 (.00)	14 (15.05)	51 (54.84)	28 (30.11)		

1)chi-squared test \*: $p < .05$  \*\*: $p < .01$

with nursing team,” “Amount of work,” “Salary,” and “Work environment” were explanatory variables for the nurses’ desire to continue working in their current department. The explanation rate was 33%. “Relationship with superiors,” “Relationship with hospital staff other than physicians,” and “Salary” were significant explanatory variables for the nurses’ desire to continue working at the same hospital, with an explanation rate of 30%. Moreover, “Relationship with hospital staff other than physicians,” “Salary,” and “Exercising your abilities” were significant explanatory variables for the nurses’ desire to remain in their profession, with an explanation rate of 17%. None of the remaining nine subscales (i.e., “Relationship with colleagues,” “Relationship with physicians,” “Relationship with patients,” “Relationship with patient family members,” “Non-nursing duties,” “Autonomy,” “Learning opportunities,” “Work shifts,” and “Social standing”) were significant explanatory variables.

**Discussion**

The objective of the present study was to demonstrate the relationship between nurses’ job satisfaction and their intention to remain in the nursing profession.

Previous studies that have attempted to measure

the intention of nurses to remain in their profession have often used the following questions: “Have you ever thought about quitting your job?”<sup>25-27)</sup> and “Do you want to continue working at your current hospital?”<sup>14,28)</sup>. In the present study, we asked the following three questions: Do you want to continue working in your current department?; Do you want to continue working at this hospital?; and Do you want to continue working as a nurse? The responses to these questions showed that there were both common and distinctive factors involved in the job satisfaction related to each of these intentions.

Satisfaction in terms of “salary” was common to all three intentions. Sekiguchi et al.<sup>10)</sup> reported that nurses have low job satisfaction in terms of their salary, and that job satisfaction is very low among nurses who are not inclined to continue working under current conditions. These findings were consistent with our own study results. Moreover, the fact that satisfaction with salary was raised in response to all three of our questions about intention (i.e., intention to remain in the department, hospital, and profession) suggests that salary is significantly related to the intention of nurses to remain in their profession.

Table4. The relationship between job satisfaction measured with the JSN-R scale and intention to remain in the nursing profession

	Do you want to continue working in your current department?		Do you want to continue working at this hospital?		Do you want to continue working as a nurse?	
	standardized coefficient		standardized coefficient		standardized coefficient	
	$\beta$	t	$\beta$	t	$\beta$	t
Sex	-.05	-1.08	.00	-.02	.11	1.91
Age	.09	1.12	.21	2.71 **	.09	1.08
Marital Status	-.03	-.58	-.02	-.39	.14	2.08 *
Highest level of education	.05	1.11	.05	1.01	-.03	-.56
Qualification	-.08	-1.60	-.04	-.81	-.04	-.73
Department	.01	.13	.02	.37	-.08	-1.25
Type of employment	.05	.93	.05	.90	.04	.64
Years employed at the hospital	-.05	-.83	-.08	-1.35	-.03	-.45
Years of nursing experience	.07	.85	.02	.28	-.10	-1.11
Relationship with superiors	.09	1.22	.16	2.02 *	.02	.26
Relationship with colleagues	.02	.23	-.09	-1.26	-.05	-.57
Collaborative relationship with nursing team	.34	4.74 ***	.12	1.67	.15	1.85
Relationship with physicians	.08	1.17	-.01	-.18	-.06	-.81
Relationship with hospital staff other than physicians	-.01	-.20	.16	2.22 *	.17	2.18 *
Relationship with patients	.01	.14	-.03	-.35	-.06	-.64
Relationship with patient family members	-.10	-1.50	-.10	-1.46	.03	.37
Amount of work	.16	2.42 *	.11	1.61	.03	.35
Non-nursing duties	.00	.06	-.03	-.39	-.06	-.82
Salary	.13	2.25 *	.28	4.86 ***	-.14	-2.34 *
Exercising your abilities	.14	1.52	.18	1.89	.37	3.50 **
Autonomy	-.04	-.50	.02	.20	-.12	-1.32
Learning opportunities	-.07	-.94	-.01	-.18	.00	-.03
Work environment	-.13	-2.05 *	-.05	-.74	.01	.14
Work shifts	.03	.52	-.12	-1.82	.00	.01
Social standing	-.06	-1.12	-.04	-.62	-.04	-.56
R-squared value (coefficient of determination)	.33		.30		.17	
Adjusted R-square (Adjusted coefficient of	.27		.24		.11	

1) Stepwise multiple linear regression analysis \*:p<.05 \*\*:p<.01 \*\*\*:p<.001

Siegrist<sup>29)</sup> proposed the model of effort–reward imbalance at work, whereby an imbalance between the effort of a worker and the reward to which he or she is entitled or expects to receive (either financially, mentally, or career-wise) can create a stressful experience. This effort–reward imbalance is also believed to have an impact on worker job satisfaction. We can assume that nurses derive their intention to continue working in their department, hospital, and profession by receiving tangible financial remuneration for their routine efforts in the form of a monthly salary, salary increases, and bonuses.

