

Factors Determining Turnover Intention of Newly Graduated Nurses during COVID-19 Pandemic

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Purpose: The purpose of this study was to explore factors affecting the turnover intention of newly graduated nurses during the COVID-19 pandemic. **Methods:** This study was conducted as a secondary analysis of data from the 2019 Graduates Occupational Mobility Survey, collected in September 2020. Overall, 240 nurses who graduated from universities in August 2018 or February 2019 were selected for data analysis. Descriptive statistics and logistic analysis of the data were performed using Stata 15.0. **Results:** The results of logistic regression analysis demonstrated that among individual factors, married individuals and men (relative to single individuals and women, respectively) were more likely to hold turnover intentions. While none of the organizational factors affect turnover intentions of new nurses, both work-related factors, namely job satisfaction and perceptions of human resource management, negatively affect turnover intention ($\beta=-0.67, p=.018, \beta=-0.59, p=.043$, respectively). **Conclusion:** In response to the call for further studies on nurses' turnover during the pandemic, we provide additional empirical evidence that corroborate with and expand upon the results of previous studies. Moreover, this study offers a nuanced view to understand nurses' turnover by considering the importance of nurses' human resource management perceptions in minimizing turnover intentions, which may help medical institutions understand factors and strategies to reduce turnover.

Key Words: Nurses; Personnel turnover; COVID-19 pandemic; Empirical research

INTRODUCTION

South Korea (hereafter Korea) was one of the first countries that engaged in a massive response fighting COVID-19 even before the World Health Organization (WHO) declared the novel outbreak a global pandemic on March 11, 2020 [1]. To control the situation in Korea, nurses have been frontline warriors in the ongoing COVID-19 battle. They have been working under a perfect storm of unprecedented challenges: high risk of infection and heavy workload [1]. However, from management perspectives, the prolonged struggle brought high turnover rates of nurses as well as difficulty in hiring new ones. According to a recent survey, the highest turnover rate was 45.5%, and the second highest rate was 42.9% in 2020, which im-

plies medical institutions are really in a critical situation during the pandemic [2]. Moreover, there have not been many responses as regards online recruiting in an attempt to fill vacancies in hospitals [3]. Thus, the time has never been better to identify the possible reasons why nurses consider leaving their organizations and measures on how to prevent turnover.

The number of studies investigating determining factors of nurse turnover has dramatically increased [4], yet the effects of the COVID-19 pandemic on nurses' turnover are uncharted territory in Korea. A few preliminary studies have examined the effects of the pandemic on nurses at the individual level, including mental health [5], nursing intention for COVID-19 patients [6], and working experiences [7], but nurse turnover has attracted less attention

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than other variables despite its importance. Moreover, the factors that affect newly graduated nurses' turnover intention during the pandemic have not been comprehensively identified. Newly graduated nurses are those in their first three years of practice and are a group at risk of leaving the profession [8,9]. They reportedly experience intense stress and challenges for the first couple of years after graduation, the period in which they transition from a student to healthcare professional [10,11]. Dissatisfying job experiences during these years may lead to high turnover rates among newly graduated nurses and, in fact, approximately 25% of newly graduated nurses leave their first job within a year [10,12,13]. Given that the newly graduated nurses have faced unprecedented working conditions, it is necessary to explore determining factors of their turnover intentions.

It is also important to consider roles of human resource management (HRM) practices, which has attracted less attention than other determining factors of turnover in the nursing literature. HRM practices are an integrated system comprising employee recruitment and selection, performance and compensation management, extensive employee involvement, and training and career development [14]. Such practices are implemented to increase organizational effectiveness by acquiring, developing, and training a valuable workforce, and thus these goals cannot be achieved unless the employees are satisfied with such practices or perceive them as an effective way to increase their commitment to the organization [15]. Therefore, the focus should be placed on newly graduated nurses' perceptions of HRM practices along with classical predictors of turnover intentions.

Accordingly, the purpose of this study is to explore determining factors of turnover intentions of newly graduated nurses during the COVID-19 pandemic. The research questions guiding this study are as follows:

- What factors contribute to newly graduated nurses' turnover intentions in the midst of the COVID-19 pandemic?
- Among the determining factors of turnover intentions, which factor is the most influential?

1. Conceptual Model

In order to consider various factors in the work situation related to turnover intentions, we classify determining factors into three categories: individual factors, organizational factors, and work-related factors [16].

