



# Effects of Parenting Stress and Work Environment on Female Nurses' Job Embeddedness: Does Job Engagement Play a Mediating Role?

On Yoo Shin<sup>1</sup>, \*Yeon-Ran Hong<sup>2</sup>, Ho-Jin Lee<sup>3</sup>

1. Department of Nursing, Cheongam College, Jeollanam-do, Republic of Korea
2. Department of Nursing, Sunchon National University, Jeollanam-do, Republic of Korea
3. Department of Nursing, Yeungnam University College, Daegu, Republic of Korea

\*Corresponding Author: Email: yrhong@scnu.ac.kr

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## Abstract

**Background:** We explored practical strategies to improve nursing staff retention in Korea, addressing the challenges posed by nursing shortages.

**Methods:** We examined the influence of parental stress, the nursing work environment, and job engagement (a sense of connection and commitment to work) on job embeddedness. Data were collected from 216 female nurses with children aged 1–12 years working at hospitals in Korea from August 23 to October 13, 2024. Statistical analyses included independent *t*-tests, one-way analysis of variance, Pearson's correlation coefficients, multiple regression analysis, and mediating effect.

**Results:** Job embeddedness showed a negative correlation with parenting stress ( $r=-0.360$ ,  $P<0.001$ ) and positive correlation with nursing work environment ( $r=0.653$ ,  $P<0.001$ ) and job engagement ( $r=0.540$ ,  $P<0.001$ ). Job engagement was also negatively correlated with parenting stress ( $r=-0.265$ ,  $P<0.001$ ) and positively correlated with the nursing work environment ( $r=0.472$ ,  $P<0.001$ ). Nurses with higher job satisfaction also reported higher job embeddedness ( $\beta=0.36$ ,  $P<0.001$ ). Improvements in the nursing work environment were associated with increase in both job embeddedness ( $\beta=0.36$ ,  $P<0.001$ ) and job engagement ( $\beta=0.18$ ,  $P=0.002$ ). Mediation analysis confirmed that job engagement partially mediated the relationships between parenting stress, the nursing work environment, and job embeddedness ( $F=75.76$ ,  $P<0.001$ ).

**Conclusion:** Parenting stress and the nursing work environment significantly influence job engagement, which, in turn, contributes to higher job embeddedness among nurses. To improve job embeddedness for female nurses, organizations should implement support programs to reduce parenting stress, foster family-friendly work environments, and establish institutional measures to promote job engagement.

**Keywords:** Job embeddedness; Job engagement; Nursing work environment; Parenting stress

## Introduction

The increasing number of new medical institutions in Korea has led to a greater demand for

nurses. However, despite various government support policies, nursing staff numbers remain



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insufficient (1). The 2023 Korea National Health and Medical Status Survey indicates that over 90% of nurses in Korea are female. Due to the demanding nature of their work, they often experience career gaps and high turnover rates, driven by irregular shift work and excessive expectations within medical institutions (1). Consequently, job embeddedness has gained traction as a potential strategy for reducing turnover and retaining nurses.

Job embeddedness describes the factors influencing an employee's decision to stay with an organization. It explains retention through the lens of an individual's network of connections within the organization. These connections create a sense of rootedness (2). In the nursing context, job embeddedness encompasses the psychological, professional, and personal factors that discourage nurses from leaving their jobs. It is a strong predictor of job outcomes, including nurse performance, attendance, and retention (3,4).

Parental stress is a negative psychological response to the responsibilities of parenthood, reflecting the perceived burden of raising children. In Korea, women spend more time directly raising children than men, often bearing the primary responsibility for child-rearing. This can create a greater psychological burden from parenting stress (5). Nurses experience higher levels of parenting stress than mothers in other occupations, and this stress has been shown to have a negative effect married nurses' intention to remain in their jobs (6). Studies have shown that job embeddedness increases as parenting stress decreases (7). If a nurse feels compelled to leave their hospital due to severe parenting stress, both the organization and the individual suffer from career interruption. Thus, managing parental stress may improve job embeddedness among married nurses. (6,7).

