



Original Article

Factors affecting job satisfaction of advanced practice registered nurses in Korea

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ABSTRACT

Background & Aim: The activities of advanced practice registered nurses in Korea have expanded, but studies on their job satisfaction are lacking. This study aimed to determine the factors influencing job satisfaction among Korean advanced practice registered nurses.

Methods & Materials: A cross-sectional correlational study was conducted with 142 APRNs selected from three tertiary hospitals in Korea from December 2020 to January 2021. Job satisfaction and the factors influencing it were investigated using structured questionnaires; factors affecting job satisfaction were identified by multiple regression analysis. Data analysis was processed using the SPSS/WIN 25.0 program.

Results: Advanced practice registered nurses' sex ($\beta=.15, p=0.004$), satisfaction with workload ($\beta=.24, p<0.001$), professional visibility ($\beta=.21, p=0.004$) and APRN-physician relations in the work environment ($\beta=.38, p<0.001$), and clinical decision-making ability ($\beta=.17, p=0.004$) were identified as the factors influencing job satisfaction, which together explained 67% of the variance in job satisfaction.

Conclusion: To increase advanced practice registered nurses' job satisfaction, nurse managers must consider strategies for providing administrative and educational support for workload control, recognition of professional identity and autonomy, and improving the work environment to encourage efficient interaction with physicians and improved clinical decision-making ability.

Introduction

Rapid changes in the healthcare sector and the development of new technology for diagnosis and treatment have prompted patients' demands for professional medical services. Since 1997, medical institutions in Korea have implemented the physician assistant (PA) system to cope with the unstable supply of resident doctors (1). Recently, the number of hospitals employing this system has increased due to the expansion of ward beds at large medical institutions and the expansion of the medical institution evaluation system's range of application, the rise of patient safety evaluation standards, imbalance in the supply and demand of residents, and reduced number

of residents in provinces (2). Initially, PAs were mainly assigned as medical assistants; however, gradually, they began to participate in primary and emergency care, as well as the treatment of acute diseases (3). Nurses, paramedics, and other health-related medical personnel work as PAs in Korea. The number of advanced practice registered nurses (APRNs) working as PAs has rapidly increased from 235 nurses in 2005 to 1,009 in 2010 and 4,136 in 2019 (2).

In the United States, a PA is a person who has been recognized as a licensed medical practitioner subject to the supervision of a doctor, regardless of whether he or she has a



nurse's license (4). However, they must pass the national qualification test after completing the regular education course and must continue to complete the refresher education course. On the other hand, all PAs in Germany have licensed nurses, the bachelor's program as an APRN is being operated, and medical practice is performed under the supervision of a doctor. The Nurse Act was enacted in 2016 on the scope of treatment for nurse practitioners in Taiwan, and permitted medical practices under this law are being implemented (5).

Korean APRNs manage patients by working across various departments, such as emergency rooms, intensive care units, operating rooms, and wards (6). Most of them are either experienced nurses or new recruits as APRNs. Additionally, they start working immediately after receiving short-term training from senior nurses or residents without a degree or a systematic curriculum (7). Recently, the need to enact a law to regulate requirements for PAs and their scope of work has been actively debated inside and outside Korea's medical community (8). In this regard, the work environment, role, competency, and job satisfaction of APRNs, who make up the majority of PAs, must first be understood to enact a reasonable law for individuals and society. However, APRNs experience high job stress in a vulnerable work environment, which involves a lack of legal recognition of their job field, administrative support, and a systematic curriculum, as well as inequality in promotion opportunities (3,9), resulting in reduced job satisfaction and increased job turnover (10,11).

Nurses' work environment is a major factor influencing job satisfaction. Nurses who perceived their work environment as supportive showed high work achievement and job satisfaction. In contrast, nurses who perceived their work environment as poor complained of depression, exhaustion, and physical symptoms (12) and reported lower job satisfaction (13). Furthermore,

empowerment in the workplace positively affects job satisfaction by promoting psychological stability, job motivation, and enhanced responsibility in nurses with high emotional exhaustion (14). A previous study reported that nurses' perceived empowerment had a direct positive effect on job satisfaction and an indirect positive effect through the enhancement of professional governance (15). In a meta-analysis (16), nurses who perceived empowerment at work showed increased workability and performance.

