

Effect of COVID-19 Frontline Nurses' Profession Perception on Their Intention to Stay: The Mediating Role of Job Satisfaction

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Abstract

Introduction: Understanding the factors affecting the intention of frontline nurses during the coronavirus disease (COVID-19) pandemic to stay in the nursing profession is essential for developing strategies to overcome the challenges associated with the pandemic.

Objectives: This study aimed to examine the mediating effect of nurses' job satisfaction on the relationship between their sense of calling, job-esteem, and the intention to stay in their profession.

Methods: The study used a previously collected dataset, sourced from a dedicated COVID-19 hospital in Seoul City, South Korea. Original data were collected from June to July 2021. The study sample consisted of 134 nurses who provided direct care to patients. The intention to stay was measured with the following question: "Are you willing to work during this COVID-19 pandemic?". The Job Satisfaction Scale from the Korean Labor and Income Panel Study, Korean version of a Multidimensional Calling Measure, and Job-Esteem Scale for Hospital Nurses were utilized. Associations between the study variables were estimated using bivariate correlation analyses and bootstrapping mediation analyses.

Results: In the bivariate correlation analysis, nurses' sense of calling ($r = .36, p < .001$), job-esteem ($r = .32, p < .001$), and job satisfaction ($r = .39, p < .001$) were significantly associated with the intention to stay. In the mediation analysis, job satisfaction partially mediated the relationship between the sense of calling and the intention to stay (total effect; $B = 0.410, p < .001$) and fully mediated the relationship between job-esteem and the intention to stay (total effect; $B = 0.549, p < .001$).

Conclusion: Enhancing nurses' job satisfaction is crucial for fostering the retention of the nursing workforce amid the pandemic. Consequently, it is imperative to closely examine the job satisfaction and work environment of frontline nurses to identify areas in need of improvement. Addressing the factors that impede nurses' job satisfaction is essential to unlock the positive effects of a sense of calling and job-esteem.

Keywords

COVID-19, nurses, intention to stay, sense of calling, job-esteem, job satisfaction

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Background

The novel coronavirus disease (COVID-19) pandemic broke out in 2019 and has been affecting the entire world. During the crisis, healthcare workers, specifically nurses, were deemed "heroes" by the media (Einboden, 2020; Mohammed et al., 2021; Glasdam et al., 2022). However, nurses were reluctant to be seen merely as "heroes" by the public; they viewed their sense of duty and professional responsibility as motivation to take care of infected patients, and some said it was a "calling" (White, 2021).

In contrast, the ongoing pandemic has burdened nurses, owing to the increasing number of patients with COVID-19

who need care. Nurses on the frontline have continued to work, despite struggling with the fear of infection, deteriorating working conditions, stigmatization, and burnout (Manzano & Ayala, 2021; Senek et al., 2020). Moreover, the steady increase in the number of COVID-19 infection

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cases has impacted nursing turnover rates (Raso et al., 2021).

Hence, it is essential to explore strategies to promote nurses' intention to stay in the face of epidemics (Varasteh et al., 2022). Intention to stay refers to the workers' inclination to remain in their current position or profession (Nancarrow et al., 2014). The concept was often regarded as simply being an opposite term to the intention to leave; however, research has shown that the two concepts are mutually different, despite having certain similarities and are thus affected by diverse factors (Al Zamel et al., 2020; Nancarrow et al., 2014).

Previous studies have indicated a robust positive correlation between job satisfaction and intention to stay (Irabor & Okolie, 2019). However, surveys of frontline nurses during the COVID-19 pandemic have revealed significantly lower levels of job satisfaction compared to previous reports (Said & El-Shafei, 2021; Zhang et al., 2020). Consequently, to foster the retention of frontline nurses, it becomes imperative to comprehend the precise influence of job satisfaction on the intention to stay within the context of the pandemic.

Review of Literature

Unlike the intention to leave, the intention to stay predicts workers' positive behavior to develop active workforce strategies. Therefore, it is important to identify the factors that can activate nurses' intention to stay. So far, organizational characteristics, work environment, and professional values or perceptions have been known to be associated with this intention (Al Yahyaei et al., 2022; Keith et al., 2021). However, additional research is needed to examine the relationships among these factors and to focus particularly on nurses' personal factors, such as their job satisfaction (Al Yahyaei et al., 2022).

