ORIGINAL ARTICLE

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ISSN 1225-9330 (Print) | ISSN 2288-4955 (Online)
J Korean Acad Nurs Adm (간호행정학회지) Vol. 30 No. 1, 11-18
https://doi.org/10.11111/jkana.2024.30.1.11

The Mediating Effects of Perceived Organizational Support and Perceived Supervisor Support in the Relationship between Clinical Nurses' Organizational Citizenship Behavior and Turnover Intention

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Purpose: Turnover rates among nurses in South Korea are higher than those of other job groups, affecting hospital performance. This study clarified the mediating role of perceived organizational and supervisor support in the relationship between nurses' organizational citizenship behavior and turnover intention. **Methods:** This study involved a descriptive survey of 160 nurses working in two hospitals in S, South Korea. Data were analyzed using the Hayes PROCESS macro (Model 4) program, version 3.4. **Results:** Organizational citizenship behavior was positively correlated with perceived organizational support and perceived supervisor support but negatively correlated with turnover intention. Perceived organizational support was positively correlated with perceived supervisor support. Additionally, perceived organizational and supervisor support were negatively correlated with turnover intention. The authors verified the mediating role of perceived organizational support in the relationship between organizational citizenship behavior and turnover intention. However, the mediating role of perceived supervisor support was not confirmed. **Conclusion:** The higher a nurse's organizational citizenship behavior, the higher their perceived organizational support, which reduces turnover intention. High-quality nursing contributes to organizational performance; therefore, the nursing workforce should be carefully preserved.

Key Words: Nurses; Organizational citizenship behavior; Perceived organizational support; Perceived supervisor support; Turnover intention

INTRODUCTION

Medical institutions have a labor-intensive structure, with nursing organizations accounting for 30% of all hospital [1,2]. Nurses are essential for enhancing hospitals' performance and competitiveness [3] and improving patients' health through direct nursing, indirect nursing, and education. Superior nursing personnel are essential to ensure safe and high-quality nursing [4]. However, nurses have a high turnover rate due to work maladjustment, irregular working hours, night shifts, and heavy workloads [1,2].

According to a survey conducted in 36 hospitals in South Korea [2], nurses' turnover rate was 15.55%, which is 2.33 times higher than that for any other job (6.67%). This decreases hospitals' productivity and efficiency by causing a labor shortage, increased workload for the remaining nurses, increased patient complaints regarding nursing services, and higher recruitment and training costs for new nurses [5]. Therefore, it is necessary to identify the factors influencing nurses' turnover intention (TI) to develop appropriate mitigation strategies. Decreasing nurses' TI will ultimately improve the quality of medical services, patient safety, and hospital performance.

In response to the current era of medical competition, hospitals have emphasized the importance of voluntary behaviors—that is, actions beyond an individual's official duties—as these contribute to an organization's efficiency and performance [6]. Organizational citizenship behavior (OCB) refers to the execution of prescribed duties and voluntary efforts to develop an organization based on a sense of ownership [7]. OCB enables the efficient use of insufficient human resources, creates a positive environment through members' voluntary participation [8], decreases TI [9], and is an important indicator of organizational performance. Thus, it is necessary to examine the effects of

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Received: Apr 28, 2023 | Revised: Oct 2, 2023 | Accepted: Oct 16, 2023

voluntary OCB on nurses' TI.

Perceived organizational support (POS) and perceived supervisor support (PSS) refer to organizations' and supervisors' interests in members' welfare and contributions [10]. Perceived support affects members' self-worth, producing a positive attitude [11] and reducing TI [12]. In other words, POS and PSS are important factors in reducing nurses' TI.

According to previous studies, OCB positively impacts individual productivity and performance, lowers TI, and improves organizational performance [13]. However, extra work, albeit voluntary, can increase workload. This, in turn, can increase TI if appropriate recognition and compensation do not follow [14]. Research shows that as POS increases, TI decreases, due to a sense of obligation to the organization. Additionally, receiving recognition and mental and material help from the organization and supervisors increases commitment to the organization and reduces TI [15-17].

According to existing studies, OCB, POS, and PSS reduce TI. However, few studies have identified the overall relationship between these variables, particularly in the context of nursing practice. Therefore, this study aims to: (1) identify nurses' OCB, POS, PSS, and TI; (2) identify the relationship among nurses' OCB, POS, PSS, and TI; and (3) verify the mediating effects of POS and PSS on the relationship between nurses' OCB and TI. This study is expected to provide basic data that can inform measures to reduce nurses' TI.

