

Analysis of Turnover Intention and Influencing Factors of Nurses in the Operating Room

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Abstract: Objective: To analyze the turnover intention and influencing factors of nurses in operating room. Methods: From January 2018 to December 2018, 65 on-the-job nurses in the operating room of our hospital were selected as the research objects, and their general situation, turnover intention scale and Psychological Resilience Scale were investigated. Through investigation, single factor analysis was carried out on the turnover intention of operating room nurses, and the correlation between turnover intention and psychological resilience was analyzed. The influencing factors of turnover intention of operating room nurses were analyzed by multifactor *logistic* stepwise regression analysis. Result: (1) Univariate analysis of turnover intention of operating room nurses showed that there were significant differences in turnover intention scale scores of operating room nurses in different age, working years, monthly income, satisfaction with shift scheduling and hospital attention groups (all $P < 0.05$). (2) The total score of each dimension of psychological resilience was negatively correlated with turnover intention (all $P < 0.05$). (3) Through multivariate logistic stepwise regression analysis, age, length of service, monthly income, satisfaction with shift scheduling and hospital attention were independent influencing factors of turnover intention of operating room nurses (all $P < 0.05$). Conclusion: Operating room nurses have a high turnover tendency. Hospital nursing managers pay enough attention to it, and take appropriate management measures to improve the psychological resilience of nurses, reduce turnover behavior, and ensure the stability of the operating room nurses team.

1. Introduction

Turnover intention, or intent to quit, refers to the possibility of an individual changing his/her job in a certain period of time. It is an antecedent variable of turnover and an important predictor of employee turnover behavior. Prior studies have found that turnover intention can better show the actual management quality of the organization compared with turnover behavior [1]. In recent decades, with rapid development of surgical technology, the type and scope of surgery have been broadened, and consequently the working pressure of nurses in the operating room has increased significantly. Under the high-intensity, high-pressure, high-demand, long-term and irregular working conditions, nurses in the operating room are prone to face occupational stress, mental health and other problems, resulting in turnover intention, waste of human resources in the operating room, as well as lack of work quality and safety management in the operating room[2]. In order to further guarantee the management quality of nurses in the operating room and establish a healthy and harmonious medical working environment, the present study was carried out to investigate 65 on-the-job nurses in the operating room within our hospital from January 2018 to December 2018. By understanding the turnover intention of those nurses and analyzing the relevant factors, it may

facilitate to provide favorable reference for stabilizing the nurse team and enhancing the nursing service in the operating room.

2. Materials and Methods

2.1 General data

From January 2018 to December 2018, 65 on-the-job nurses in the operating room of our hospital were selected as the subjects of study, including 8 males and 57 females, aged 22-48 years with an average age of (36.5±5.3) years, and working for 1~26 years with an average age of (10.5±3.3) years. Of the 65 subjects, there were 15 unmarried and 50 married, 5 associate chief nurses, 10 supervisor nurse, 22 nurse practitioners, and 28 nurses, 27 college students and 38 undergraduates and above. Inclusion criteria were described as follows: Nurses who have obtained training qualification certificates for specialist nurses in the operating rooms; on-the-job nurses; and nurses surveyed voluntarily cooperated with the study.

2.2 Methods

(1) Methods of investigation. Questionnaires were sent out to 65 nurses in the operating room by professional investigators who had received unified training. The questionnaire was filled out with unified instructions and retrieved on the spot. In this study, 65 questionnaires were sent out and 65 were retrieved, with an effective recovery rate of 100%. (2) Content of investigation. ① General information: General information includes gender, educational level, working life, marital status, professional title, status of specialized training, etc. ② Turnover Intention Scale[3]: The scale includes three dimensions and six items, of which Items 1 and 6 were the possibility of leaving; Items 2 and 3 were the reasons for finding other jobs; Items 4 and 5 were the possibility of obtaining other jobs. Likert 4-level reverse scoring method was used in the turnover intention scale, of which ≤6 points indicated quite low turnover intention; 6-12 points were low turnover intention; 13-18 points were high turnover intention; and 18 points were extremely high turnover intention. The score was positively correlated with the degree of the turnover intention in the subjects. Cronbach's α coefficient was 0.77 after cross-cultural debugging of the Chinese version of the turnover intention scale. ③ Psychological Resilience Scale[4]: The scale was compiled by American psychologists Davidson and Connor, including 25 items of optimism, strength and tenacity. Each item of the scale was scored by Likert 5-grade method. The "all-in-line" and "all-out-of-line" scored from 5 to 1 points respectively, with a full score of 0-125 points. A higher score revealed a better psychological resilience. The Cronbach's α coefficient of the Psychological Resilience Scale was 0.91.

2.3 Observational indexes

(1) The turnover intention of nurses in the operating room was analyzed by univariate analysis. (2) Further analysis was made concerning the correlation between turnover intention and psychological resilience of nurses in the operating room. (3) Multivariate *Logistic* stepwise regression analysis was used to analyze the influencing factors of turnover intention of nurses in the operating room.