Job satisfaction is considered to be one of the main factors influencing employee turnover (Irabor & Okolie, 2019). Overall job satisfaction is comprised of many different factors and is not only directly related to turnover but also has an indirect effect by being linked to other factors (Hu et al., 2022; Irabor & Okolie, 2019). The factors that influence job satisfaction and the impact of job satisfaction on employee retention can be speculated through Herzberg's motivation-hygiene theory (Herzberg, 2005). Herzberg named the factors that lead to job dissatisfaction as hygiene factors and the factors that lead to job satisfaction as motivation factors. He emphasized that only through motivational factors do employees feel satisfied with their job and remain voluntarily. According to Herzberg, the motivators include responsibility, achievement, growth potential, the work itself, and recognition. This observation was also made during the pandemic. Job satisfaction has been reported to play a mediating role between several COVID-19-related factors, such as increased workload, out-of-role behavior,

and nurses' intention to care for infected patients (Sharif Nia et al., 2021). However, the mediating effect of job satisfaction on the relationship between the potential motivational factors, sense of calling or job-esteem, and turnover intentions among COVID-19-dedicated nurses has not yet been tested yet.

A sense of calling could be one personal motivation factor related to nurses' intention to stay during the pandemic. Occupational calling is an attitude of achieving internal growth through work and simultaneously contributing to public good (Dik & Duffy, 2009). Disaster situations involving multiple victims could heighten the sense of professional calling for some individuals (Kane-Urrabazo, 2007; Zhou et al., 2021). According to a survey conducted in the intensive care unit of a COVID-19-dedicated hospital, it was revealed that nurses' sense of calling increased as the number of daily code blues (occurrence of situations requiring cardiopulmonary resuscitation) increased (Zhu et al., 2021). As such, strong calling sense enables individuals to handle stressful working conditions (Dobrow et al., 2019). In addition, workers with a high sense of calling generally experience a high level of satisfaction in their occupations (Dobrow et al., 2019).

Positive job-esteem may have also made more nurses feel akin to "heroes" during the pandemic. In the early stage of COVID-19 outbreak, the professional expertise of nursing staff was widely exposed to the public, as professionals who took care of infected patients face to face and thus portrayed by the media as major figures or "heroes" (El-Masri & Roux, 2020). This might have heightened their job-esteem. Job-esteem, first defined by Miller, refers to the level of respect and authority that an individual believes is associated with their job and the degree of evaluation or expectation of value provided (Miller & Madsen, 2003). Low job-esteem is thought to negatively affect one's working attitude, thereby leading to staff turnover (Miller & Madsen, 2003). However, there has been limited research on the influence of nurses' job-esteem during the COVID-19 pandemic on their job satisfaction and intention to stay.

Therefore, the objective of this study was (i) to examine the level of intention to stay, sense of calling, job-esteem, and job satisfaction of COVID-19 frontline nurses; (ii) to describe the relationship between the aforementioned major variables; and (iii) to identify if job satisfaction mediates the relationship among other variables and nurses' intention to stay. Based on the findings, this study aims to provide recommendations for the development of future strategies that may assist in retaining nurses in the workforce, particularly those responding to pandemic disasters. The hypotheses of this study are as follows:

Hypothesis 1. Job satisfaction will mediate the relationship between a sense of calling and intention to stay among COVID-19 frontline nurses.

Hypothesis 2. Job satisfaction will mediate the relationship between job-esteem and intention to stay among COVID-19 frontline nurses.

Methods

Study Design and Participants

This descriptive correlational study with a cross-sectional design was conducted to investigate the mediating effects of job satisfaction between the sense of calling and the intention to stay, as well as between job-esteem and the intention to stay of nurses working at the COVID-19 frontlines. The study used a previously collected dataset, sourced from a dedicated COVID-19 hospital in Seoul City, South Korea (Im, 2022). The hospital from which the data were collected has been caring for COVID-19 patients for a long time, having been converted to a dedicated center in February 2020, a relatively early point since COVID-19 broke out in South Korea. Therefore, we believed that the data would adequately represent the target population of this study. Original data were collected from June to July 2021. The survey was limited to nurses who had direct contact with confirmed and suspected COVID-19 patients and excluded non-frontline healthcare workers such as administrative staff. Of the 180 eligible nurses, 134 completed the survey, which was considered an adequate sample size for the mediation bootstrap analysis given the medium-sized effect condition for all pathways (Fritz & MacKinnon, 2007).