METHODS

1. Research Design

This descriptive cross-sectional study was designed to identify the mediating effects of POS and PSS on the relationship between nurses' OCB and TI.

2. Study Sample

Participants were selected through convenience sampling from a group of nurses working in two general hospitals in S. who had more than three months of experience following the completion of their preceptorship. Nurses in management positions (unit managers or above) were excluded. The authors identified the sample size necessary for multiple regression analysis using the G*Power 3.1 program. The minimum sample size was 136, which satisfied the eight predictor variables with a significance level of 0.05, an effect size of 0.15, and a statistical power of 0.90. Data were collected from 165 participants, considering a 15% withdrawal rate, and after excluding 5 responses with missing responses, a total of 160 responses were included in the final analysis.

3. Instruments

1) General characteristics

The following general characteristics were surveyed: gender, age, position, department, clinical experience, marital status, religion, and educational level.

2) Organizational citizenship behavior

The authors used several of the 24 questions developed by Podsakoff et al.[18] and translated, modified, supplemented, and configuration feasibility tested by Chang [19]. Chang's [19] version, the study questionnaire, included 15 questions, with three questions each for conscientiousness, sportsmanship, civic virtue, courtesy, and altruism. For each question, a five-point Likert scale, ranging from "strongly disagree" (1 point) to "strongly agree" (5 points), was used. Higher scores indicated greater OCB. The Cronbach's α values in Chang's [19] study and this study were .89 and .81, respectively.

3) Perceived organizational support

The authors used an abbreviated version of Eisenberger et al.'s [20] questionnaire, as translated by Kim [21], to measure POS. There were eight questions, each measured on a five-point Likert scale, ranging from "strongly disagree" (1 point) to "strongly agree" (5 points). Higher scores indicated greater POS. The Cronbach's α values in Kim's [21] study and this study were .85 and .93, respectively.

4) Perceived supervisor support

The authors used the eight questions developed by Kwon and Choi [22], based on Greenhaus et al.[23], to measure PSS. For each question, a five-point Likert scale ranging from "strongly disagree" (1 point) to "strongly agree" (5 points) was used. Higher scores indicated greater PSS. The Cronbach's α values in Kwon and Choi's [22] study and this study were .90 and .86, respectively.

5) Turnover intention

The authors used Kim's [24] six questions, revised and supplemented with Mobley's [25] questionnaire, to measure TI. A five-point Likert scale ranging from "strongly disagree" (1 point) to "strongly agree" (5 points) was used

for each question, with higher scores indicating greater TI. The Cronbach's α values in Kim's [24] study and this study were .76 and .75, respectively.

4. Data Collection & Ethical Consideration

Data were collected from November 1, 2019, to February 10, 2020, using a structured self-report questionnaire. After receiving approval from the Institutional Review Board (IRB NO. KANGDONG 2019-08-010). The authors obtained consent from the nursing department by explaining the study and its purpose and sought the cooperation of the unit managers in the relevant wards. The study participants provided written informed consent, and the study conformed to the Declaration of Helsinki standards. To ensure confidentiality, participants were instructed to seal the completed questionnaires in envelopes and place them in a locked box. The envelopes were retrieved from the researchers. The participants took approximately 20 minutes to complete the questionnaire and were presented with a small gift as a token of appreciation.

5. Data Analyzes

The collected data were analyzed using IBM SPSS version 23.0 (Armonk, NY, USA: IBM Corp). Variances in OCB, POS, PSS, and TI were analyzed based on the participants' characteristics using independent t-tests and one-way ANOVAs. Post-hoc analysis was conducted using Scheffé's test. The relationship between OCB, POS, PSS and TI was analyzed using Pearson correlations and internal consistency (i.e., the reliability of the measurement tools) was analyzed using Cronbach's α. The authors employed the Hayes' PROCESS macro (Model 4) to verify the mediating effects of POS and PSS on the relationship between OCB and TI. Furthermore, the bootstrapping method, a nonparametric resampling technique, was used to verify the significance of the indirect effects, with a sampling number of 10,000 and a 95% bias-corrected confidence interval.