APRNs frequently encounter situations where they need to perform patient care and evaluate the results by making judgments and decisions based on evidence and clinical experience (3). Clinical decision-making ability is a cognitive process in which nurses identify problems and select appropriate alternatives to perform patient care. In particular, APRN performs patient care by making judgments and decisions on their own based on knowledge rather than simply skill-based skills, and the decision-making ability to quickly respond to changing situations is required (17). Therefore, clinical decision-making ability is a critical job competency for APRNs. A lack of this competency may lead to worsened patient health and reduced job satisfaction due to decreased motivation for nursing work (18). However, thus far, few studies have reported the effects of APRN's work environment, empowerment, and clinical decision-making ability on job satisfaction. This study aimed to determine the factors influencing job satisfaction among Korean advanced practice registered nurses (APRNs).

Methods

Study design

This study employed a cross-sectional, correlational design to examine the associations between APRNs' work environment, empowerment, clinical decision-making ability, and job satisfaction.

Study participants

The study participants were APRNs recruited from three tertiary hospitals in South Korea. Convenience sampling was used, and nurses who understood the purpose of and agreed to participate in the study were participants in this study. The inclusion criteria were as follows: APRNs who had worked for at least one year in the same department and nurses who delivered care directly to patients. Nursing managers that worked as head nurses or had an equivalent position were excluded. The number of participants was calculated using a G* power 3.1.9 program. A multiple regression analysis revealed that the required number of samples was 139 at a significance level of 0.05, a power of 0.80, and an effect size of 0.15 (7). Questionnaires were distributed to 153 nurses in the selection criteria, and data were collected (98%) from 150 nurses. Among them, data from 142 nurses were analyzed after excluding insincere responses (questionnaire responses from 8 nurses were incomplete).

Measures

General characteristics

Data were collected regarding participants' age, sex, marital status, education level, affiliated medical department, work experience as a nurse, work experience as an APRN, work type (fixed work/shift work), labor type (full-time worker/temporary worker), and satisfaction with the workload.

Work environment

The Korean version of the Nurse Practitioner Primary Care Organizational Climate Questionnaire developed by Poghosyan et al. (19) was used to assess the work environment. The instrument comprises 29 questions across four subdomains: professional visibility, APRN-administration relations, APRN-physician relations, and independent practice and support. Each

question is answered on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The higher the score, the more positive the participants' perception of their work environment. The instrument's Cronbach's α was 0.92 (four subdomains: 0.79–0.87) in this study.

Empowerment

The Korean version of the Psychological Empowerment Scale developed by Spreitzer (20) was used to measure empowerment. The instrument contains 12 questions, including four dimensions: meaning, effectiveness, self-determination, and competence. Each question is answered on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The higher the score, the higher the participants' perception of empowerment. The instrument's Cronbach's α was 0.92 in this study.

Clinical decision-making ability

The Korean version of the Clinical Decision-Making in Nursing Scale developed by Jenkins (21) was used to measure clinical decision-making ability. The instrument contains 40 questions that include a review of values and goals, a review of alternatives and options, an evaluation and re-evaluation of conclusions, and a review of information and alignment with the latest information. Each question is answered on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The higher the score, the higher the participants' clinical decision-making ability. The instrument's Cronbach's α was 0.81 in this study.

Job satisfaction

The Korean version of the instrument developed by Slavitt et al. (22) was used to measure job satisfaction. The instrument contains 20 questions that assess variables such as remuneration, administration, professional position, autonomy, interaction,

work demands, and the relationship between PAs and doctors and related departmental staff. Each question is answered on a 5-point Likert scale (1= strongly disagree, 5 = strongly agree). The higher the score, the higher the job satisfaction. The instrument's Cronbach's α was 0.74 in this study.

Data collection

Data were collected from December 2020 to January 2021. Cooperation was obtained from the administrative department of the hospitals chosen for the survey. The study's purpose and method were explained to participants who met the selection criteria, and questionnaires were distributed to those who provided written consent for participation. Participants filled out the questionnaires themselves in the hospital's handover reporting room, and one of the researchers immediately collected the completed questionnaires. The time required to complete the questionnaire was approximately 20 minutes, and a gift card (equivalent to Korean won 10,000) was provided to the participants for their cooperation.

Data analysis

The collected data were analyzed using the SPSS/WIN 25.0 program. Participants' general characteristics and the levels of APRNs' work environment, empowerment, clinical decision-making ability, and job satisfaction were analyzed using descriptive statistics. The difference in job satisfaction according to general characteristics was analyzed by performing an independent *t*-test and one-way analysis of variance. Post-hoc analysis was performed by conducting a Scheffé test. Pearson's correlation coefficients analyzed correlations between the variables, and factors affecting job satisfaction were identified using multiple regression analysis.