The nursing work environment significantly influences both job embeddedness and job engagement. This includes the physical setting where nurses provide services and the support they receive to perform effectively, such as autonomy and participation in decision-making (8). The nursing work environment encompasses

nurses' subjective perceptions of their workplace, including interpersonal interactions, the physical environments, and institutional, organizational, and policy aspects. It is a major factor affecting nurse turnover and job satisfaction (9). A positive work environment will improve nurse autonomy and job satisfaction, ultimately contributing to higher quality nursing and better nurse retention (8,9).

Job engagement, a factor influencing job embeddedness, reflects a positive and energetic state of mind, characterized by a willingness to invest effort and time into one's work (10). It embodies an active and passionate approach, encompassing important work abilities and professional identity. This includes elements such as dedication (love for work and a sense of honor), vitality (high energy and resilience at work), and immersion (commitment to work and reluctance to procrastinate) (10). Job engagement, particularly enthusiasm for one's work, is a crucial psychological factor that enables nurses to passionately immerse themselves in their work. It can mediate the relationship between organizational performance and job embeddedness. Nurses with high job engagement are more likely to contribute to patient safety and improve nursing quality, making their retention for efficient human resource management (11).

Based on the above, we consider nurses' parenting stress, work environment, and job engagement as key factors related to job embeddedness. We hypothesize that job engagement mediates the relationship between parenting stress, the nursing work environment, and job embeddedness.

To better understand these relationships and ultimately improve nurse retention in Korea, we analyzed the effects of parenting stress and the nursing work environment on job embeddedness among female nurses. We also examined the mediating role of job engagement, aiming to identify effective strategies for promoting nurse retention. Our findings provide valuable data for human resource management and policy development in Korean nursing organizations.

## Materials and Methods

### *Participants*

We surveyed 216 female nurses at small- and medium-sized hospitals in Jeollanam-do Province, Korea, from August 23 to October 13, 2024. Participants were required to have at least six months of experience, work at small- and medium-sized hospitals, and be raising children aged 1–12 years old. The required sample size was calculated using the G\*power 3.1.9.7 software (Heinrich-Heine-University, Düsseldorf, Germany). For multiple regression analysis, with a significance level of 0.05, a power of 0.90, and an effect size of 0.15, the minimum required sample size was 198 required (with 23 explanatory variables). To account for a potential 20% attrition rate, 250 questionnaires were distributed. Of the returned questionnaire, 34 were excluded due to incomplete responses, resulting in a final sample size of 216, which met the minimum requirement.

### *Instruments*

#### *Parental stress*

We measured parental stress using the Parenting Stress Index 4th Edition Short Form, developed by Abidin (12). The tool consists of 36 items, encompassing categories of parental distress (12 items), capturing the difficulties parents experience in fulfilling their parental role; parent-child dysfunctional interaction (12 items), capturing the interaction between parents and children; and difficult child (12 items), capturing difficult behavioral characteristics of children that make parenting challenging. Each item is rated on a 5-point Likert scale ranging from not at all [1] to very much [5], with a higher score indicating greater parental stress. Cronbach's  $\alpha$  of the index was 0.93 at the time of development (12) and 0.93 in our study as well.

#### *Nursing work environment*

We measured the nursing work environment using the Practice Environment Scale of the Nursing Work Index developed by Lake (13). This tool consists of 29 items: 9 items on nurse partic-

ipation in hospital operations; 9 on the foundation for quality nursing; 4 on the ability, leadership, and support of nurses; 4 on sufficient personnel and physical support; and 3 on the cooperative relationship between nurses and doctors. Each item was scored on a 4-point Likert scale ranging from not at all [1] to very much [4], with a higher score indicating a more positive perception of the nursing work environment. Cronbach's  $\alpha$  of the tool was 0.82 at the time of development (13) and 0.94 in this study.