RESULTS

1. Sample Characteristics

Most participants were aged between 20 and 29 years (97 participants, 60.6%), followed by 30~39 years (48 participants, 30.0%) and over 40 years (15 participants, 9.4%). The subjects included 153 women (95.6%) and 7 men (4.4%). The average clinical experience was 82.65 months and the numbers of participants in staff nurse and charge nurse positions were 142 (88.8%) and 18 (11.2%), respectively. Of all the participants, 74 worked in general units (46.3%); 55 worked in special units (34.4%), such as the intensive care unit, emergency room, and operating rooms; and 31 worked in other departments (19.3%), such as the outpatient department and dialysis unit. In terms of marital status, 112 participants were single (70.0%) and 48 were married (30.0%). Regarding religion, 62 participants (38.7 %) were religious, whereas 98 (61.3%) were not. Most participants were university graduates (112, 70.0%), 26 participants (16.2%) had a graduate degree, and 22 participants (13.8%) had a vocational college degree (Table 1).

2. Organizational Citizenship Behavior, Perceived Supervisor Support, Perceived Organizational Support, and Turnover Intention by Subjects' Characteristics

Subjects' OCB exhibited statistically significant variance based on age (F=15.93, $p<.001$), position (t=-2.62, $p=.010$), department (F=3.48, $p=.033$), marital status (t=-3.74, $p<.001$), religion (t=-2.54, $p=.012$) and education (F=9.45, $p<.001$). Charge nurses and participants aged over 40 years showed greater OCB than staff nurses and participants in other age groups. Nurses who were married, religious, or working in other departments reported significantly greater OCB than those who were single, non religious, or working in special units. Furthermore, nurses with advanced degrees showed significantly greater OCB than the others.

There was no statistically significant variance in POS or PSS based on the subject characteristics. However, TI exhibited statistically significant variance based on marital status (t=2.34, $p=.021$) and age (F=6.13, $p=.003$). Participants who were married and over 40 years of age exhibited lower TI than single participants and those in other age groups (Table 1).

3. The Relationship between Subjects' Organizational Citizenship Behavior, Perceived Supervisor Support, Perceived Organizational Support, and Turnover Intention

Participants' OCB was positively correlated with POS (r=.27, $p=.001$) and PSS (r=.18, $p=.025$), and negatively correlated with TI (r=-.24, $p=.002$). POS and PSS were positively correlated (r=.57, $p<.001$). However, POS (r=-.45, $p<.001$) and PSS (r=-.43, $p<.001$) were negatively correlated with TI (Table 2).

Table 1. Differences in Organizational Citizenship Behavior, Perceived Organizational Support, Perceived Supervisor Support, and Turnover Intention According to the General Characteristics of Participants (*N*=160)

