The relationship between workplace violence, job satisfaction and turnover intention in emergency nurses

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ABSTRACT

Background: Emergency department personnel are exposed to high risk of workplace violence (WPV) and nurses are the main victims. Few researchers have investigated the effects of WPV on job satisfaction and turnover intention among nurses.

Aims: To describe WPV, job satisfaction and turnover intention of emergency nurses and clarify the relationship between them.

Methods: A cross-sectional study was used to collect data on WPV, job satisfaction and turnover intention among 385 nurses working in emergency department in 13 general hospitals in Beijing. Structural equation modeling was used to test the relationship between them.

Results: Among them, 89.9% had experienced WPV in the previous year. WPV had short-term and long-term impacts on over 80% of them. The score of job satisfaction and turnover intention was 2.48 ± 0.49, 2.75 ± 0.58 respectively. WPV had significant direct effect on turnover intention ($\beta = 0.105$) and job satisfaction ($\beta = -0.161$). Job satisfaction had a significant negative effect on turnover intention ($\beta = -0.604$) and it mediated the relationship between WPV and turnover intention.

Conclusion: Emergency nurses in China are at great risk of WPV. Their job satisfaction is low and turnover intention is high. Job satisfaction plays the mediator role between WPV and turnover intention among emergency nurses.

1. Introduction

Workplace violence (WPV) is a global problem affecting all healthcare professionals [1]. The World Health Organization (WHO) defined that workplace violence is any situation in which the person is the subject of abuse, threats or attacks in circumstances related to their work or professional activity, having their safety, well-being or health threatened explicitly or implicitly [2]. A research showed that more than 50% of health care personnel had experienced at least one incident of physical or psychological violence in the previous year [3]. Nurses are the main victims of WPV [4]. According to a literature review of WPV among nurses, one-third had experienced physical violence and two-thirds had experienced verbal violence in the previous year [5]. The problem of WPV in emergency department was more prominent due to the particularity of emergency [6]. Two systematic reviews of WPV concluded that emergency department personnel were exposed to

high risk of physical and verbal abuse [6,7]. Many factors contributed to the high prevalence of WPV in emergency department, such as crowded surroundings, high-stress, service delays due to heavy work tasks, limited communication, contacting directly with potentially aggressive people and so on [8,9]. According to a systematic review of WPV, experiencing of WPV can cause fear, anxiety, nervousness, demoralization, psychological strain, sensitization, mental exhaustion, and even reduced job satisfaction [6].

Job satisfaction is the degree of affect toward a job and its main components and it is considered to be a positive concept describing work behaviors [10]. Factors affecting job satisfaction were job stress, working conditions, role conflicts, organizational environment and so on [11,12]. Previous researchers showed that nurses' job satisfaction had an impact on their intention to quit and turnover; there was a negative correlation between them [13,14].

Turnover intention is defined as the probability that an employee

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will leave his or her job within a certain time period [15]. Turnover intention has been widely shown to be an important, practical antecedent variable of turnover and is the best predictor of actual turnover behavior [16]. So it's more cost-effective for nursing managers to investigate turnover intention than actual turnover [17]. According to previous researchers, factors influencing turnover intention of nurses were mainly focused on nurses' age, educational background, job satisfaction, job stress, burnout, and organizational commitment [18,19]. As regarding to the theoretical model of turnover intention, job satisfaction was the main factor, which provided sufficient support to the hypothesis that turnover intention was preceded by job satisfaction [20,21]. Moreover, new research identified that nurses' turnover intention was also influenced by WPV [22]. According to a survey of general nurses in Korea, WPV was positively associated with turnover intention [22]. Another study in Korea showed over half of emergency nurses who experienced WPV had intention to leave [23].

Although there are numerous studies investigating the effects of WPV on job satisfaction or the effects of job satisfaction on turnover intention among nurses, researchers investigating the effects of nurses' WPV on job satisfaction and turnover intention were rare, especially among nurses working in emergency department. A recent study in China indicated that WPV was negatively correlated with nurses' job satisfaction and thriving at work, and WPV was positively correlated with nurses' turnover intention. Job satisfaction was negatively correlated with turnover intention, and mediated the relationship between WPV and turnover intention [24]. But whether the results apply to emergency nurses is not known. The purpose of this study was to describe WPV, job satisfaction and turnover intention of emergency nurses and explore the effects of WPV on turnover intention, as mediated by job satisfaction. We proposed the hypothesis: (a) WPV was negatively correlated with job satisfaction and positively correlated with turnover intention among nurses working in emergency department; (b) job satisfaction was negatively correlated with turnover intention; and (c) job satisfaction mediated the relationship between WPV and turnover intention (Fig. 1).