Ethical considerations

This study was conducted after obtaining approval from the relevant institutional review board of the affiliated university (KNU-IRB-2020-92). All the participants were informed in writing of the research purpose, and they signed an informed consent form to participate in the study. The participants' anonymity was guaranteed, both during and after the study.

Results

General characteristics of participants

The participants' average age was 30.70 years, and 71 participants (50.0%) were aged 20–29 years. Further, among the total participants, 106 (74.6%) were female, 89 (62.7%) were single, and 115 (81.0%) had a bachelor's degree. As for the medical departments they were affiliated with, 82 participants (57.8%) were in surgery, and 24 (16.9%) were in internal medicine. Additionally, the total work experience as a nurse for 65 participants (45.8%) was less than 5 years, and 66 participants (46.5%) had 1–3 years of work experience as an APRN. Finally, 66 participants (46.5%) worked in shifts, 56 (39.4%) were temporary workers, and 68 (48.9%) were dissatisfied with their workload (Table 1).

Levels of work environment, empowerment, clinical decision-making ability, and job satisfaction

Participants' average scores for the perceived work environment, empowerment, clinical decision-making ability, and job satisfaction were 69.77, 39.29, 135.50, and 60.42, respectively (Table 2).

Table 1. General characteristics of participants (N=142)

Characteristics	Categories	n(%)	Job satisfaction		
			M±SD	t or F	p
Age (year), M±SD (range)	30.70±5.86 (23-49)				
	<29	71 (50.0)	59.79±7.43	0.45	.641
	30-39	56 (39.4)	61.00±8.01		
	≥40	15 (10.6)	61.20±9.82		
Sex	Male	36 (25.4)	63.00±6.30	2.31	.023
	Female	106 (74.6)	59.54±8.22		
Marital status	Married	53 (37.3)	61.79±7.27	1.61	.109
	Single	89 (62.7)	59.60±8.19		
Education level	Bachelor's degree	115 (81.0)	60.12±7.28	-0.74	.463
	Master's degree or above	27 (19.0)	61.27±10.23		
Affiliated medical department	Internal medicine	24 (16.9)	62.92±8.49	1.66	.178
	Surgery	82 (57.8)	60.22±6.81		
	Pediatrics, Obstetrics, and Gynecology	12 (8.4)	56.83±5.98		
	Others	24 (16.9)	60.38±10.83		
Work experience as a nurse (years)	<5	65 (45.8)	60.14±7.50	0.21	.812
	5-10	43 (30.3)	61.07±7.36		
	>10	34 (23.9)	60.12±9.38		
Work experience as an advanced practice registered nurses (years)	<1	34 (23.9)	60.65±8.01	0.88	.417
	1-3	66 (46.5)	59.55±7.89		
	>3	42 (29.6)	61.60±7.85		
Work type	Fixed work	76 (53.5)	61.75±7.41	2.19	.030
	Shift work	66 (46.5)	58.88±8.23		
Labor type	Full-time worker	86 (60.6)	61.48±7.96	2.00	.047
	Temporary worker	56 (39.4)	58.79±7.60		
Satisfaction with workload	Satisfied	74 (52.1)	63.74±7.19	5.81	<.001
	Unsatisfied	68 (48.9)	56.79±7.04		

Table 2. Work environment, empowerment, clinical decision-making ability, and job satisfaction in participants (N=142)

Variables	Number of items	M±SD	M±SD	Min-Max
Work environment	29		2.41±0.43	1.00-3.34
Professional visibility	4		2.29±0.60	1.00-3.75
APRN*-administration relations	9		2.04±0.53	1.00-3.44
APRN*-physician relations	7		2.75±0.55	1.00-4.00
Independent practice and support	9		2.56±0.48	1.00-4.00
Empowerment	12	12-60	3.27±0.70	1.00-5.00
Clinical decision-making ability	40	40-200	3.39±0.29	2.75-4.25
Job satisfaction	20	20-100	3.02±0.40	1.85-4.15

*Advanced Practice Registered Nurses

Differences in job satisfaction according to participants' general characteristics

Participants' job satisfaction differed according to sex ($t=2.31, p=0.023$), work type ($t=2.19, p=0.030$), labor type ($t=2.00, p=0.047$), and satisfaction with the workload ($t=5.81, p<0.001$) (Table 1).

Correlations between work environment, empowerment, clinical decision-making ability, and job satisfaction

Job satisfaction was positively correlated with all subdomains of APRNs' work environment ($r=0.43\text{--}0.69, p<0.001$), empowerment ($r=0.57, p<0.001$), and clinical decision-making ability ($r=0.26, p=0.002$) (Table 3).