Measures

For data collection, all research instruments were used after obtaining permission from the original authors and translators.

Intention to Stay. Participants' intention to stay at their current job was evaluated by the following question: "Are you willing to work during this COVID-19 pandemic?" (Maraqa et al., 2020). A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure nurses' intention to stay.

Job Satisfaction. The 9-item Job Satisfaction Scale from the Korean Labor and Income Panel Study was applied to assess nurses' level of job satisfaction (KLIPS, 2020). This scale evaluates a total of nine aspects: salary or income, job stability, job tasks, work environment, working hours, an opportunity for self-development, communication and relationships, fairness of performance appraisal, and employee benefits. The answer choices range from (1) "very dissatisfied" to (5) "very satisfied." The instrument, developed by the Korea Labor Institute, is based on tools such as the Minnesota Satisfaction Questionnaire and the Job Description Index (Lee, 2006). Content validity was verified by experts during its development (Lee, 2006). This tool has been used in

several Korean studies to analyze workers' job satisfaction. In the current study, the tool's Cronbach's α was 0.90.

Sense of Calling. Sense of calling was assessed using a Multidimensional Calling Measure (Hagmaier & Abele, 2012) that has been translated into Korean (MCM-K) (Ha et al., 2014). This scale includes nine items with three subscales: "identification and person-environment fit"; "sense, meaning, and value-driven behavior"; and "transcendent guiding force." Each item is scored on a 6-point Likert scale, and a higher score indicates a strong sense of occupational calling. Regarding the instrument's reliability, Cronbach's α was 0.85 in the original study and 0.83 in the study in which the Korean translation was developed. In the current study, Cronbach's α was 0.89. Concurrent validity and convergent validity were demonstrated by the developers through comparisons with the Brief Calling Scale-Presence and Job Satisfaction.

Job-Esteem. The Job-Esteem Scale for Hospital Nurses was used to measure the job-esteem of the participants (Choi & Jung, 2020). The scale consists of 28 items with six subscales: "professional self-awareness," "professional competence," "role and expertise of care," "social trust and respect," "respect and recognition of the organization," and "professional authority and future value." Each item is scored on a 5-point Likert scale; a higher score indicates a high level of job-esteem. Regarding the reliability of the instrument, Cronbach's α was 0.94 during its development, and in this study, Cronbach's α was 0.94. The validity of the instrument was verified by the original developers through content validity.

Institutional Review Board Approval, Informed Consent, and Human Subjects' Rights

The Institutional Review Board approved the study protocol including the use of existing research data. Informed consent for secondary analysis was waived. The data for analysis did not contain any identifying information.

Statistical Analyses

Data were analyzed using the R computer software. Descriptive analyses were performed for describing the participants' characteristics and major variables. Bivariate correlations were computed through Pearson correlation analyses. Data normality was confirmed with a residual plot and Shapiro-Wilk test. The mediation effects were analyzed using the PROCESS macro for R (Hayes, 2018), selecting "Model 4" to test study hypotheses 1 and 2. The bias-corrected 95% confidence interval (CI) was calculated with 5,000 bootstrapping resamples, and statistical significance was defined as a two-tailed p -value of $<.05$. An effect was considered significant if its 95% CI from bootstrapping did not include zero.

Table 1. Participants' Characteristics (N = 134).