#### *Job embeddedness*

Job embeddedness was measured using the instrument developed by Mitchell et al. (14). This 17-item scale consists of four subfactors: 7 items on organizational fit, 5 items on job benefits, 2 items on community fit, and 3 items on work-team intimacy. Items are rated on a 5-point Likert scale ranging from not at all [1] to very much [5], with a higher score indicating a higher level of job embeddedness. Cronbach's  $\alpha$  of the tool was 0.87 at the time of development (14) and 0.93 in this study.

#### *Job engagement*

We measured job engagement using the nine-item Utrecht work engagement scale developed by Schaufeli (15). The scale includes three subfactors: vitality (3 items), dedication (3 items), and absorption (3 items). Items are rated on a 7-point Likert scale ranging from never [1] to always feeling [7], with a higher score indicating a higher level of job engagement. Cronbach's  $\alpha$  of the tool was 0.84 at the time of development (15) and 0.89 in this study.

#### *Data analysis*

Data were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations). Differences in parental stress, nursing work environment, job embeddedness, and job engagement based on participants' general characteristics were examined using independent *t*-test and one-way analysis of variance with post hoc Scheffe's tests. Pearson's correlation coefficients were used to assess relationships between

variables. Multiple regression analysis was conducted to determine the effects on job embeddedness. The mediating role of job engagement was assessed using PROCESS Macro Model 4. All analyses were performed using SPSS version 27 (IBM Co., Armonk, NY, USA), and statistical significance was set at  $P=0.05$ .

### **Ethical considerations**

This study was approved by the Institutional Review Board of Sunchon National University, Re-

public of Korea (Number: 1040173-202407-HR-025-02). All research procedures complied with the principles of Declaration of Helsinki, and all participants provided written informed consent.

## **Results**

Table 1 presents the participants' general characteristics.

**Table 1:** The participants' general characteristics (n=216)

Characteristics	Categories	n	%	Mean:standard deviation
Age (in years)	Under 34	38	17.6	39.08±4.92
	35–39	70	32.4	
	40–44	80	37.0	
	45 or over	28	13.0	
Highest level of education	Associate degree	82	38.0	
	Bachelor's degree	110	50.9	
	Master's degree or higher	24	11.1	
Work experience	Less than 10 years	61	28.2	13.07±6.37
	10 to less than 15 years	59	27.3	
	15 to less than 20 years	57	26.4	
	20 years or more	39	18.1	
Department of employment	Ward	102	47.2	
	Outpatient	36	16.7	
	Intensive care unit/emergency room/operating room	27	12.5	
	Others	51	23.6	
Job position	Staff nurse	136	63.0	
	Charge nurse	30	13.8	
	Head nurse or higher	28	13.0	
	Dedicated nurse or others	22	10.2	
Work type	Day shift	118	54.6	
	Shift work or others	98	45.4	
Monthly household income (USD)	Under 2,000	26	12.0	
	2,000-<3,000	55	25.5	
	3,000-<4,000	33	15.3	
	4,000-<5,000	55	25.5	
	Over 5,000	47	21.7	
Job satisfaction	Dissatisfied	21	9.7	
	Neutral	106	49.1	
	Satisfied	89	41.2	
Number of children	One child	73	33.8	1.79±0.65
	Two children	115	53.2	
	Over three children	28	13.0	
The impact of child rearing on work life	Highly disruptive	64	29.6	
	Somewhat disruptive	129	59.8	
	Not disruptive	23	10.6	
Caregivers for children during working hours	Parents	57	26.4	
	Spouse	31	14.4	
	Educational institution	109	50.5	
	Others	19	8.7	
Total		216	100.0	

The differences in parenting stress, nursing work environment, job embeddedness, and job en-

gagement based on general characteristics are detailed in Table 2.