Table 3. Correlation among research variables (N=142)

Variables	1	2	3	4	5	6	7
1. Professional visibility*							
2. APRN**-administration relations*	0.61 ($<.001$)						
3. APRN**-physician relations*	0.42 ($<.001$)	0.41 ($<.001$)					
4. Independent practice and support*	0.45 ($<.001$)	0.48 ($<.001$)	0.73 ($<.001$)				
5. Empowerment	0.49 ($<.001$)	0.37 ($<.001$)	0.55 ($<.001$)	0.56 ($<.001$)			
6. Clinical decision-making ability	-0.06 ($<.001$)	-0.24 ($<.001$)	0.23 ($<.001$)	0.13 ($<.001$)	0.20 (.020)		
7. Job Satisfaction	0.57 ($<.001$)	0.43 ($<.001$)	0.69 ($<.001$)	0.60 ($<.001$)	0.57 ($<.001$)	0.26 (.002)	

*Sub-domain of the work environment; **Advanced Practice Registered Nurses

Factors affecting job satisfaction

Multiple regression analysis was performed to identify the factors affecting job satisfaction after entering sex, work type, labor type, satisfaction with the workload, work environment subdomains, empowerment, and clinical decision-making ability as independent variables, and job satisfaction as the dependent variable, based on the results of the univariate analysis. Among these, the nominal scales were converted into dummy variables.

The basic linear regression assumptions were tested using multi collinearity detection, residual, and singular values. The Durbin–Watson statistic was 1.86, indicating no autocorrelation, the tolerance limit was 0.47–0.95, which was over 0.1, and the variance expansion index was 1.06–2.58, which did not exceed 10. Therefore, there were no concerns about the results of the analysis.

Based on the result after checking the normal P-P plot and the scatter plot for the residuals to verify the assumption of normality and equal variance of the error term through residual analysis, the independent and dependent variables had a normal distribution. Additionally, the equal variance of the individual residuals was also satisfied. None of the individuals for which Cook's distance value was calculated to examine the singular value exceeded 1.0. Therefore, the results of the regression analysis were valid.

The following factors were shown to affect APRNs' job satisfaction: sex ($\beta=.15, p=0.004$), satisfaction with the workload ($\beta=.24, p<0.001$), clinical decision-making ability ($\beta=.17, p=0.004$), and professional visibility ($\beta=.21, p=0.004$) and APRN-physician relations ($\beta=.38, p<0.001$) in the

work environment. The regression model was statistically significant ($R^2=.67$, Adjusted $R^2=.64$, $F=26.41$, $p<0.001$; Table 4).

Discussion

APRNs perform various nursing and treatment activities in collaboration with other nurses, doctors, and other medical professionals in various hospital departments. In a supportive work environment, specialized knowledge and decision-making ability according to the patient's situation can positively affect job satisfaction among APRNs. In this study, job satisfaction was higher in male APRNs than in their female counterparts. In a previous study, in Korea, the license acquisition rate for male nurses was approximately 10%, and 17.6% of male nurses worked as APRNs (6). In the female-dominated organizational culture of nursing departments, male nurses consider APRNs as an opportunity for self-development and an opportunity to increase their sense of job achievement, as it is a job that requires both specificity and professionalism. In a study targeting male APRNs ($n = 153$) from 20 general tertiary hospitals (7), job satisfaction was observed to be above average, and 76.9% of the APRNs were found to recommend the job to juniors; this can be an indirect basis for the current study's results.

According to the present findings, APRNs with high workload satisfaction also reported high job satisfaction. However, this study only surveyed APRNs' self-reported workload satisfaction and did not measure actual work hours objectively. In a study that investigated the operational status and roles of 704 APRNs in 141 hospitals in Korea (6), over 80% of APRNs worked overtime, and 20.6% of APRNs were nurses on duty. Thus, they experienced work overload. In addition to the heavy workload, unclear division of duties depending on the situation of hospitals and specialized departments, contact with other medical staff without prior notice (23), and

stressful and dangerous work environments can negatively affect job satisfaction (10). The decrease in job satisfaction among APRNs due to overwork reduces their intention to stay (24), and this may increase the remaining nurses' workload until the staff is filled, leading to a decrease in the quality of nursing provided to patients (25). Therefore, it is necessary to clearly define the area and scope of APRNs' duties, prepare institutional arrangements, such as a compensation system for their on-call and overtime allowance, and develop strategies to reduce work burden by adjusting the workload and calculating appropriate staffing requirements.