2. Methods

2.1. Study design

This is a cross-sectional study, using self-administered questionnaire to collect data on emergency nurses' WPV, job satisfaction and turnover intention.

2.2. Participants

With the method of convenience sampling, registered nurses working in emergency department in 13 general hospitals in Beijing were invited to participate in this study. Inclusion criteria were as follows: (a) had worked more than one year in emergency department; (b) had direct contact with patients during the daily work; and (c) consented to participate. Exclusion criteria were as follows: (a) nurses who were still on probation and (b) nurses who were on sick leave,

maternity leave, annual leave or study outside during the investigation. There were 415 potentially eligible emergency nurses, so 415 questionnaires were distributed and 401 questionnaires were returned. Eventually 385 questionnaires were eligible for analysis; effective response rate was 92.8%.

2.3. Measurements

2.3.1. Demographic characteristics of emergency nurses

Questionnaire on demographic characteristics of emergency nurses was used, which included age, gender, marital status, educational level, years of working in hospital, years of working in emergency department.

2.3.2. Workplace violence

Questionnaire on frequency of workplace violence in hospitals was used to measure the WPV. It was developed by Chen et al. [25] in 2004 according to the WHO documents on WPV, and modified by Yang [26] in 2008. The Cronbach's alpha of the total scale is 0.890 [26]. We use one section of it in this study. It contained 4 questions on verbal attack, threats, physical attack and sexual harassment. Each question was divided into 4 grades based on the frequency of violence experienced in the previous year: none, once, 2–3 times and more than 3 times, scored from 0 to 3, respectively. If a verbal attack develops into a physical attack, it's considered as once verbal attack, as well as once physical attack. The total score of the scale is sum of the scores of each question. And the frequency of WPV was divided into four grades: zero (scored 0), low frequency (scored from 1 to 4), moderate frequency (scored from 5 to 8), high frequency (scored from 9 to 12), with high score indicating high frequency of WPV. In this study, the Cronbach's alpha was 0.659. Moreover, we investigated the short-term and long-term impacts of WPV on emergency nurses.

2.3.3. Job satisfaction

Job satisfaction was measured using the McCloskey/Muller Satisfaction Scale (MMSS) developed by McCloskey and Mueller [27]. MMSS is particularly used for measuring nurses' job satisfaction and it involves 31 items on 8 dimensions: extrinsic rewards, scheduling, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility. It measured on a five-point Likert scale from 1 'very disappointed' to 5 'very satisfied', with high score indicating high job satisfaction. Job satisfaction was considered to be low if the average score of the total scale is less than 3.03 [28]. The content validity index (CVI) of each item in the Chinese version of MMSS ranges from 0.80 to 1.0, the average CVI of all items is 0.95. The Cronbach's alpha of the total scale is 0.95, and the Cronbach's alpha of each dimension is 0.64–0.89 [28]. In this study, the Cronbach's alpha was 0.919.

2.3.4. Turnover intention

Turnover intention was assessed with six item Turnover Intention Tool developed by Michaels and Spector [29], and the Chinese version was modified by Lee et al. [30]. It contained 6 questions on 3 dimensions, turnover intention I, turnover intention II, and turnover intention III. Turnover intention I indicates the possibility of resignation from the present job. Turnover intention II indicates the motivation to seek other jobs. Turnover intention III indicates the possibility of obtaining an external job. Scores of items in this four-point Likert scale range from 1 'never' to 4 'often', with high score indicating high turnover intention. The average score of the total scale equal to 1 indicates a very low level of turnover intention, 1.1–2 indicates a low level, 2.1–3 indicates a high level and being greater than 3 indicates a very high level of turnover intention [30]. The Cronbach's alpha for the tool was 0.893 and the content validity was 0.677 [30]. In this study, the Cronbach's alpha was 0.778.
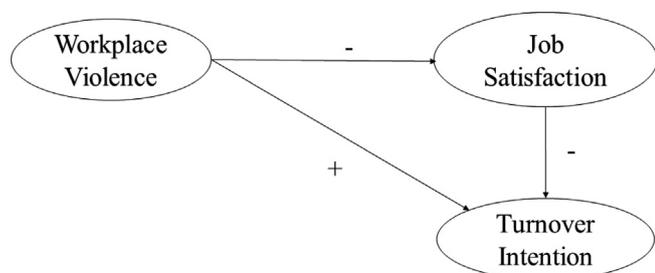

Fig. 1. Hypothetical model.