Variables	Categories	n (%) or M±SD	OCB		PSS		POS		TI	
			M±SD	t or F (*p*) Scheffé	M±SD	t or F (*p*) Scheffé	M±SD	t or F (*p*) Scheffé	M±SD	t or F (*p*) Scheffé
Age (yr)	20~29[a]	97 (60.6)	3.46±0.32	15.93	3.21±0.61	1.55	2.73±0.58	1.86	3.57±0.54	6.13
	30~39[b]	48 (30.0)	3.47±0.36	(<.001)	3.12±0.69	(.216)	2.61±0.48	(.158)	3.54±0.52	(.003)
	≥40[c]	15 (9.4)	3.97±0.30	a, b<c	3.46±0.77		2.91±0.57		3.07±0.45	a, b<c
Gender	F	153 (95.6)	3.51±0.35	-0.36	3.21±0.66	0.12	2.70±0.54	-0.93	3.53±0.53	1.39
	M	7 (4.4)	3.56±0.45	(.721)	3.18±0.67	(.907)	2.98±0.81	(.388)	3.24±0.75	(.166)
Clinical experience (month)		82.65±77.42								
Position	Staff nurse	142 (88.8)	3.49±0.35	-2.62	3.19±0.65	-0.82	2.70±0.56	-1.01	3.53±0.54	0.97
	Charge nurse	18 (11.2)	3.72±0.37	(.010)	3.33±0.70	(.413)	2.83±0.53	(.316)	3.40±0.57	(.332)
Department	General unit[a]	74 (46.3)	3.50±0.34	3.48	3.26±0.58	0.80	2.68±0.54	0.52	3.51±0.47	0.53
	Special unit[b]	55 (34.4)	3.46±0.36	(.033)	3.20±0.72	(.450)	2.77±0.61	(.594)	3.56±0.60	(.589)
	Etc.[c]	31 (19.3)	3.66±0.36	b<c	3.08±0.69		2.66±0.50		3.44±0.60	
Marital status	Single	112 (70.0)	3.45±0.33	-3.74	3.19±0.64	-0.38	2.69±0.56	-0.53	3.58±0.53	2.34
	Married	48 (30.0)	3.67±0.37	(<.001)	3.24±0.69	(.706)	2.74±0.54	(.599)	3.36±0.53	(.021)
Religion	YES	62 (38.7)	3.60±0.33	-2.54	3.13±0.64	1.14	2.75±0.60	-0.66	3.47±0.57	0.92
	NO	98 (61.3)	3.46±0.36	(.012)	3.25±0.66	(.256)	2.69±0.53	(.509)	3.55±0.52	(.357)
Education level	Vocational college degree[a]	22 (13.8)	3.46±0.34	9.45 (<.001)	3.37±0.69	1.66 (.193)	2.74±0.56	0.08 (.920)	3.50±0.53	0.71 (.493)
	University[b]	112 (70.0)	3.46±0.33	a, b<c	3.15±0.61		2.70±0.55		3.54±0.52	
	≥Graduate degree[c]	26 (16.2)	3.78±0.38		3.33±0.78		2.74±0.59		3.40±0.62	

Etc.=Outpatient department, dialysis unit; M=Mean; OCB=Organizational citizenship behavior; POS=Perceived organizational support; PSS=Perceived supervisor support; SD=Standard deviation; Special unit=Intensive care unit, emergency room, operating room; TI=Turnover intention.

Table 2. The Correlation among Organizational Citizenship Behavior, Perceived Organizational Support, Perceived Supervisor Support, and Turnover Intention (*N*=160)

Variables	OCB	POS	PSS	TI
	r (*p*)	r (*p*)	r (*p*)	r (*p*)
OCB	1			
POS	.27 (.001)	1		
PSS	.18 (.025)	.57 (<.001)	1	
TI	-.24 (.002)	-.45 (<.001)	-.43 (<.001)	1

OCB=Organizational citizenship behavior; POS=Perceived organizational support; PSS=Perceived supervisor support; TI=Turnover intention.

4. The Mediating Effect of Perceived Organizational Support and Perceived Supervisor Support in the Relationship between Organizational Citizenship Behavior and Turnover Intention

OCB (independent variable) had a significant positive effect on POS (B=0.22, *p*=.007) with 7% explanatory power and on PSS (B=0.17, *p*=.025) with 3% explanatory power. Although OCB had no statistically significant effect on TI (dependent variable) (B=-0.07, *p*=.087), POS (B=-0.20, *p*=.001) and PSS (B=-0.16, *p*=.003) had significant negative effects on TI. The explanatory power of the independent variable and the two mediating variables for the dependent variable was 27% (Table 3). The causal relationship between the variables is shown in Figure 1.

The mediating effect of POS on the relationship be-

tween OCB and TI was statistically significant, with a 95% bootstrap confidence interval (-0.10~-0.01), not including 0. In other words, the higher the OCB, the higher the POS, which reduces TI. However, the mediating effect of PSS was not statistically significant, with a 95% bootstrap confidence interval (-0.07~0.00), including 0 (Table 4).

DISCUSSION

This study aimed to (1) understand the relationship between OCB, POS, PSS, and TI, and (2) establish specific strategies to reduce TI by identifying the mediating effects of POS and PSS on the relationship between OCB and TI.