Variables	Categories	N (%)	M ± SD
Sex	Male	11 (8.2)	30.57 ± 6.32
	Female	123 (91.8)	
Age (years)			
Education	Diploma	19 (14.2)	
	Bachelor's degree	112 (83.6)	
	Above master's degree	3 (2.2)	
Marital status	Single	99 (73.9)	
	Married	35 (26.1)	
Familial responsibilities (financial)	Yes	89 (66.4)	
	No	45 (33.6)	
Belonging to a religion	Yes	43 (32.1)	
	No	91 (67.9)	
Work department	Ward	121 (90.3)	
	Screening center	13 (9.7)	
Clinical experience (years)			7.49 ± 5.14
COVID-19 work experience (months) ^a			13.83 ± 4.00
COVID-19 patients' contact time (hours) ^b			2.27 ± 1.32
Changed department due to COVID-19	Yes	119 (88.8)	
	No	15 (11.2)	
Quarantined or confirmed COVID-19 due to workplace exposure	Yes	40 (29.9)	
	No	94 (70.1)	
Perceived working environmental safety	-		3.18 ± 0.96
Satisfaction level of hazard pay			1.91 ± 0.91
Satisfaction level of infection control training			3.28 ± 0.94

^aN = 133.^bN = 130 (invalid answers were excluded).

Results

Participants' Characteristics and Major Variables

The participants' socio-demographic and work-related characteristics are shown in Table 1. Among 134 nurses, the majority were women (91.8%), and the mean age was 30.57 years (standard deviation (SD) = 6.32). Most participants had a bachelor's degree (83.6%) and were unmarried (73.9%). Approximately two thirds of them responded that they were financially responsible for their family (66.4%) and did not belong to any religion (67.9%).

Among the respondents, 90.3% were ward nurses caring for patients with COVID-19, while the remaining were COVID-19 screening center nurses. The mean number of years of clinical experience was 7.49 years (SD = 5.14), of which 13.83 months on average (SD = 4.00) were dedicated to COVID-19 work. Participants were directly in contact with COVID-19 patients for 2.27 h (SD = 1.32) on each working day. To care for the increasing number of COVID-19 patients, most nurses had changed their work department (88.8%) after the burst of pandemic. Nurses were either quarantined or were confirmed with COVID-19 due to workplace exposure (29.9%). The results of the 5-point Likert scale indicated that the perceived level of working environment safety and the satisfaction level with

infection control training were moderate (mean = 3.18, 3.28, SD = 0.96, 0.94, respectively), whereas the level of satisfaction with hazard pay was noticeably low (mean = 1.91, SD = 0.91).

Participants' intention to stay, sense of calling, job-esteem, and job satisfaction are summarized in Table 2. The intention to stay was, on average, 3.66 points (SD = 0.91) out of 5 points in total, the sense of calling was 3.96 points (SD = 0.77) out of 6, and job-esteem was 3.71 points (SD = 0.52) out of 5. Job satisfaction was 3.01 points (SD = 0.65) out of 5 points.

Bivariate Correlations Among the Study Variables

Table 3 presents the correlation coefficients of the study variables. The results indicated that participants' age and clinical experience were strongly associated ($r = .88$, $p < .001$). Moreover, the major variables had significantly positive correlations with each other. The intention to stay was correlated with the sense of calling ($r = .36$, $p < .001$), job-esteem ($r = .32$, $p < .001$), and job satisfaction ($r = .39$, $p < .001$). Similarly, the sense of calling was associated with job-esteem ($r = .71$, $p < .001$) and job satisfaction ($r = .46$, $p < .001$). Finally, job-esteem and job satisfaction were also correlated ($r = .55$, $p < .001$).

Mediation Analyses

With job satisfaction as a mediating variable and the intention to stay as a dependent variable, Model 1 set the sense of calling, and Model 2 set the job-esteem as an independent variable, respectively. Age and sex were controlled as covariates in both models. Considering clinical experience as a controlled

variable, it was strongly correlated with age ($r = .88, p < .001$); thus, it was not included as a covariate.

Hypothesis 1 was tested by analyzing the mediation effect of Model 1. The total effect ($B = 0.410, p < .001$) and direct effect ($B = 0.251, p < .05$) of the sense of calling on the intention to stay were statistically significant (Table 4 and Figure 1). Moreover, the indirect effect ($B = 0.159$) between the sense of calling and the intention to stay through job satisfaction was also significant, as the 95% CI was 0.067 to 0.282. Thus, job satisfaction partially mediates the positive relationship between the sense of calling and the intention to stay.