2.4. Data collection

This study was approved by the scientific research office and nursing department of the hospital where the data collector worked, and granted by other hospitals. It was carried out in emergency departments of 13 general hospitals in Beijing from Feb. to Oct. 2014. All registered nurses working in these emergency departments were informed confidentiality and purpose of this study using uniform instruction. The self-administered questionnaires were distributed after written informed consents were obtained from the participants. Items difficult to understand were explained by the researcher to ensure consistency in interpretation of each item. All the questionnaires were filled out independently and collected on the spot.

2.5. Statistical analysis

IBM SPSS 20.0 was used for data analysis. Descriptive statistics were used for presenting demographic characteristics, WPV, job satisfaction and turnover intention of emergency nurses. Spearman's Pearson's correlation analysis was used for exploring the relationship between WPV, job satisfaction and turnover intention. The *p* value < 0.05 was considered statistically significant. Structural equation modeling (SEM) with Analysis of Moment (AMOS) 21.0 was used to test the hypothesis. Model parameter estimation used the maximum likelihood method. The ratio of cases to model parameters for SEM is recommended more than 10:1 [31]. In this study 385 cases were available to test a model with 9 parameters for a ratio of 43:1, which was acceptable. The model fit indices were as follows: χ^2 (Chi-square), *df* (degrees of freedom), *p* (probability level), GFI (goodness-of-fit index), AGFI (adjusted goodness-of-fit index), IFI (incremental fit index), RMSEA (root mean square error of approximation), NFI (normed fit index) and RMR (root mean square residual).

3. Results

3.1. Demographic characteristics of emergency nurses

Emergency nurses' demographic characteristics are presented in Table 1. An overwhelming amount of emergency nurses were female (94.3%). The average age was 29.6 ± 6.0 years and the median years of working in hospital and of working in emergency department were 9.0 and 7.6, respectively. Most nurses held associates degree or above (92.2%).

Table 1
Demographic characteristics of emergency nurses (n = 385).

Variable		n	%	Mean/Median	SD/IQR	Range
Age				29.6	6.0	20–48
Gender	Female	363	94.3			
	Male	22	5.7			
Marital status	Unmarried	166	43.1			
	Married	219	56.9			
Educational level	Diploma	30	7.8			
	Associates degree	215	55.8			
	Bachelor degree	140	36.4			
Working in hospital (years)				9.0	6.1	1–27
Working in ED (years)				7.6	5.1	1–20

Note: ED = emergency department.

3.2. Workplace violence among emergency nurses

The frequency of WPV experienced by emergency nurses is zero (10.1%), low frequency (38.2%), moderate frequency (49.9%) and high frequency (1.8%). As presented in Table 2, of the 385 emergency nurses, 346 (89.9%) had experienced WPV within the previous year. The prevalence of verbal attack, threats, physical violence and sexual harassment was 89.9%, 70.6%, 20.5% and 3.9% respectively. Verbal attack was the most common type. Among them, 61.0% had experienced verbal attack more than 3 times.

The impacts of WPV on emergency nurses are presented in Table 3. WPV had short-term impacts on 94.8% of emergency nurses who experienced WPV, and long-term impacts on 81.5% of them. The 4 most reported short-term impacts were angry, aggrieved, reduced work enthusiasm and intention to quit. The 4 most reported long-term impacts were reduced work enthusiasm, angry, intention to quit and aggrieved.

3.3. Job satisfaction and turnover intention

The job satisfaction and turnover intention of emergency nurses are presented in Table 4. The average score of job satisfaction of emergency nurses (2.48 ± 0.49) was below 3.03, indicating that emergency nurses' job satisfaction was low. Dimensions of co-workers was rated highest, followed by praise/recognition, while extrinsic rewards were scored lowest and followed by scheduling. The average score of turnover intention was 2.75 ± 0.58, indicating that emergency nurses had a high level of turnover intention. Turnover intention III (the possibility of obtaining an external job) was at a very high level.

3.4. Correlations of major study variables

The correlations of major study variables among emergency nurses are presented in Table 5. Most of the variables are correlated with each other except turnover intention III (the possibility of obtaining an external job), hence turnover intention III is not included in model testing.