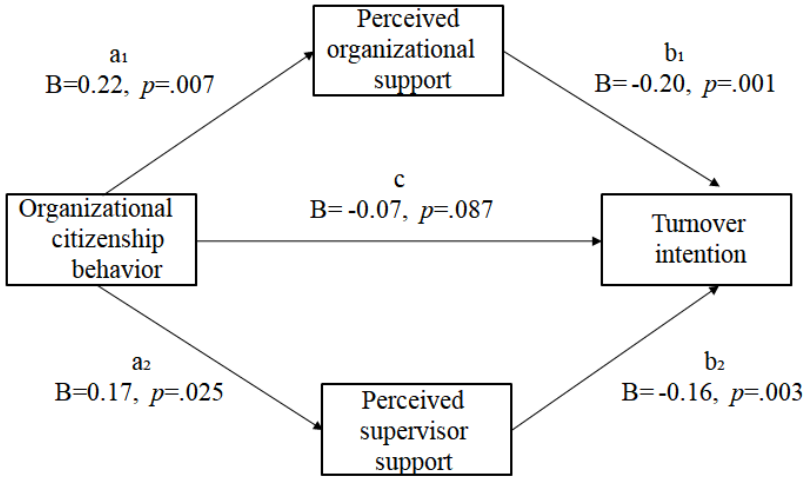

Figure 1. Conceptual and statistical diagrams of the parallel multiple mediator model for turnover intention.

Table 3. Direct Effect on the Perceived Organizational Support and Perceived Supervisor Support on the Relationship between Organizational Citizenship Behavior and Turnover Intention (*N*=160)

Variables	M1 (POS)				M2 (PSS)				Y (TI)			
		B	SE	*p*		B	SE	*p*		B	SE	*p*
X (OCB)	a_1	0.22	0.06	.007	a_2	0.17	0.08	.025	c	-0.07	0.43	.087
M1 (POS)									b_1	-0.20	0.06	.001
M2 (PSS)									b_2	-0.16	0.05	.003
		R^2=.07, F=12.03, *p*=.007				R^2=.03, F=5.14, *p*=.025				R^2=.27, F=18.76, *p*<.001		

a_1, a_2, b_1, b_2, c=Direct effect; B=Unstandardized coefficient; M=Mediator; OCB=Organizational citizenship behavior; POS=Perceived organizational support; PSS=Perceived supervisor support; SE=Standard error; TI=Turnover intention; X=Dependent variable; Y=Independent variable.

Table 4. Mediating Effects on the Perceived Organizational Support and Perceived Supervisor Support on the Relationship between Organizational Citizenship Behavior and Turnover Intention (*N*=160)

Path	B	SE	*p*	95% Bias-corrected CL	
				LLCL	ULCL
Total effect (OCB→TI)	-0.15	0.05	.002	-0.24	-0.05
Direct effect (OCB→TI)	-0.07	0.43	.087	-0.16	0.01
OCB→POS→TI	-0.04			-0.10	-0.01
OCB→PSS→TI	-0.03			-0.07	0.00

B=Unstandardized coefficient; CL=Confidence interval; LLCL=Lower level confidence interval; ULCL=Upper level confidence interval; OCB=Organizational citizenship behavior; POS=Perceived organizational support; PSS=Perceived supervisor support; SE=Standard error; TI=Turnover intention.

In this study, subjects over the age of 40 showed high OCB, in line with Song et al. [26]. As nurses' age is linked to years of work experience, this finding may be explained by the fact that nurses with more work experience are more likely to voluntarily exceed the scope of their roles because of their familiarity with their official duties. Furthermore, nurses with more work experience are expected to show higher OCB because of the high sense of responsibility resulting from work experience. The OCB of charge nurses was higher than that of staff nurses. The charge nurse must serve as an example to other nurses, and it is believed that OCB increases as the sense of responsibility and role of the leader increases owing to the position. In this study, approximately 83% of charge nurses were in their 40s or older. Therefore, it is assumed that the interaction between age and experience led to a higher level of OCB among charge nurses. Higher OCB was observed in departments with fixed hours, such as outpatient departments and dialysis units, than in special units, including operating rooms and intensive care units. Considering the job rotation of nurses in most hospitals in South Korea, nurses move to the outpatient department or dialysis unit after building a career in the general or a special unit, which explains the relatively older age and longer work experience of nurses in these departments. Therefore, based on the age- and work experience-based findings of this study, it is believed that workers in departments with fixed hours showed higher OCB than shift workers.