In this study, APRN-physician relations in the work environment positively affected job satisfaction and comprised the most influential factor among the independent input variables. This is in line with a previous study (8) that reported a positive correlation between APRN-physician relations and job satisfaction. Ho et al. (26) reported that the job satisfaction of nurse practitioners in Taiwan was positively correlated with doctors' trust and cooperation with doctors. Kim et al. (3) also found that nurse-doctor cooperation was the most important predictor of job satisfaction. In addition, APRNs showed satisfaction with their job when providing patient-centered treatment through teamwork. A previous study in Japan (27) found that less satisfactory relations with physicians were related to nursing burnout and job dissatisfaction and contributed to lowering the quality of nursing care, thus supporting our results. In this study, the average score for the APRN-physician relations as perceived by APRNs was 2.25, which was lower than the 3.31 points (28) among advanced practice nurses (1,244 participants) in the United States, measured using the same tool. APRNs were first introduced in Korea to cope with the imbalance between the supply and demand for residents. As APRNs still receive training for their jobs from individual doctors, such as

apprentice residents, and as patients sometimes regard them as doctors rather than nurses, APRNs recognize relationships with doctors as the most important factor influencing their job satisfaction. However, the present results do not imply that the relationship between APRNs and physicians is balanced and cooperative. Therefore, administrative efforts to establish the identity and autonomy of APRNs, as well as interprofessional cooperation and improvement of the work environment, are required to improve the relationship between physicians and APRNs.

Furthermore, as a subdomain of the work environment, professional visibility was an important factor associated with job satisfaction. This subdomain measures how visible the APRNs' role is within the organization (28). In previous studies, APRNs were demonstrated to have high job satisfaction when they had high self-esteem regarding their professionalism (5), and felt rewarded when they were recognized for their discriminatory abilities and role as clinical practitioners (3); these findings support this study's results.

Finally, clinical decision-making ability was also positively correlated with job satisfaction, which is in line with a previous study targeting nurses (29). The decision-making process in nursing significantly impacts patient outcomes and safety. In particular, clinical decision-making ability is a core competency for APRNs because they must perform accurate and rapid decision-making in diverse and complex professional clinical sites (30). As there is no professional degree or systematic curriculum for APRN training in Korea at present, APRNs acquire knowledge through practical experience and academic and medical conferences. Therefore, the results of this study can serve as a basis for providing education to improve clinical decision-making capabilities to increase APRNs' job satisfaction. Furthermore,

providing education and support for career development in their jobs and roles can enhance job identity (3) and increase job satisfaction (17), and ultimately contribute positively to patients' initial treatment, prevent complications, and improve therapeutic performance.

This study has the following limitations. First, as the participants were selected by convenience sampling from three general tertiary hospitals in Korea, the results should be interpreted and generalized with caution. The role and scope of APRNs' work may differ depending on the hospital's size and features. Therefore, a study on APRNs' job satisfaction considering hospitals' size and characteristics should be conducted in the future. Second, due to its cross-sectional design, this study is limited in explaining the causal relationships between job satisfaction and the factors associated with it. Third, the possibility of recall bias remains because the survey identified the level of job satisfaction and related factors perceived by the participants during the past two weeks. Depending on individual circumstances, the work environment and perceived empowerment level may have been underreported, or clinical decision-making ability may have been overreported. Fourth, the affiliated department's characteristics, as well as the patients' disease state and severity, were not controlled. Fifth, this participant's past experience in nursing practice (emergency nursing, critical care, etc.) could not be controlled. The final limitation was the absence of a control group. In the future, a comparative study is proposed with occupations that play the role of PAs in addition to general nurses, professional nurses, and nurses.

Despite these limitations, this study is meaningful in that it expands the theoretical foundations for job satisfaction of APRNs in Korea, where an intense debate over the pros and cons of enacting related laws is ongoing.

Conclusion

This study demonstrated that factors such as APRNs' sex (male), satisfaction with the workload, professional visibility and APRN-physician relations in the work environment, and clinical decision-making ability were positively correlated with job satisfaction. Based on these findings, administrative and educational support and provision of career development programs are required to increase APRNs' job satisfaction. This can be ensured by adjusting APRNs' workload, creating a work environment that recognizes the professional nature of the job and encourages efficient interaction with physicians, and helping improve clinical decision-making ability related to the job. These strategies will promote patient safety and ensure high-quality nursing performance. Additionally, the results can be used to design and implement policies to prevent burnout or potential turnover among APRNs. Future studies can elucidate the relationship between job satisfaction and job-related characteristics, such as APRNs' career length, working conditions, and patients' disease and severity. They can also focus on the development of interventions to enhance job competency and verify the interventions' effectiveness.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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