Hypothesis 2 was tested by confirming the mediation effect of Model 2. For Model 2, the total effect ($B = 0.549, p < .001$) of job-esteem on the intention to stay was statistically significant (Table 5, Figure 2). However, the direct effect of job-esteem was not significant ($B = 0.261, p = .119$). Considering that the indirect effect through job satisfaction ($B = 0.288$, with a 95% CI of 0.125–0.510) was significant, job satisfaction seemed to fully mediate the positive effect of job-esteem on the intention to stay.

Table 2. Participants' Intention to Stay, Sense of Calling, Job-Esteem, and Job Satisfaction ($N = 134$).

Variables	Categories	$M \pm SD$
Intention to stay (1–5)		3.66 ± 0.91
Sense of calling (1–6)	Identification and person-environment fit	3.96 ± 0.77
	Sense, meaning, and value-driven behavior	3.67 ± 0.94
	Transcendent guiding force	4.56 ± 0.86
Job-esteem (1–5)	Professional self-awareness	3.65 ± 0.94
	Professional competence	3.71 ± 0.52
	Role and expertise of care	3.89 ± 0.61
	Social trust and respect	3.74 ± 0.64
	Respect and recognition of the organization	4.15 ± 0.63
	Professional authority and future value	3.88 ± 0.72
		2.99 ± 0.91
Job satisfaction (1–5)	Salary or income	3.44 ± 0.73
	Job stability	3.01 ± 0.65
	Work contents	2.79 ± 0.88
	Work environment	3.73 ± 0.74
	Working hours	3.11 ± 0.83
	Possibility for self-development	2.92 ± 0.95
	Communication and relationships	3.11 ± 0.91
	Fairness of performance appraisal	2.85 ± 0.77
	Employee benefits	3.05 ± 0.92
		2.62 ± 0.93
	2.88 ± 0.85	

Discussion

This study examined two models to investigate the intention to stay among COVID-19 frontline nurses at a dedicated hospital, focusing on the mediating role of job satisfaction. Job satisfaction had a partial mediating effect between the

Table 4. Summary of Job Satisfaction Mediation Analysis Between the Sense of Calling and the Intention to Stay.

Model 1	B	SE	p	95% CI
Total effect	0.410	0.099	.000	[0.214, 0.606]
Direct effect	0.251	0.107	.021	[0.039, 0.463]
Indirect effect	0.159	0.054		[0.067, 0.282]
Outcome: Job satisfaction	0.382	0.066	.000	[0.252, 0.513]
Sense of calling				
Outcome: Intention to stay	0.415	0.127	.001	[0.164, 0.666]
Job satisfaction				

Note. Controlling for sex, clinical experience; bootstrap sample size = 5,000; B = unstandardized effect coefficient; SE = standard error; p = level of statistical significance; CI = confidence interval.

Table 3. Bivariate Correlations Among the Study Variables ($N = 134$).

	1	2	3	4	5	6	7
1. Sex	1						
2. Age	0.10	1					
3. Clinical experience	0.17	0.88***	1				
4. Intention to stay	-0.11	-0.06	-0.08	1			
5. Sense of calling	-0.20*	-0.03	-0.07	0.36***	1		
6. Job-esteem	-0.08	-0.03	-0.05	0.32***	0.71***	1	
7. Job satisfaction	-0.04	-0.19*	-0.20*	0.39***	0.46***	0.55***	1

Note. Sex (0 = male; 1 = female). * $p < .05$, ** $p < .01$, *** $p < .001$.



Figure 1. Output path of job satisfaction mediation analysis between the sense of calling and the intention to stay.

Note. Sex and age were controlled. The parameter estimates were presented as a_1 =direct effect of the sense of calling on job satisfaction; b_1 =direct effect of job satisfaction on the intention to stay; c_1 =total effect of the sense of calling on the intention to stay; c'_1 =direct effect of the sense of calling on the intention to stay. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5. Summary of Job Satisfaction Mediation Analysis Between Job-Esteem and the Intention to Stay.