3.5. Test of the hypothesized model

The result showed good model fit (Fig. 2, χ^2 < 0.001, *p* = 0.984, *df* = 1, GFI = 1.000, AGFI = 1.000, IFI = 1.003, RMSEA < 0.001, NFI = 1.000, RMR < 0.001, R^2 = 0.397).

3.6. Effect estimates

Effect estimates of the hypothesized model are presented in Fig. 2 and Table 6. WPV had a significant positive direct effect on turnover intention (β = 0.109, *p* = 0.013) and a significant negative direct effect on job satisfaction (β = −0.193, *p* = 0.001). Job satisfaction had a significant direct negative effect (β = −0.600, *p* = 0.001) on turnover intention. WPV had a small indirect positive effect on turnover intention through job satisfaction (β = 0.116, *p* = 0.001). The model explained 39.7% of the variances of turnover intention.

4. Discussion

Overall, the results provide enough support for the hypothesized model on the relationship between WPV, job satisfaction and turnover intention. And our sample is large enough to test the hypothesis.

4.1. Workplace violence was frequent in emergency nurses and it had short-term and long-term impacts

In this study, 89.9% of 385 emergency nurses in 13 general hospitals in Beijing had been attacked by WPV in the previous year, the prevalence of WPV in our study appeared to be higher than 65.8% in national survey of nurses from 16 provinces in China [32], and

Table 2
Prevalence of emergency nurses' WPV (n = 385).

Frequency	Verbal attack		Threats		Physical violence		Sexual harassment	
	n	%	n	%	n	%	n	%
0	39	10.1	113	29.4	306	79.5	370	96.1
1	31	8.1	50	13.0	45	11.7	14	3.6
2–3	80	20.8	55	14.3	34	8.8	0	0
> 3	235	61.0	167	43.4	0	0.0	1	0.3

Table 3
Impact of WPV on emergency nurses (n = 346).

	Short-term				Long-term			
	Yes		No		Yes		No	
	n	%	n	%	n	%	n	%
Feel angry	292	84.4	54	15.6	139	40.2	207	59.8
Feel aggrieved	288	83.2	58	16.8	103	29.8	243	70.2
Reduced work enthusiasm	236	68.2	110	31.8	144	41.6	202	58.4
Intention to quit	176	50.9	170	49.1	126	36.4	220	63.6
Feel scared	154	44.5	192	55.5	83	24.0	263	76.0
Unable to concentrate	118	34.1	228	65.9	7	2.0	339	98.0
Hate patients	101	29.2	245	70.8	59	17.1	287	82.9
Reduced work quality	83	24.0	263	76.0	23	6.6	323	93.4
Insomnia	48	13.9	298	86.1	30	8.7	316	91.3

Table 4
Mean, standard deviation, minimum and maximum of job satisfaction and turnover intention (n = 385).

	Mean	SD	Min	Max
Job satisfaction	2.48	0.49	1.52	4.13
Co-Workers	3.69	0.50	2.33	5.00
Praise/Recognition	3.38	0.51	2.00	5.00
Control/Responsibility	2.50	0.73	1.00	4.50
Professional opportunities	2.42	0.69	1.00	4.25
Interaction	2.30	0.73	1.00	4.00
Family/Work balance	2.20	0.84	1.00	4.50
Scheduling	1.96	0.76	1.00	4.14
Extrinsic rewards	1.93	0.68	1.00	3.67
Turnover intention	2.75	0.58	1.00	3.83
Turnover intention I	2.70	0.78	1.00	4.00
Turnover intention II	2.53	0.70	1.00	4.00
Turnover intention III	3.01	0.60	1.00	4.00

Table 5
Correlations of major study variables (n = 385).

Variable	1	2	3	4	5
1. WPV	1.000				
2. JS	−0.193**	1.000			
3. TI I	0.200**	−0.551**	1.000		
4. TI II	0.147**	−0.405**	0.579**	1.000	
5. TI III	−0.010	−0.219**	0.572**	0.516**	1.000

Note: WPV = workplace violence; JS = job satisfaction and TI = turnover intention.
*p < 0.05, **p < 0.01 (2-tails).

consistent with 88.33% in emergency nurses in Taiwan [33], indicating that the prevalence of emergency nurses' WPV in China is very high. Of them, 89.9% had experienced verbal attack at least one time, which is higher than 64.9% in national survey in China [32]. Most of them experienced verbal attack more than 3 times. The prevalence of physical violence is 20.5% in our study, it's higher than 11.8% in national survey in China [32]. So, we can conclude that verbal attack is the most common types of violence, followed by threats. At present, workplace

violence in emergency departments has become a common phenomenon, according to systematic reviews by Pourshaikhian et al. [6], about 53%–90% of emergency nurses had experienced WPV, our research also showed emergency nurses in China were at high risk of WPV, especially verbal attack.