Individual factors include age at graduation, gender, marital status, living with parents, job tenure, degree type

(educational level), and reasons for choosing a major. First, age was included because older nurses are more likely to stay employed with their organization than are younger nurses [17]. Second, gender was considered as an important factor. Traditionally, as nursing is a female-dominant field, male nurses face tremendous stress in the job due to gender stereotypes, conflict with female nurses, and patients refusing care provided by male nurses. Thus, the turnover rate of male nurses is much higher than that of female nurses [18]. Third, the majority of newly graduated nurses are in their 20s, and under the backdrop of young people delaying marriages in Korea, the influence of marital status in explaining turnover intentions is considered. Being married usually increases employees' financial requirements, so unmarried nurses may report more turnover intentions than married nurses [19]. Fourth, whether newly graduated nurses are living with parents is included under the assumption that those who depend on their parents financially and emotionally may have more motivation to change jobs to live independently [11,20]. Fifth, as longer job tenure implies continued job retention, the negative relationship between job tenure and turnover intention is expected [21]. Sixth, the type of nursing degree was included. There are two types of nursing education programs in Korea: a 3-year diploma and a 4-year bachelor's program. Nurses holding degrees from the latter are reportedly more likely to switch jobs due to their greater occupational mobility (perceived or otherwise) than that of their less educated counterparts [11]. Lastly, reasons for choosing the nursing major were included because they would influence nursing professionalism and commitment. Those who chose the major primarily because of its high level of job security and high employment rates upon graduation may have less intrinsic motivation to become a nurse and thus have low nursing professionalism that in turn affects future turnover behaviors [11,21].

Organizational factors include hospital location, hospital size, monthly income, and weekly working hours because there are possible differences in newly graduated nurses' turnover depending on hospital characteristics as well. Hospital location was expected to affect turnover because rural hospitals have difficulties in recruiting and retaining nurses [11]. Newly graduated nurses in large hospitals might have low turnover rates due to greater internal mobility opportunities and more competitive compensation [22]. Monthly income has been a strong significant predictor of turnover intention in the hospital [23] and long work hours are related to increased turnover intention [24].

In addition to individual and organizational factors,

distinctive features of our model are job satisfaction and HRM perceptions as work-related factors. Several theoretical frameworks of employee turnover have proposed that dissatisfied employees leave their organizations, whereas satisfied employees stay [25,26]. Nurses' perceptions of HRM practices were included given the important role HRM practices play in retaining valuable employees. Sound HRM practices signal to nurses that the hospital cares about them and are willing to invest in their development. Nurses may perceive HRM practices as a kind of personalized support, an investment into them, and a recognition of their contribution. The nurses reciprocate with willingness to stay within the hospital [14,15].

We use turnover intention as a turnover proxy based on theoretical reasons. Although recent studies demonstrated a discrepancy between turnover intention and actual turnover behavior [27,28], it is nonetheless true that employees undergo a progression of withdrawal before they engage in actual turnover. Turnover intention is the last cognitive step before actual turnover behavior [26,29,30]. In other words, turnover intention is a necessary antecedent of turnover [31]. Accordingly, turnover intention can still be treated as an accurate proxy of actual turnover behavior.

The conceptual model elucidated above is summarized in Figure 1.

METHODS

1. Data Sources

The data come from the Graduates Occupational Mobility Survey (GOMS) produced by the Korea Employment Information Service (KEIS), an institution affiliated with

the Ministry of Employment and Labor in Korea. The GOMS is the largest annual cross-sectional survey of a representative sample of Korean graduates and aims to provide basic information to policy makers and researchers as to guide employment policy and in-depth studies of unemployment among the highly educated. The GOMS provides extensive information on youth labor market behaviors and educational experience. This information facilitates research projects that investigate characteristics of youths' transition from school to the labor market. Given the importance of the GOMS, it is funded by the Employment Insurance Fund, sponsored by the Ministry of Employment and Labor in Korea, and officially approved by the Korea National Statistical Office [32].

The GOMS sets graduates of colleges and universities as its population. The survey is conducted annually, around September to November of each year following the population's graduation. Among available GOMS data sets, we used the 2019 GOMS, the most recent data set, to capture the early days of the pandemic. The KEIS collected the 2019 GOMS in September 2020 when the pandemic caused overwhelming challenges to healthcare systems in Korea, thus we assume that respondents were directly or indirectly affected by the pandemic when they answered the survey items. The 2019 GOMS surveyed 18,271 college graduates who graduated in August 2018 or February 2019, from universities with an academic program spanning at least two years.

2. Ethical Considerations

Since the GOMS is publicly available data, this study is not subject to the institutional review board.