**Table 2:** Differences in parenting stress, nursing work environment, job embeddedness, and job engagement according to general characteristics

Characteristics	Categories	Parenting stress			Nursing work environment		
		Points	t/F	P (Scheffe)	Points	t/F	P (Scheffe)
Age (in years)	Under 34 <sup>a</sup>	2.14±0.49	3.21	0.024 b>a	2.59±0.39	4.13	0.007 d>b
	35–39 <sup>b</sup>	2.41±0.45			2.44±0.38		
	40–44 <sup>c</sup>	2.24±0.50			2.57±0.39		
	45 or over <sup>d</sup>	2.33±0.38			2.73±0.37		
Highest level of education	Associate degree	2.32±0.48	1.04	0.354	2.58±0.40	1.00	0.369
	Bachelor's degree	2.30±0.43			2.56±0.38		
	Master's degree or higher	2.16±0.62			2.45±0.38		
Work experience	Less than 10 years	2.27±0.41	0.37	0.773	2.59±0.39	1.18	0.319
	10 to less than 15 years	2.25±0.46			2.54±0.37		
	15 to less than 20 years	2.30±0.56			2.49±0.45		
	20 years or more	2.35±0.45			2.62±0.34		
Department of employment	Ward	2.30±0.44	0.07	0.976	2.55±0.41	2.33	0.075
	Outpatient	2.27±0.55			2.44±0.37		
	Intensive care unit/emergency room/operating room	2.26±0.52			2.70±0.35		
	Others	2.30±0.47			2.56±0.38		
Job position	Staff nurse	2.27±0.48	0.70	0.553	2.53±0.39	1.60	0.190
	Charge nurse	2.41±0.43			2.50±0.38		
	Head nurse or higher	2.26±0.37			2.69±0.35		
	Dedicated nurse or others	2.27±0.59			2.60±0.46		
Work type	Day shift	2.29±0.48	0.12	0.906	2.55±0.38	0.05	0.958
	Shift work or others	2.29±0.47			2.55±0.41		
Monthly household income (USD)	Under 2,000	2.28±0.44	0.48	0.752	2.58±0.34	0.75	0.557
	2,000-<3,000	2.33±0.56			2.53±0.38		
	3,000-<4,000	2.22±0.44			2.64±0.45		
	4,000-<5,000	2.26±0.47			2.56±0.39		
	Over 5,000	2.34±0.42			2.50±0.40		
Job satisfaction	Dissatisfied <sup>a</sup>	2.53±0.45	15.06	<0.001 a,b>c	2.15±0.46	32.8 2	<0.001 c>b>a
	Neutral <sup>b</sup>	2.40±0.46			2.46±0.35		
	Satisfied <sup>c</sup>	2.10±0.43			2.75±0.30		
Number of children	One child	2.29±0.45	0.01	0.988	2.58±0.40	0.42	0.656
	Two children	2.29±0.51			2.55±0.38		
	Over three children	2.30±0.40			2.50±0.43		
The impact of child rearing on work life	Highly disruptive <sup>a</sup>	2.46±0.45	8.82	<0.001 a>c	2.47±0.42	5.85	0.003 c>a,b
	Somewhat disruptive <sup>b</sup>	2.25±0.47			2.55±0.38		
	Not disruptive <sup>c</sup>	2.02±0.39			2.79±0.29		
Caregivers for children during working hours	Parents	2.32±0.48	0.48	0.699	2.56±0.46	0.05	0.985
	Spouse	2.28±0.47			2.56±0.39		
	Educational institution	2.30±0.49			2.54±0.36		
	Others	2.17±0.32			2.57±0.38		

Data are expressed as mean±standard deviation; tested using independent *t*-tests, one-way analyses of variance, and post-hoc tests (Scheffé test)

Table 2: (Continued)