Model 2	B	SE	p	95% CI
Total effect	0.549	0.145	.000	[0.263, 0.835]
Direct effect	0.261	0.167	.119	[-0.068, 0.590]
Indirect effect	0.288	0.096		[0.125, 0.510]
Outcome: Job satisfaction	0.663	0.090	.000	[0.484, 0.841]
Job-esteem				
Outcome: Intention to stay	0.434	0.136	.002	[0.165, 0.704]
Job satisfaction				

Note. Controlling for sex, clinical experience; bootstrap sample size = 5,000; B = unstandardized effect coefficient; SE = standard error; p = level of statistical significance; CI = confidence interval.

sense of calling and the intention to stay and a full mediating effect between job-esteem and the intention to stay. The finding that a sense of calling and job-esteem significantly influence job satisfaction aligns with Herzberg's theory, which suggests that meaningful work and recognition of achievement contribute to job satisfaction as motivational factors (Herzberg, 2005).

For the first model, the sense of calling strengthened job satisfaction, and job satisfaction increased the intention to stay. This is consistent with previous research reporting that employees' sense of calling has a significant impact on job satisfaction (Dobrow Riza et al., 2019), and job satisfaction, in turn, positively influences employee retention (Keith et al., 2021). Moreover, it aligns with the results of Lee and Lee's (2022) study, which structurally analyzed the retention intention of nurses in small- and medium-sized hospitals and identified calling as a motivation factor that influences retention intention through job satisfaction. In summary, the sense of calling is thought to increase the intention to stay, partially mediated by job satisfaction. If job satisfaction is eliminated, the sense of calling and the intention to stay will still be related; however, the relationship will not be as strong. Even if nurses have a high sense of calling, its impact on their intention to stay would be weak when they have a low level of job satisfaction.

Regarding the second model for job-esteem, it can be assumed that job-esteem increases the intention to stay but only through job satisfaction. The observed relationship between job-esteem, job satisfaction, and intention to stay in this study is supported by previous literature that has partially confirmed these associations. For instance, the significant relationship between job-esteem and job satisfaction has been reported in several studies (Alotaibi et al., 2022; Bawakid et al., 2018). Additionally, studies focusing on nurses have highlighted the importance of job-esteem as a significant factor for job retention (Seo et al., 2021; Yoon & Ahn, 2022). This study not only aligns with the findings of previous research but also reveals a previously unreported complete mediating effect of job satisfaction in the relationship between job-esteem and intention to stay. Without being satisfied with their job, job-esteem alone cannot increase nurses' intention to stay; however, a higher level of job-esteem could increase the chances for nurses to have higher job satisfaction.

As a summarized result, this study revealed the critical role of job satisfaction for COVID-19 frontline nurses' intention to stay. In spite of the importance, frontline nurses' job satisfaction seemed relatively low in this study, which is consistent with previous studies (Said & El-Shafei, 2021; Senek et al., 2020). In this study, the mean job satisfaction score was 3.01, somewhat lower than the scores of 3.40 of the nurse population and 3.32 of the total workers' population in 2020 from KLIPS, which is a longitudinal national survey using the same instrument (KLIPS, 2020). Another study that surveyed nurses who provided care to patients with COVID-19 also showed lower job satisfaction compared to other hospital nurses or nurses working in community settings (Savitsky et al., 2021).

To enhance job satisfaction among frontline nurses, particularly in the context of a pandemic, it is imperative to specifically examine the factors contributing to their low job satisfaction. While intrinsic factors such as leadership, job performance, and organizational commitment are generally recognized as key factors influencing nurses' job satisfaction (Lu et al., 2019), the field of COVID-19 nursing may involve



Figure 2. Output path of job satisfaction mediation analysis between job-esteem and the intention to stay.

Note: Sex and age were controlled. The parameter estimates were presented as a_2 = direct effect of job-esteem on job satisfaction; b_2 = direct effect of job satisfaction on the intention to stay; c_2 = total effect of job-esteem on the intention to stay; c'_2 = direct effect of job-esteem on the intention to stay. * $p < .05$, ** $p < .01$, *** $p < .001$.

unique influences. Related research has indicated that working hours (Said & El-Shafei, 2021), access to personal protective equipment (Savitsky et al., 2021; Zhang et al., 2020), concerns about infection (Zhang et al., 2020), and recognition or compensation for their work (Said & El-Shafei, 2021) could significantly impact job satisfaction. This shift is likely due to the rapid deterioration of the working environment in the hospital during the pandemic and is likely to be repeated in similar crises in the future. However, a reliable, sufficiently large-scale survey on this topic is lacking in Korea, making it essential to prioritize investigating the work environment and job satisfaction of pandemic frontline nurses to identify areas that require improvement.