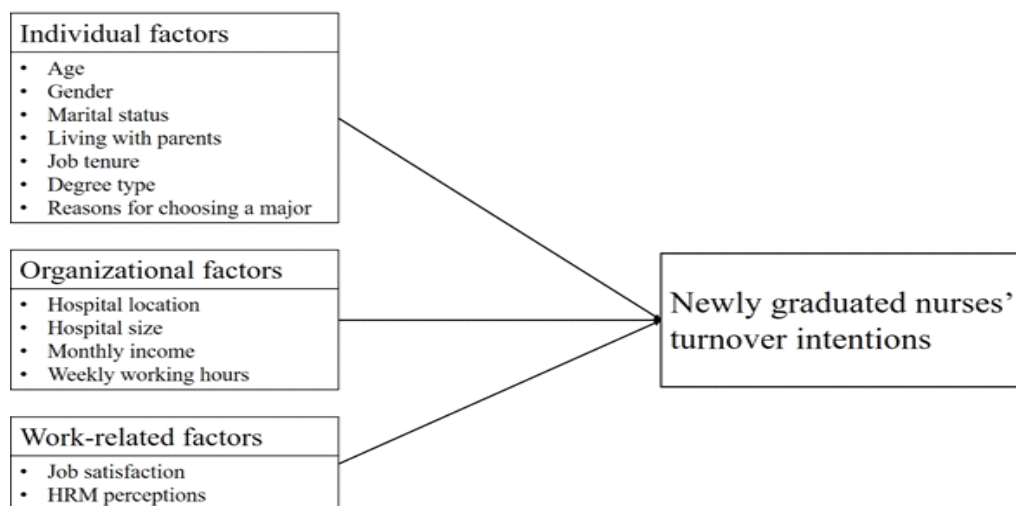


Figure 1. Conceptual model.

3. Study Sample

The total number of subjects surveyed by the 2019 GOMS was 18,271, of which 334 were in nursing (or related) majors. Of these, 256 were employed as nurses (excluding nursing assistants) as of the survey date, and among them, 9 persons who responded that their occupational status was either a temporary daily worker or a part-time worker were excluded from the analysis. In addition, as the main purpose of this study is to investigate "new" nurses (i.e. newly graduated), those who have served as nurses prior to graduation and/or have served as nurses for more than 36 months (7 persons) were also excluded, bringing the total head count to 240.

4. Measures

As for the explanatory variables used for the analysis of newly graduated nurses' turnover intention, they were selected from the variables that were found to be related to nurses' turnover and turnover intention in previous studies. First, individual factors include age, gender, marital status, whether or not a respondent resides with their parents, degree type (associate's vs. bachelor's degree), job tenure, and reasons for choosing a major (i.e. due to internal factors such as academic interest and aptitude, or external factors such as job and employment prospects, social perception, and parental guidance). Second, organizational factors include the location of the hospital (Seoul, metropolitan area, etc.), hospital size, average monthly wage, and weekly working hours. Third, work-related factors include overall satisfaction with the workplace and HRM perceptions, surveyed on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

5. Analysis

Descriptive statistics and logistic regression analysis of the data were performed using Stata 15.0. In general, when the dependent variable is a quantitative variable measured on a continuous scale, the influence of the explanatory variable is examined using a regression model. However, the KEIS measured a nurse's turnover intention using a discrete scale with 1 for the case of turnover intention and 0 otherwise, so the logistic regression was chosen for analysis using this dummy variable.

RESULTS

The characteristics of individual, organizational, and work-related factors of newly graduated nurses included

in the analysis are as follows. Their average age was 25.73 years, 82.1% of them were women, and 97.1% of them were unmarried. Those living with their parents accounted for 47.5% of the total, less than those who do not live together but nonetheless similar, and there were more graduates of four-year programs than those of programs spanning two to three years (Table 1). Average tenure of newly graduated nurses at their current job was 14.28 months. In 16.5% of cases, the reason for choosing the nursing (or related) major was due to internal factors such as academic interest and aptitude, and in 83.5% of cases motivators were external factors such as job and employment prospects, parental or teacher recommendation, social awareness and reputation.

As for the location of the workplace (hospital), most of the newly graduated nurses worked in provincial metropolitan cities at 43.1% (Busan, Incheon, etc.), followed by the Seoul area at 33.9% and other (less urban) areas at 23.0%, indicating that most of them are working in large cities. Large hospitals with more than 300 employees accounted for 70.0% of the total, and small hospitals with fewer than 50 employees accounted for 5.2% of the total. The average monthly wage was 2.94 million KRW, and weekly working hours was 45.28 hours (Table 1).