In this study, satisfaction with salary was lowest among nurses who had been working at the hospital for 4–9 years. Harada et al.<sup>30)</sup> reported that salary increases and other improvements to the work environment are needed to prevent nurses with three or more years of clinical experience from quitting. Among mid-level nurses, who are required to assume an increased workload and to perform more complex tasks as they get older, it is particularly important to provide financial remuneration that is commensurate with their effort.

Our study findings showed that nurses' satisfaction in terms of their "Relationship with hospital staff other than physicians" was related to their intention to continue working at the hospital and to remain in the nursing profession. However, nurses' satisfaction in terms of their "Collaborative relationship with the nursing team" was related to their intention to continue working in their current department. Morishima<sup>31)</sup> found that a comfortable working environment tended to exist when workers had no or very little dissatisfaction with their social environment as manifested by their personal relationships with superiors and other work colleagues. In addition, Katagihara and Hasegawa<sup>32)</sup> argued that nurses who had a sense of camaraderie and cohesiveness with the group, and who felt that their opinions were respected by the organization were more likely to fit in well with the organization. These findings were also consistent with the results of our study. For nurses who are required to work as a team, a satisfactory relationship with other nurses with whom they have direct, day-to-day contact is especially important with regards to their intention to continue working in their current department. In terms of intention to continue working at the same hospital or intention to remain in the nursing profession, a satisfactory relationship with medical staff other than physicians is

more meaningful than having a satisfactory relationship with physicians.

In addition to "Salary" and "Collaborative relationship with the nursing team," satisfaction with the "Amount of work" and "Work environment" was also related to nurses' intention to continue working in their current department. Goto<sup>33)</sup> reported that nurses who feel that they do not have enough time to provide adequate care or who have residual feelings of inadequacy about the care they provide are unable to develop a professional attachment or motivation for nursing, and have low job satisfaction. This assertion is also supported in our study findings. We also found that nurses who had worked at the hospital for longer had a lower level of satisfaction about their workload. Yamada et al.<sup>26)</sup> stated that the desire to quit nursing in the years after graduating originally arises due to nurses' anxiety about their professional aptitude and, as they acquire more experience, this desire is attributed to dissatisfaction about the nature of their work, overtime work, and the inability to take holidays. As the length of their employment increases, nurses may experience greater dissatisfaction about the changing nature of their work due to more time spent teaching new nurses and less time spent caring for patients, and this dissatisfaction can contribute to a diminished intention to remain in the profession.

In the context of the present study, "Work environment" refers to factors such as hospital lighting, air conditioning, cleanliness, and availability of inventory. However, Endo<sup>34)</sup> defined the work environment according to paid holidays, salary, and routine workload. Sumiyoshi et al.<sup>14)</sup> argued that a good work environment is defined by good personal relationships, proximity to home, the ability to balance work with childrearing, and the ability to take holidays. However, there are no reports in the literature that take the physical aspects of work environments into account when investigating job satisfaction. We therefore consider that our study findings demonstrate that the intention to continue working in the same hospital department is in fact influenced by whether nurses work in a comfortable physical environment that is amenable to routine work.

In addition to "Salary" and "Relationship with hospital staff other than physicians," nurses' intention to continue working at the hospital was also influenced by their satisfaction in terms of "Relationship with superiors." Goto<sup>33)</sup> reported that nurses with a high level of job

satisfaction who continued working at the same hospital had a good personal relationship with the physicians. The author attributes this to an awareness among nurses that approval from one's superior is all important in the workplace, and that this awareness affects intrinsic job satisfaction in terms of motivation to work. The same conclusion can be drawn from our own findings. Furthermore, Goto<sup>33)</sup> states that the harder it becomes for experienced nurses who are expected to be able to perform tasks on their own to obtain approval from their superiors, the less likely they are to feel rewarded by the care they provide to patients. Our study as well also showed that nurses who had worked at the hospital for  $\geq 20$  years had the lowest level of job satisfaction in terms of their "Relationship with superiors." However, Goto<sup>33)</sup> reported that although only a low percentage of nurses went on to managerial positions even after a prolonged period of employment, there was still a high level of job satisfaction among mid-level nurses who were recognized by their superiors and given opportunities for promotion. Providing opportunities for promotion according to years of employment and providing opportunities to nurses who expect them are both factors that encourage nurses to remain in their profession.