Characteristics	Categories	Job embeddedness			Job engagement		
		Points	t/F	P (Scheffe)	Points	t/F	P (Scheffe)
Age (in years)	Under 34 <sup>a</sup>	3.12±0.55	3.66	0.013 d>b	2.81±0.91	2.39	0.070
	35–39 <sup>b</sup>	3.04±0.49			2.96±0.88		
	40–44 <sup>c</sup>	3.28±0.54			3.21±0.84		
	45 or over <sup>d</sup>	3.33±0.57			3.21±0.95		
Highest level of education	Associate degree	3.13±0.53	0.69	0.501	2.96±0.71	0.81	0.448
	Bachelor's degree	3.21±0.53			3.12±1.01		
	Master's degree or higher	3.24±0.62			3.13±0.82		
Work experience	Less than 10 years	3.11±0.50	1.19	0.315	3.01±0.90	0.73	0.538
	10 to less than 15 years	3.22±0.55			3.13±0.99		
	15 to less than 20 years	3.14±0.60			2.96±0.86		
	20 years or more	3.30±0.50			3.19±0.75		
Department of employment	Ward	3.14±0.50	0.85	0.470	2.99±0.85	1.64	0.181
	Outpatient	3.16±0.54			2.89±0.88		
	Intensive care unit/emergency room/operating room	3.32±0.54			3.28±0.89		
	Others	3.19±0.61			3.20±0.94		
Job position	Staff nurse <sup>a</sup>	3.14±0.52	3.87	0.010 d>b	2.95±0.82	5.90	0.001 c,d>b
	Charge nurse <sup>b</sup>	3.00±0.44			2.81±0.77		
	Head nurse or higher <sup>c</sup>	3.36±0.55			3.48±1.07		
	Dedicated nurse or others <sup>d</sup>	3.42±0.65			3.53±0.89		
Work type	Day shift	3.22±0.54	1.22	0.226	3.10±0.92	0.77	0.442
	Shift work or others	3.13±0.54			3.01±0.85		
Monthly household income (USD)	Under 2,000	3.11±0.46	0.24	0.918	2.93±0.80	0.57	0.688
	2,000-<3,000	3.15±0.49			2.97±0.76		
	3,000-<4,000	3.21±0.64			3.07±0.86		
	4,000-<5,000	3.19±0.56			3.11±1.05		
	Over 5,000	3.21±0.55			3.18±0.90		
Job satisfaction	Dissatisfied <sup>a</sup>	2.63±0.50	56.89	<0.001 c>b>a	2.61±1.03	25.8 3	<0.001 c>a,b
	Neutral <sup>b</sup>	2.99±0.36			2.76±0.66		
	Satisfied <sup>c</sup>	3.54±0.50			3.53±0.89		
Number of children	One child	3.19±0.58	0.29	0.752	2.90±0.80	2.17	0.116
	Two children	3.16±0.50			3.17±0.92		
	Over three children	3.24±0.61			3.04±0.91		
The impact of child rearing on work life	Highly disruptive <sup>a</sup>	3.04±0.60	9.22	<0.001 c>a,b	2.89±0.95	5.38	0.005 c>a,b
	Somewhat disruptive <sup>b</sup>	3.18±0.49			3.05±0.87		
	Not disruptive <sup>c</sup>	3.58±0.43			3.58±0.61		
Caregivers for children during working hours	Parents	3.19±0.62	0.77	0.514	3.10±0.90	0.61	0.610
	Spouse	3.08±0.44			3.04±0.72		
	Educational institution	3.18±0.52			3.01±0.92		
	Others	3.32±0.53			3.29±0.94		

Data are expressed as mean±standard deviation; tested using independent *t*-tests, one-way analyses of variance, and post-hoc tests (Scheffé test)

The relationships among parenting stress, nursing work environment, job embeddedness, and job engagement are presented in Table 3. Job embeddedness was negatively correlated with parental stress ( $r=-0.360$ ,  $P<0.001$ ) and positively correlated with nursing work environment ( $r=0.653$ ,

$P<0.001$ ) and job engagement ( $r=0.540$ ,  $P<0.001$ ). Job engagement was negatively correlated with parental stress ( $r=-0.265$ ,  $P<0.001$ ) and positively correlated with the nursing work environment ( $r=0.472$ ,  $P<0.001$ ).