The following is the result of logistic regression analysis to examine the factors influencing the turnover intention of newly graduated nurses. A sample of 206 nurses was included in the analysis after excluding samples with missing values. As shown in Table 2, among individual factors, gender and marital status had a negative and significant relationship with turnover intentions ($\beta = -1.06$, $p = .031$, $\beta = -3.90$, $p = .030$, respectively), which means that married individuals and men (relative to single individuals and women, respectively) were more likely to hold turnover intention. While none of organizational factors are significantly related to turnover intention, both work-related factors, job satisfaction and HRM perceptions, had a negative and significant relationship with turnover intention ($\beta = -0.67$, $p = .018$, $\beta = -0.59$, $p = .043$, respectively). In other words, higher job satisfaction and higher HRM perception levels yielded lower turnover intention.

DISCUSSION

The current study explored factors affecting the turnover intention of newly graduated nurses during the COVID-19 pandemic using the 2019 GOMS. In particular, we considered individual, organizational, and work-related factors simultaneously to understand what factors contribute to newly graduated nurses' turnover intentions. The results of logistic regression collectively indi-

Table 1. The Individual, Organizational, and Work-related Characteristics of Participants (N=240)

Factors	Variables	Categories	n (%) or M±SD
Individual factors	Age (year)		25.73±3.68
	Gender	Male	43 (17.9)
		Female	197 (82.1)
	Marital status	Married	7 (2.9)
		Single (not married)	233 (97.1)
	Living with parents	Yes	114 (47.5)
		No	126 (52.5)
	Education level	Associate's degree	113 (47.1)
Bachelor's degree		127 (52.9)	
Tenure at current job (monthly)		14.28±5.29	
Reason for choosing major	External	198 (82.5)	
	Internal	39 (16.3)	
Organizational factors	Location of workplace	Other	55 (22.9)
		Provincial metropolitan	103 (42.9)
		Seoul	81 (33.8)
	Workplace size (The number of employees)	≤ 49	11 (4.6)
		50~299	52 (21.7)
≥ 300		147 (61.3)	
Average monthly wage (ten thousand won)		294.41±55.80	
Weekly working hours		45.28±6.99	
Work-related factors	Job satisfaction		3.33±0.82
	HRM perceptions		3.33±0.75
Turnover intention	No		177 (73.7)
	Yes		63 (26.3)

HRM=Human resource management; There are missing values in the response value for variables whose sum of 'categories' is below 240 individuals and when percentages within a category do not add up to 100%; The number of missing values is 3 for 'reason for choosing major', 1 for 'location of workplace', and 30 for 'workplace size'.

cate that while the relationship between organizational factors and turnover intentions is theoretically sound, only effects of individual factors and work-related factors on turnover intentions of newly graduated nurses who are facing challenges posed by the pandemic were empirically supported.

Among individual factors, gender and marital status were significant factors in the logistic regression. This result might be partially attributed to gender imbalance in our sample, but this is inevitable as the nursing profession remains predominantly occupied by females. Male nurses in Korea have experienced difficulties in adjusting to gender imbalance in the industry and the trend seems to continue through the pandemic [18,33]. To decrease the turnover of male nurses, organizations should break the conservative social atmosphere that may persuade male nurses to move to other jobs.

Similarly, our results demonstrated that married in-

dividuals are more likely to have turnover intentions than single individuals, which is consistent with theoretical predictions. As nurses are at high risk of COVID-19 infection, it is natural for married nurses to worry about a chance of spreading infections in their household and think about quitting to protect their family. Organizations need to understand married individuals' needs during the pandemic and develop an employee assistance program to support their personal and professional lives [34].

The results of this study also suggest that work-related factors, namely job satisfaction and HRM perceptions, indeed affect the turnover intention of newly graduated nurses. Regarding job satisfaction, the turnover intention of newly graduated nurses with high job satisfaction was found to be low, which is consistent with the results of previous studies [35]. To mitigate their turnover intentions, reducing the factors of job dissatisfaction and developing effective countermeasures are paramount [36]. In partic-

Table 2. Factors Affecting the Turnover Intention by Logistic Regression

(N=206)