WPV not only causes physical harm to nurses, it also leads to a series of post-traumatic reactions. Our research found the 4 most reported short-term impacts of WPV were: felt angry (84.4%), felt aggrieved (83.2%), reduced work enthusiasm (68.2%) and intention to quit (50.9%). And the 4 most reported long-term impacts remain the same, indicating that these are the main impacts and will last a long time. But the rankings changed a bit, reduced work enthusiasm and intention to quit were ranked second and third, respectively. The reason may be that most emergency nurses experience more than three times of verbal attack a year, and repeated verbal attack tends to dispel nurses' emotional response such as angry or aggrieved, but it can lead to reduced work enthusiasm or job satisfaction, even intention to quit [23]. Therefore, attention should be payed to the short-term and long-term impacts of WPV and provide appropriate assistance to counter these negative influences, such as strengthening nurses' psychological guidance and improving their ability of foresight and coping.

4.2. Emergency nurses had a low level of job satisfaction

In our research, emergency nurses' job satisfaction was at a low level (2.48 ± 0.49), which is significantly lower than study by Christopher et al. [34] (3.55 ± 0.62) in Australia. In terms of dimension, only co-workers and praise/recognition scored over 3.03, while extrinsic rewards and scheduling scored low. While in study by Christopher et al. [34], all dimensions scored over 3.03, scheduling, co-workers scored high and professional opportunities scored low. Considering the ranking of scores in different domains of job satisfaction, our results were very similar to study of nurses in Beijing, with co-workers scoring highest and extrinsic rewards scoring lowest [35]. While another study found that nurses in Switzerland were more satisfied with their salaries [36], which was opposite to our results. In view of that nurses in emergency department in China are less satisfied with their jobs, it is suggested that nursing managers should pay attention to all dimensions of job satisfaction, especially extrinsic rewards and scheduling, and take effective measures to improve emergency nurses' satisfaction, such as improving salaries, insurance or pension, implementing flexible scheduling and paid holiday.

4.3. Emergency nurses had a high level of turnover intention

Our research indicated that turnover intention was at high level, which appears to be higher than the level of registered nurses in study by Labrague et al. [18] in Philippines and the neutral intent of nurses in study by Christopher et al. [34] in Australia, indicating that emergency nurses in China have a relatively higher willingness to quit. Table 3 shows that the score of turnover intention III (the possibility of obtaining an external job) is higher than that of the other two dimensions, which is consistent with the findings of Wang [37]. The reason may be that nurses in emergency department have strong technicality and specialty, which means high selectivity in re-employment and
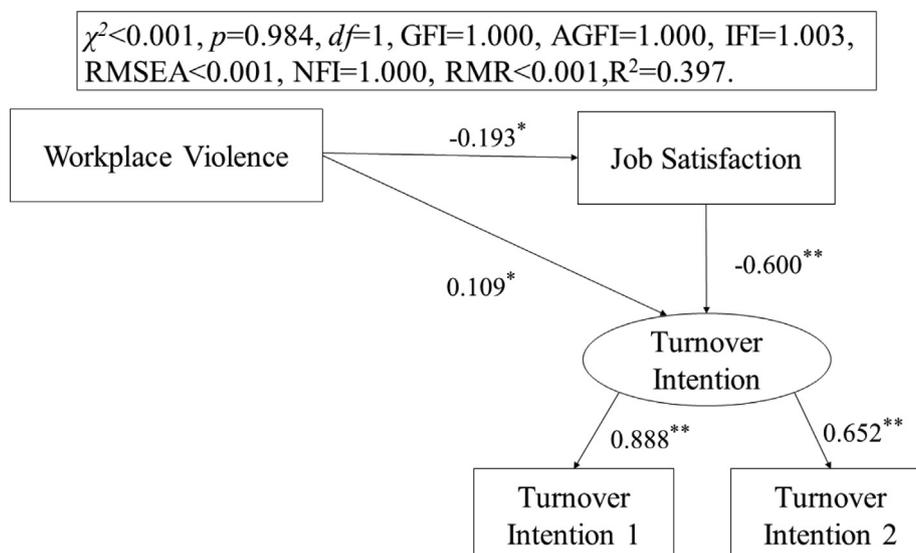
$$\chi^2 < 0.001, p=0.984, df=1, \text{GFI}=1.000, \text{AGFI}=1.000, \text{IFI}=1.003,$$
$$\text{RMSEA} < 0.001, \text{NFI}=1.000, \text{RMR} < 0.001, R^2 = 0.397.$$