**Table 3:** Relationships among parenting stress, nursing work environment, job embeddedness, and job engagement

Variables	Parental stress	Nursing work environment	Job embeddedness	Job engagement
Parental stress	1.000			
Nursing work environment	-0.276 (<0.001)	1.000		
Job embeddedness	-0.360 (<0.001)	0.653 (<0.001)	1.000	
Job engagement	-0.265 (<0.001)	0.472 (<0.001)	0.540 (<0.001)	1.000

Tested using Pearson's correlation coefficients

Fourteen factors were included in the multiple regression analysis. The Durbin-Watson statistic was used to test for autocorrelation. The resulting value of 1.916 (close to 2.000) indicated no autocorrelation. Multicollinearity among the independent variables was assessed using tolerance and the variance inflation factor (VIF). Tolerance values ranged from 0.230 to 0.866 (0.100 or higher), and the variance inflation factor ranged from 1.155 to 4.346 (10 or lower), indicating no multi-

collinearity between the independent variables. As presented in Table 4, the variables significantly affecting job embeddedness are job satisfaction ( $\beta=0.36$ ,  $P<0.001$ ), nursing work environment ( $\beta=0.36$ ,  $P<0.001$ ), and job engagement ( $\beta=0.18$ ,  $P=0.002$ ). Thus, job embeddedness increased as job satisfaction increased compared with job dissatisfaction, as the nursing work environment improved, and job engagement increased. The explanatory power ( $R^2$ ) was 60.0%.

**Table 4:** Factors influencing job embeddedness

Variables	B	Standard error	$\beta$	t	P	Tolerance	VIF
(Constant)	1.39	0.27		5.20	<0.001		
Job satisfaction							
Dissatisfied	Ref						
Neutral	0.15	0.09	0.14	1.66	0.098	0.276	3.624
Satisfied	0.39	0.10	0.36	3.84	<0.001	0.230	4.346
Parental stress	-0.09	0.06	-0.08	-1.54	0.126	0.737	1.356
Nursing work environment	0.50	0.08	0.36	6.08	<0.001	0.567	1.763
Job engagement	0.11	0.03	0.18	3.13	0.002	0.627	1.596

Tested using multiple regression analysis adjusted for age, highest level of education, work experience, department of employment, job position, work type, monthly household income, number of children, the impact of child rearing on work life, and caregivers for children during working hours.

Durbin-Watson=1.72,  $F=24.94$ ,  $P<0.001$ ,  $R^2=0.294$ , Adjusted  $R^2=0.280$ ; VIF, variance inflation factor

Table 5 presents the results of the mediation examining the role of job engagement in the relationship between parental stress, the nursing work environment, and job embeddedness. The analyses followed a three-step approach. First, we assessed the relationships between the independent variables (parental stress and nursing work environment) and the mediator (job engagement)

Second, we examined the relationships between the independent variables and the dependent variable (job embeddedness). Finally, we assessed the relationship between the mediator and the dependent variable, controlling for the independent variables.

**Table 5:** Mediating effect of job engagement in the relationships among parenting stress, nursing work environment, and job embeddedness

Step	Route	B	Standard error	$\beta$	t	P	F(p)	R <sup>2</sup> (adj-R <sup>2</sup> )
1	Parenting stress → job engagement	-0.27	0.12	-0.15	-2.35	0.020	24.17 (<0.001)	0.577 (0.553)
	Nursing work environment → job engagement	0.98	0.14	0.43	6.96	<0.001		
2	Parenting stress → job embeddedness	-0.22	0.06	-0.19	-3.72	<0.001	91.26 (<0.001)	0.461 (0.456)
	Nursing work environment → job embeddedness	0.82	0.07	0.60	11.45	<0.001		
3	Parenting stress → job embeddedness	-0.18	0.06	-0.16	-3.09	0.002	75.76 (<0.001)	0.517 (0.511)
	Nursing work environment → job embeddedness	0.66	0.08	0.48	8.76	<0.001		
	Job engagement → job embeddedness	0.17	0.03	0.27	4.96	<0.001		