Factors	Variables		β	SE	z
Individual factors	Age		-0.11	0.08	-1.32
	Gender: Male		-1.06*	0.49	-2.16
	Marital status: Married		-3.90*	1.80	-2.17
	Living with parents: Yes		-0.63	0.39	-1.62
	Education level: Associate's degree		-0.31	0.40	-0.78
	Tenure (at current job)		-0.03	0.04	-0.86
	Reason for choosing major: External		-0.51	0.55	-0.92
Organizational factors	Location of workplace: Other	Provincial metro areas	0.31	0.48	0.64
		Seoul	0.60	0.56	1.06
	Workplace size: 49 or less	50~299	0.32	0.87	0.37
		300 or more	-0.38	0.85	-0.44
	Average monthly wage		-1.07	1.21	-0.88
	Weekly working hours		0.02	0.03	0.82
Work-related factors	Job satisfaction		-0.67*	0.28	-2.36
	HRM perceptions		-0.59*	0.29	-2.02
	(Constant)		16.40	7.86	2.09
	N			206	
	LR-test statistic			45.42***	
	Pseudo R ²			0.19	
	Log likelihood			-96.82	

* $p < .05$, *** $p < .001$; HRM=Human resource management; LR-test=Likelihood-ratio test; SE=Standard error.

ular, as the sense of duty as a medical professional has been amplified for nurses due to COVID-19, it is all the more necessary to provide a psychological treatment program that can relieve their heightened stress levels or treat them appropriately for excessive work. If low levels of turnover intention of newly graduated nurses are achieved by improving their job satisfaction, then they will be more psychologically and/or economically stable, thereby increasing the quality of nursing services provided to patients.

HRM perceptions showed a negative relationship with turnover intention of newly graduated nurses, which was consistent with the results of previous studies [15]. During the pandemic, the hospital-nurse relationship reflects the balance between what hospitals are obliged to provide to nurses and nurses' subjective beliefs on what contributions they ought to provide for their hospital in return, a sort of medical quid pro quo. Nurses regularly compare their contributions to the inducements they are or ought to be receiving from their hospitals. These comparisons are

critical in lowering turnover intention. When hospitals fulfill their nurses' expectations and thereby strengthen their sense of competitive HRM practices, nurses will, in the interest of reciprocity, remain loyal and committed to their hospital [37]. Thus, retention strategies should focus on increasing nurses' perceptions of HRM practices. Medical institutions should know that nurses, as frontline worriers of the COVID-19 battle, deserve to demand better treatment. Instead of simply providing more monetary rewards, personnel managers of hospitals should pay attention to how nurses perceive their pay, benefits, job security, job autonomy, and promotional and developmental opportunities in the hospital if they are eager to retain their most valuable human resources.

Like any other study, this study has several limitations that suggest ways in which further research in this area might be developed. First, given that it was a cross-sectional study based on the 2019 GOMS, definitive inferences about causality are rendered difficult [38]. However, all predictions are in line with theoretical justifications

and empirical evidence that have been demonstrated in previous studies. Nevertheless, future research should consider longitudinal designs to provide greater insights into the causal relationship among determining factors and turnover intentions.

Second, this study assumes such that survey participants were likely experiencing direct and/or side effects from the COVID-19 pandemic. Although the survey was conducted in 2020, there is nonetheless a potential for response lag of newly graduated nurses who participated in the survey; if it cannot be said conclusively that the respondents were experiencing direct effects from the pandemic, then in turn their prospective decisions may differ from those formulated a couple of months after the survey. Therefore, this study calls for more attention on newly graduated nurses' experiences during the pandemic with rigorous research designs in order to come up with strategies to reduce turnover rates of nurses during times of increased stress and social unrest.

Third, in line with the aforementioned points, separate studies of gender, marital status, job satisfaction, and perceptions of HRM practices are needed. Due to the data limitations, we were not able to fully understand why each factor affects turnover intentions of newly graduated nurses. For example, further studies should attempt to understand why married individuals are more likely hold turnover intentions than single individuals in relation with the challenges posed by the pandemic. Exploring such underlying mechanisms and situational factors would let us understand the extent to which family issues influence the turnover of newly graduated nurses.

CONCLUSION

This study investigated factors that potentially lead to higher turnover among newly graduated nurses who were experiencing not only the critical transition period from student to healthcare professional, but also harsh working conditions posed by the global pandemic. Married nurses were more likely to hold turnover intentions than single nurses and male nurses were more likely to have high levels of turnover intentions than their female counterparts. Also, job satisfaction and HRM perceptions played a pivotal role in minimizing turnover intentions of newly graduated nurses. Therefore, healthcare employers must heed the importance of individual differences, job satisfaction, and sound HRM practices if medical institutions are to retain their valuable workforce, especially in times when their skills and professionalism are most relied upon.

CONFLICTS OF INTEREST

The authors declared no conflict of interest.

AUTHORSHIP

Conceptualization and study design - OS and OJ; Data analysis - OS; Interpretation of the data - OS and OJ; Writing original draft - OS and OJ.

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