2.4 Statistical analysis

SPSS20.0 software was used to process the data involved in the study. The counting data were expressed as [percentage (%) and number of cases (n)], and the measurement data were expressed as ($\bar{x} \pm s$). t test and chi-square test were involved to compare the results in accordance with normal distribution, and rank sum test was used for data without normal distribution. Pearson correlation analysis was applied to identify the correlation of turnover intention and psychological resilience of nurses in the operating room. Multivariate logistic stepwise regression analysis was used to analyze the influencing factors of turnover intention of nurses in operating room, and the test level was $\alpha=0.05$

3. Results

3.1 Univariate analysis of turnover intention of nurses in the operating room

As shown in Table 1, univariate analysis of turnover intention of nurses in the operating room showed that there were significant differences in turnover intention scale scores of nurses in the operating room in different age, working years, monthly income, scheduling satisfaction and hospital attention (all $P < 0.05$).

Table 1 Univariate analysis of turnover intention of nurses in the operating room

Items	Cases	Percentage (%)	Turnover intention scale score (points)	<i>F/t</i>	<i>P</i>
Gender	Male	8	12.31	14.5±3.5	0.526 >0.05
	Female	57	87.69	14.0±3.6	
Age	22~29 years old	22	33.85	14.8±3.5	6.856 <0.05
	30~39 years old	28	43.08	14.6±3.5	
	40~48 years old	15	23.08	10.2±5.0	
Working life	1~4 years	11	16.92	14.8±3.5	6.785 <0.05
	4~9 years	12	18.46	14.6±3.2	
	10~14 years	20	30.77	14.3±3.0	
	>15 years	22	33.85	10.5±3.0	
Marital stature	Unmarried	15	23.08	13.0±3.2	0.523 >0.05
	Married	50	76.92	12.9±3.3	
Monthly income	<4000 yuan	10	15.38	15.5±3.6	4.085 <0.05
	4000~5000 yuan	32	49.23	14.0±2.3	
	5001~6000 yuan	12	18.46	13.8±2.0	
	>6000 yuan	8	12.31	10.8±2.2	
Professional titles	Nurse	28	43.08	13.6±2.3	0.856 >0.05
	Nurse practitioner	22	33.85	13.5±3.0	
	Supervisor nurse	10	15.38	13.2±2.8	
	Associate chief nurse	5	7.69	13.0±2.8	
Educational level	Junior college	27	41.54	13.5±1.3	0.485 >0.05
	Bachelor degree or above	38	58.46	13.4±1.5	
Scheduling satisfaction	Satisfied	47	72.31	12.0±3.0	5.085 <0.05
	Unsatisfied	18	27.69	15.0±2.6	
Hospital attention	Great attention	12	18.46	12.0±2.2	5.623 <0.05
	General attention	40	64.54	13.8±2.0	
	No attention	13	20.00	15.0±2.0	

3.2 The correlation between turnover intention and psychological resilience of nurses in the operating room

In the correlation analysis of turnover intention with the score of each dimension of psychological resilience and total scores of nurses in the operating room, the results showed that the total score of each dimension of psychological resilience was negatively correlated with turnover intention (all $P < 0.05$; **Table 2**).

Table 2 The correlation between turnover intention and psychological resilience of nurses in the operating room

Dimensions	Scores ($\bar{x} \pm s$)	Turnover intention	
		<i>r</i>	<i>P</i>
Optimism	65.5±3.3	-0.085	<0.05
Strength	23.6±3.6	-0.065	<0.05
Tenacity	50.3±5.3	-0.132	<0.05
Total score	96.2±14.0	-0.135	<0.05

3.3 Multivariate Logistic stepwise regression analysis of multiple factors affecting turnover intention of nurses in the operating room

Age, working life, monthly income, scheduling satisfaction, hospital attention and psychological resilience were assessed as the independent variable in the first step, with age ranged 22~29 years old = 1, 30~39 years old = 2, 40~48 years old = 3; working life ranged 1~4 years = 1, 4~9 years = 2, 10~14 years = 3, ≥15 years = 4; monthly income <2000 yuan = 1, 2000~4000 yuan = 2, 4001~6000 yuan = 3, >6000 yuan = 4; dissatisfaction with scheduling = 1, satisfaction = 2; psychological resilience <50 points = 1, 50-100 points = 2, and >100 points = 3. Multivariate *Logistic* stepwise regression analysis was performed with turnover intention scale as the independent variable in the second step. As described in **Table 3**, age, working life, monthly income, scheduling satisfaction, hospital attention and psychological resilience were independent influencing factors of turnover intention for nurses in the operating room (all *P* < 0.05).