In the first step, we found that both parental stress ( $\beta=-0.15$ ,  $P=0.020$ ) and the nursing work environment ( $\beta=0.43$ ,  $P<0.001$ ) significantly predicted job engagement ( $F=24.17$ ,  $P<0.001$ ,  $R^2=0.577$ , Adj- $R^2=0.553$ ). In the second step, parental stress ( $\beta=-0.19$ ,  $P<0.001$ ) and the nursing work environment ( $\beta=0.60$ ,  $P<0.001$ ) also significantly predicted job embeddedness ( $F=91.26$ ,  $P<0.001$ ,  $R^2=0.461$ , Adj- $R^2=0.456$ ). In the third step, with all variables included in the model, job engagement ( $\beta=0.27$ ,  $P<0.001$ ) significantly predicted job embeddedness ( $F=75.76$ ,  $P<0.001$ ,  $R^2=0.517$ , Adj- $R^2=0.511$ ). Parenting stress ( $\beta=-0.16$ ,  $P=0.002$ ) and the nursing work environment ( $\beta=0.48$ ,  $P<0.001$ ) remained significant predictors mediated the relationships between the independent variables and job embeddedness.

## Discussion

This study aimed to identify practical strategies for retaining nursing staff in Korea, given the ongoing nursing shortages. We analyzed the effects of parenting stress and the nursing work

environment on female nurses' job embeddedness while also examining the mediating role of job engagement. The results indicated a negative relationship between parenting stress and job embeddedness. These findings align with the previous research (2-4,7,8) and reaffirms that reducing parenting stress and improving the work environment are key steps in improving nurses' willingness to remain with an organization. Job engagement, showed a partial mediating effect in the relationship between parenting stress, the nursing work environment, and job embeddedness, suggesting that job engagement was a key factor affecting nurses' organizational commitment and retention.

The significant positive correlation between job embeddedness and the perceived nursing work environment suggests that a more positive work environment is associated with higher job embeddedness, consistent with the results of previous studies (16-18). Our analysis identified job satisfaction, the nursing work environment, and job engagement. Consistent with our findings, studies of hospital nurses (19) and millennial nurses (8), have identified the nursing work envi-



ronment as a strong predictor of job embeddedness. When nurses perceive their organization as well-structured and the work environment as positive, their desire to remain in the organization appears to increase (14).

We also found that job engagement partially mediate the relationships between parenting stress, the nursing work environment, and job embeddedness. While direct comparison is difficult due to the lack of prior studies examining job engagement as a mediator between these specific variables among female nurses, the findings of Kwag and Yang (19). In their study, high job engagement was a factor that improved job embeddedness.

Our results confirm that job engagement is an important factor in job embeddedness. Job engagement also has a positive effect on nursing quality and the achievement of organizational goals. A person's job engagement affects coworkers as well, thereby improving work performance, which requires cooperation in a group. Thus, compared with organizations that do not have this, organizations with high job engagement can achieve a certain level of organizational competitiveness by significantly improving performance. Further research is needed to solidify the mediating role of job engagement in the relationships between parenting stress, the nursing work environment, and on nurses' job embeddedness.

Our results suggest that to improve nurses' job embeddedness, support programs must be introduced at the organizational level aimed at reducing parenting stress; family-friendly work environments should be created; and institutional plans should be established to promote job engagement. Welfare systems and institutional improvements should be expanded that address organizational inconveniences to increase job embeddedness among nurses raising children. Developing and applying a system, along with education, within the hospital to improve the nursing work environment should also be considered since the environment has a significant impact on job embeddedness.

This study has some limitations. First, the sample was drawn from small- and medium-sized hospitals in Suncheon City, Jeollanam-do Province, Korea, limiting the generalizability of the results. Second, our study only considered two factors affecting job embeddedness. Future studies should test for additional factors and assess customized intervention methods at different nursing career stages.

## Conclusion

Job engagement is an important concept in the human resource management of nurses, as it plays a mediating role in the relationship between parenting stress, nursing work environment, and job embeddedness among female nurses. Ultimately, to improve the job embeddedness of female nurses, we need to devise a plan to lower parenting stress, improve the nursing work environment, and increase job engagement.

## Journalism Ethics considerations

Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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## Conflict of Interest

The author declares no conflicts of interest.

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