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Workplace Violence  ──── -0.193* ────▶  Job Satisfaction

                    0.109*                      -0.600**

                            Turnover
                            Intention

                    0.888**              0.652**

          Turnover                  Turnover
          Intention 1               Intention 2
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Fig. 2. Final model (Job satisfaction played the mediator role between workplace violence and turnover intention) $^*p < 0.05$, $^{**}p < 0.01$ (2-tails).

Table 6
Effect estimates of the hypothesized model (Standardized coefficients).

Structural paths	Direct effects	Indirect effects	Total effects
WPV → JS	−0.193**	–	−0.193**
WPV → TI	0.109*	0.116**	0.225**
JS → TI	−0.600**	–	−0.600**

Note: WPV = workplace violence; JS = job satisfaction and TI = turnover intention.
$^*p < 0.05$, $^{**}p < 0.01$ (2-tails).

employment. Therefore, they have high possibility of obtaining external jobs. But their motivation to seek other jobs was low, which means that once nurses in emergency department adapted to their organization' work environment, interpersonal relationship and work processes, they really do not want to seek other jobs [37]. Nursing managers should recognize this and cherish the existing emergency nursing staff.

4.4. Job satisfaction played the mediator role between WPV and turnover intention

Fig. 2 indicates that the results provide enough support for our hypothesis. Our research found WPV among nurses working in emergency department was negatively correlated with job satisfaction and positively correlated with turnover intention, which are consistent with recent studies [22,24,38]. Our investigation of the short-term and long-term impacts of WPV on emergency nurses also found that quite a number of nurses reported reduced work enthusiasm and had intention to quit.

Our finding that emergency nurses' job satisfaction had a significant direct negative effect on their turnover intention is consistent with previous studies [20,21], indicating that the higher the level of job satisfaction, the lower the turnover intention. Moreover, our research also found job satisfaction played the mediator role between WPV and turnover intention among emergency nurses. This means the impact of WPV on turnover intention can be partially explained by job satisfaction. On one hand, experience of WPV can lead to increasing of turnover intention directly; on the other hand, experience of WPV can lead to decreasing of job satisfaction, which in turn leads to increasing of turnover intention. Although there is a high frequency of WPV on emergency nurses, if nursing managers could take measures to improve their job satisfaction, it can alleviate the negative impact of WPV on turnover intention.

5. Limitations

Some limitations need to be addressed. First, application of convenience sampling limits the generalization of these results due to potential selection bias and the representativeness of sample. Second, we used self-administered questionnaire to collect data on WPV among nurses working in emergency department in the previous year, some nurses may not remember exactly due to the long span of time, which may lead to recall bias. Last, our study is a cross-sectional investigation; it confines explanations of the causal relationship between WPV, job satisfaction and turnover intention.

6. Conclusions

Emergency nurses in China are at high risk of WPV, especially verbal attack. In addition, they have a low level of job satisfaction and a high level of turnover intention. Job satisfaction plays the mediator role between WPV and turnover intention among emergency nurses. In order to clarify the mechanisms of turnover intention resulting from WPV, further study should be conducted in-depth, such as how coping strategies used by emergency nurses who experienced WPV can affect their turnover intention. According to previous studies [23,39], when emergency nurses experienced WPV, they should be encouraged to resort to problem-focused coping methods to reduce turnover intention, such as reporting to nursing managers, seeking help from colleagues.

7. Implications for nursing management

According to our research, WPV on emergency nurses in China was frequent; nursing managers should pay attention to this phenomenon and take effective measures to prevent the prevalence of WPV. Secondly, emergency nurses had a low level of job satisfaction; therefore, nursing managers should establish a fair and reasonable compensation system to improve their job satisfaction. Additionally, the final model shows that job satisfaction plays the mediator role between WPV and turnover intention among emergency nurses. Therefore, we suggest reducing the turnover intention of emergency nurses by reducing WPV and improving their job satisfaction.

Acknowledgments

Conflict of interest statement

There is no conflict of interest.

Ethical statement

This study was approved by the scientific research office and nursing department of the hospital where the data collector worked, and granted by other hospitals. All participants were provided written informed consent before participation.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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