Table 3 Multivariate *Logistic* stepwise regression analysis of influencing turnover intention of nurses in the operating room

Independent variable	Regression coefficient	Standard error	Standardized regression coefficient	<i>t</i>	<i>P</i>
Age	-0.420	0.155	-2.750	6.523	<0.05
Working life	-0.553	0.208	-2.653	5.623	<0.05
Monthly income	-0.502	0.186	-2.453	4.265	<0.05
Scheduling satisfaction	-0.750	0.355	-1.952	6.660	<0.05
Hospital attention	-0.652	0.252	-2.020	5.856	<0.05
Psychological resilience	-0.605	0.285	-2.120	6.262	<0.05

4. Discussion

In recent decades, with gradual development of medical and health undertakings in our country, people's demand for clinical nursing services is rising at the same time. However, under such condition of shortage of nursing human resources, the loss of nurses tends to increase, which has become a common and difficult issue in hospital management [5]. Nurses in the operating room are a quite special group. They are mainly responsible for the rescue, surgery and other related nursing work of critically ill patients, whose work content is significantly featured by high pressure, long working hours, irregular scheduling, heavy responsibility and strong emergency response. The operating room has become the main department showing the loss of human resources of hospital nurses.[6]. At present, increasingly more scholars have emphasized on the study of occupational stress, mental health and occupational protection of nurses in the operating room, but few studies have been reported on the study of turnover intention of nurses in the operating room. In this study, an investigation was carried out by involving 65 on-the-job nurses in the operating room within our hospital. By understanding the turnover intention of such population and analyzing the relevant

factors, it can provide beneficial reference for stabilizing nurses team and enhancing nursing service in the operating room.

In this survey, there were significant differences in the scores of turnover intention scale among nurses in the operating room of different ages, working life, monthly income, scheduling satisfaction and hospital attention (All $P < 0.05$). Meanwhile, multivariate *Logistic* stepwise regression analysis supported that age, working life, monthly income, scheduling satisfaction and hospital attention were independent influencing factors of turnover intention of nurses in the operating room (All $P < 0.05$). In view of the possible reasons, it may be related to the following aspects. Firstly, the age of nurses is negatively correlated with the score of turnover intention scale, namely, a lower possibility of turnover behavior. Young nurses are the main group of nursing work in the operating room. Under the circumstances of relative lack of experience, low income, unreasonable shift scheduling and low recognition, young nurses still need to face high-intensity work tasks, resulting in relatively higher turnover intention inevitably [7]. With the increase of age, the income level of nurses in operating room rises with decreased intensity of work, reduced possibility of obtaining other jobs and the lack of competition and other advantages, thus reducing the turnover intention. In this regard, nursing managers should focus on young nurses, implement performance appraisal system in an all-round way, flexible scheduling and rational allocation of human resources to alleviate the work pressure in the population. Secondly, the turnover intention of nurses in the operating room who have worked for over 15 years has been significantly reduced, which is consistent with some previous studies [8-9]. The reason may be that with continuous accumulation of nurses' working experience in the operating room, the nurses' self-identity is further enhanced and their working status is relatively stable, resulting in lower probability of turnover intention [10]. Accordingly, in order to reduce the turnover of nurses with short working years, nursing managers can adopt hierarchical management strategy, strengthen the support and recognition of the work of nurses with low working years and young age, and provide technical guidance by experienced nurses, so as to improve their professional ability, establish good interpersonal relationship and create a harmonious working atmosphere. Thirdly, the development of nursing team in operating room is closely related to hospital training and attention. As an important adjustable factor, hospital attention should be paid full attention to by nursing managers. For example, enough promotion opportunity, as well as education and training opportunities can be provided for nurses in the operating room, so as to encourage constant exhibition of self-worth, improve self-identity and psychological professional sense of belonging, thus reducing turnover intention. In addition, the level of psychological resilience of nurses in the operating room can affect individual work adaptability, team cooperation and interpersonal relationship in working environment. In the absence of active control of pressure caused by working environment, it will affect their physical and mental health, and even lead to departure and leaving of nurses [11]. Currently, it has been recognized that psychological resilience is a process of stimulating internal psychological traits and cognitive abilities, mobilizing internal and external resources to actively repair and adjust the mechanism when facing external pressures, so as to obtain the ability process and results of positive goals [12]. Furthermore, there are few studies on resilience in turnover intention of nurses in the operating room. Results in this study showed that the total scores of each dimension of psychological resilience in 65 operating room nurses were negatively correlated with turnover intention (All $P < 0.05$). Besides, multivariate *Logistic* stepwise regression analysis found that psychological resilience was an independent influencing factor of turnover intention of nurses in the operating room ($P < 0.05$). As for its cause, nurses in the operating room have been in a high-intensity and fast-paced working environment for a long time, accompanied by heavy responsibilities and workload, as well as high mental stress. Simultaneously, this group also needs to have team spirit to deal with complex interpersonal relationships such as anesthesiologists, surgeons and patients. In the absence of good psychological resilience, nurses will be unable to do the job successfully to induce turnover intention subsequently. Accordingly, hospital nursing managers should pay much attention to strengthening the psychological resilience of nurses in the operating room while improving the construction of departments, so as to ensure the stability of nurse team in the operating room and reduce the loss of high-quality talents.

To sum up, nurses in operating room have high turnover intention. Hospital nursing administrators should pay sufficient attention to the proposed issue in our study, and take appropriate management measures to improve psychological resilience of nurses, reduce turnover behavior and ensure the stability of nurse team in the operating room.

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