Nurses' sense of calling also should be regarded as important. This study revealed that the nurses who felt a strong sense of calling were more likely to be willing to work during the COVID-19 pandemic, indicating that a sense of calling allows nurses to continue their work even during a pandemic. Sense of calling has been studied as a factor significant to disaster response workers (Jo et al., 2018). During the COVID-19 pandemic, nurses' occupational calling was examined. In their qualitative research, Uzunbacak et al. (2022) stated that nurses experienced more positive than negative changes in their job calling during the COVID-19 pandemic. The nurses revealed that various factors, such as their perception about the meaning of their job and their desire to help others, had increased their sense of calling. In contrast, factors such as excessive workload, exhaustion, inadequate compensation, and lack of recognition were identified as negatively impacting nurses' sense of professional calling (Uzunbacak et al., 2022). Consequently, monitoring the working environment as safe and positive is essential not only to improve job satisfaction but also to prevent the exacerbation of the sense of calling.

To ensure frontline nurses can continue their roles, it is necessary to consider approaches that can enhance job-esteem too. In a pandemic context, social and organizational respects are crucial components of job-esteem that

deserve attention. Healthcare professionals face significant changes in their work environment during disasters such as pandemics, resulting in increased physical and psychological burdens (Kane-Urrabazo, 2007). Supporting and respecting the challenges faced by frontline healthcare professionals can strengthen their job-esteem. The COVID-19 outbreak has generated societal support and gratitude toward healthcare professionals (Einboden, 2020), with reports suggesting positive impacts on their job engagement and retention (Kim et al., 2020). However, there are criticisms that temporary heroism can impose sacrificial roles on nurses (Einboden, 2020; Mohammed et al., 2021). Thus, developing strategies that genuinely respect nurses' contributions to the healthcare system and society are necessary to sustain their job commitment during disasters. One example of this strategy could be to create an open line of communication for frontline nurses to voice their opinions and provide active feedback on their challenges and accomplishments.

Strengths and Limitations

This study has some limitations. First, it targeted only one hospital dedicated to COVID-19; hence, the results would be limited in terms of broader generalization. Second, as this study was cross-sectional, it could not verify the temporal sequence of the variables. Therefore, longitudinal research is needed to validate the findings. Finally, only a few variables were included to study nurses' intention to stay. Further research should incorporate additional variables for a comprehensive understanding of this topic.

Despite these limitations, this study is meaningful in that it is the first to examine the mediating effect of job satisfaction between professional perceptions, such as the sense of calling, job-esteem, and the intention to stay, among frontline nurses during a pandemic. Additionally, it confirmed the importance of job satisfaction for nurses' intention to stay. Based on this study, further research could be performed to explain frontline nurses' intention to stay under pandemic situations.

Implications for Practice

As job satisfaction is revealed to play a crucial role in COVID-19 frontline nurses' intention to stay, considerable efforts should be made to maintain job satisfaction in order to effectively respond to a pandemic. To achieve this, it is recommended to conduct reliable surveys that identify the vulnerable factors of the actual work environment and job satisfaction for the nurses. Keeping a safe working environment would also be helpful in keeping their calling sense leading to retention. In addition, proactive communication and feedback at organizational or social levels could be another effective strategy.

Conclusions

This study found that job satisfaction plays a critical role in COVID-19 frontline nurses' intention to stay. Sense of calling and job-esteem also affected their retention, but the effects were either partially or fully mediated by job satisfaction. Therefore, efforts should be made to maintain and improve nurses' job satisfaction to retain a workforce that can effectively respond to the pandemic.

Author Contributions

AI and CKK made substantial contributions to the conception and design of the study and also analyzed and interpreted the study data. AI was a major contributor to writing the manuscript. All authors read and approved the final manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Statement


The Institutional Review Board of the Seoul National University approved the study protocol including the use of existing research data (No. E2210/001-007).

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