However, nurses' TI depended on their age and marital status. The group over 40 years of age had the lowest TI, which supports Ko and Lee's [27] finding that TI was high in the group under 29 years of age. This is because nurses aged over 40 years have overcome the main causes of turnover, including maladjustment, marriage, childbirth, and parental care. Furthermore, the TI of married nurses was lower than that of single nurses, similar to that in Kwon and Kim [28], in which married nurses showed higher professional self-conception and lower TI than single ones. Thus, organizations should provide hospitable working environments and conditions for married nurses, such as workplace nurseries, flexible working schedules changeable at short notice, only day shifts (as in Japan), exclusive night shifts, flexible timings, and work sharing, which would enable them to balance work and domestic responsibilities successfully.

Nurses' OCB affected TI when POS was moderate. Hence, the higher a nurse's OCB, the higher their POS and TI. Although a direct comparison is difficult owing to the absence of previous studies that verified the relationship between OCB, TI, and POS (as the mediating variable) in the nursing context, some studies have shown the negative effects of POS on the TI of hotel workers [29].

High OCB increases POS, leading to strong rapport and trust between the organization and its members [30], a positive attitude toward the organization, and reduced TI. Therefore, organizations should adopt measures to enhance OCB and, by extension, POS.

Organizations should consider the following changes. First, the positive aspects of the organization should be emphasized [31], and teamwork and organizational culture should be developed. Second, education should be provided to reinforce nurses' intrinsic motivation as it raises their sense of responsibility and rapport with the organization. Third, managers should add to and highlight the value of nurses' services, thus inspiring passion and motivation. Fourth, managers should provide various social activities, such as clubs and social meetings, to enable nurses to establish ties with other members of the organization, especially those with different roles.

To reinforce POS, organizations should provide nurses with intrinsic rewards, such as praise, acknowledgement, mentoring, and equity, along with extrinsic rewards, such as wages, promotions, and training opportunities [32]. Programs that enable nurses to perceive the organization's care and support should be established and implemented.

In this study, PSS was found to reduce TI. From the perspective of Social Exchange Theory, employees receive support from their supervisors and reciprocate by engaging in beneficial behaviors [33]. Supervisor support is considered an essential mechanism for improving work environments by reducing stress [33]. Given that supervisor support enhances the relationship between employees' work-family demands and well-being [34], it is assumed that clinical nurses' PSS would decrease TI. However, a meta-analysis on TI inhibitors among hotel employees revealed different results [35]. Specifically, organizational support perception, an organization-related inhibitor, negatively affected TI, whereas supervisor support perception, a work environment-related factor, had no effect. Hospitals, as complex organizations, have unique characteristics, such as workforce specialization, vertical decision-making structures, and a focus on technical expertise. These distinct features may explain why PSS influenced TI differently than it does in other organizations.

PSS did not mediate the relationship between OCB and TI. PSS signifies employees' general beliefs about the extent to which their supervisors value their contributions and show interest in their well-being [36]. While POS is primarily facilitated through rewards, PSS is conveyed

through individual well-being-focused actions, appreciation, and recognition. In an era in which tangible rewards are highly valued, organizational members may perceive supervisor support as less important or less influential, leading to the absence of mediating effects.

This study has several limitations. First, the findings cannot be generalized as the data were collected from a limited number of hospitals in the S region, and participants were selected through convenience sampling. Second, there is a possibility that the diversity in missions and welfare systems among the participating medical institutions may have influenced POS. Third, as the PSS is frequently acknowledged over the long term, the analysis did not cover the duration of the association with supervisors.

CONCLUSION

This study empirically identified (1) the importance of increasing OCB to prevent nurses' TI and (2) the mediating effect of POS on the relationship between OCB and TI. Therefore, measures designed to prevent TI should enhance OCB and POS.

Based on these results, we propose the following hypotheses: First, additional studies are necessary to examine the factors affecting nurses working in other medical institutions, such as national hospitals, corporate hospitals, and university hospitals. Second, additional studies are needed to develop, apply, and verify the effects of programs designed to increase nurses' OCB. Third, realistic improvements at the organizational level are required to increase POS, such as fair treatment, enhanced awards or working conditions, and improved wages or promotion systems.

High-quality nursing contributes significantly to organizational performance, and the nursing workforce, a hospital's largest human resource, should be carefully preserved. Nursing organizations with high turnover rates should adopt a strategic approach to bolster OCB and POS. As demonstrated by the results, nursing managers should enhance nurses' OCB and implement it to reduce TI by increasing POS. This study provides basic data for nursing managers to establish specific strategies and measures to manage nurses' TI.

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