In addition to "Salary" and "Relationship with hospital staff other than physicians," intention to continue working was also influenced by nurses' satisfaction in terms of "Exercising their abilities." Nakayama<sup>35)</sup> asserted that nurses seek job satisfaction not only from physical aspects such as salary and working conditions, but also from mental aspects such as whether their work environment allows them to develop their professional abilities. Nomoto<sup>36)</sup> reported that when nurses felt rewarded after performing their nursing, they were more likely to become motivated to work and to remain in their jobs. To feel that their job is worthwhile, nurses need to challenge themselves by testing their skills and abilities, and the ability to obtain satisfaction from these challenges will influence their intention to remain in the profession.

### **Recommendations for Clinical Nursing**

Based on these findings, we have developed the following recommendations for clinical nursing. Our first recommendation involves practical improvements to the work environment of each hospital ward (e.g., lighting, air conditioning, cleanliness, availability and management of

inventory and equipment) .

Next, we recommend that specific measures be taken to ensure that nurses receive a salary and bonus that are commensurate with their work. It is not feasible to continue increasing salaries and bonuses to a level that will satisfy all nurses. However, the rate of salary increases among nurses has stayed below that of other health care professionals<sup>37)</sup> . Suitable measures are therefore needed to address this issue of remuneration. Alternatively, psychological rewards could be used to improve nurse satisfaction in addition to physical remuneration. To achieve this, it is essential to build relationship based on trust, particularly with superiors, and to foster a work environment where each stakeholder receives appropriate psychological rewards. There also needs to be support for the career development of nurses with many years of service to provide them with opportunities for promotion. Furthermore, consideration needs to be given to nurses who expect to receive these opportunities.

Nurses are required to work as part of a team with other health care professions so it is crucial to develop an amenable working environment. It is therefore essential to develop a positive organizational culture throughout the entire hospital by establishing measures to facilitate an amenable working environment not only among nurses but also with other health care professionals.

### **Study Limitations and Issues**

Our study findings have shown the relationship between job satisfaction measured with the JSN-R scale and intention to remain in the nursing profession. However, we must concede the possibility that our results are biased, given that our data was obtained from a single hospital. As such, further studies are needed before making any generalizations about the results. In addition, two of the 16 subscales in the JSN-R scale had slightly low reliability coefficients. Both reliability and practicality should be considered when using the JSN-R scale for research purposes. Furthermore, the explanation rates of the explanatory variables for "intention to remain in the nursing profession" were not sufficiently high, which is an issue that remains to be addressed in future studies.

### **Conclusion**

Our objective in the present study was to demonstrate the relationship between job satisfaction and intention to

remain in the nursing profession among nurses working at a hospital in Japan. Our main findings were as follows:

A. The JSN-R subscales “Collaborative relationship with nursing team,” “Amount of work,” “Salary,” and “Work environment” were associated with nurses’ desire to continue working in their current department.

B. The JSN-R subscales “Relationship with superiors,” “Relationship with hospital staff other than physicians,” and “Salary” were associated with nurses’ desire to continue working at the same hospital.

C. The JSN-R subscales “Relationship with hospital staff

other than physicians,” and “Salary,” and “Exercising your abilities” were associated with nurses’ desire to remain in the nursing profession.

### **Acknowledgements**

This study is a part of an approved master thesis in Kanazawa University, Japan. We thank the director of nursing and the people who participated in the study for their understanding and cooperation in this study. This work includes the study supported by Grants-in-Aid for Scientific Research of Japan (grant no. 26293486) .

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## 日本の病院に勤務する看護師の職務満足と就業継続意思との関係

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### 要 旨

**目的：**病院勤務の看護師を対象に、職務満足と就業継続意思との関係を明らかにした。

**方法：**一病院に勤務の看護師に自己記入式質問紙調査を実施し、属性・就業継続意思・職務満足について尋ねた。職務満足は改訂版看護師職務満足尺度（JSN-R）を用いた。

**結果：**有効データ 406 票に重回帰分析を行い、JSN-R の 16 下位尺度から就業継続意思を説明する変数を抽出した。「今勤務している部署で、働き続けたい」には看護チームの協力関係、業務量、給与、労働環境が、「今勤務している病院で、働き続けたい」には上司との関係、医師以外の他職種との関係、給与が、「看護師として、働き続けたい」には医師以外の他職種との関係、給与、能力の発揮が各々有意となった。

**結論：**本研究において、看護師の職務満足と就業継続意思の間にはある関連が認められることが明らかとなった。