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Research on the resilience of Chinese nursing students to workplace vertical violence in clinical practice

Lingyun Tian[a,b], Ying Zhang[c], Xuejiao Li[b], Xingxing Li[d], Yifang Li[b], Li Ma[e], Yuehong Wu[b], Yinglan Li[a,*]

[a] Xiangya Nursing School, Central South University, Changsha, Hunan, China
[b] School of Nursing, Anhui University of Chinese Medicine, Hefei, Anhui, China
[c] Infection Control Centre, Xiangya Hospital, Central South University, Changsha, Hunan, China
[d] Personnel Division, Anhui University of Chinese Medicine, Hefei, Anhui, China
[e] School of Integrated Chinese and Western Medicine, Anhui University of Chinese Medicine, Hefei, Anhui, China

ABSTRACT

This study aimed to explore the status and influencing factors of workplace vertical violence for Chinese nursing students, and examine the relationship between the resilience and workplace vertical violence. Questionnaire survey was conducted with cluster sampling among 486 nursing students by demographic questionnaire, the Resilience Scale of University Students and Questionnaire on Nursing Students' Workplace Vertical Violence. The survey indicated that, 51.23% of nursing students have experienced workplace vertical violence; 64.3% of perpetrators were identified as assigned nurses; 65.46% and 59.44% of nursing students have respectively suffered from adverse psychological and physiological effect; and 66.67% of nursing students determined to work harder and get stronger afterwards. Besides, birthplace, education level, professional identity, sensitive personality, prior knowledge of workplace vertical violence experience before clinical practice, and resilience were the most important influencing factors of workplace vertical violence for Chinese nursing students ($p < 0.05$). Workplace vertical violence suffering from nurses is very common for nursing students in the clinical training. Although it has negative impacts on the psychology and physiology of nursing students, more nursing students can positively adjust themselves. Resilience plays a positive role in the nursing students' workplace vertical violence.

1. Introduction

Workplace violence refers to acts of physical aggression or psychological threat to people at work or work-related places. In addition to injuring human bodies, abuses, threats, and sexual harassments are also within the scope of violence. Vertical violence is a form of workplace violence, which refers to the violence between colleagues at different status in a hierarchical system, or violence by superiors to subordinates (Fudge, 2006; Listed, 2008; Martin and Stanley, 2011; Thomas, 2003), such as the nurse can conduct it to nursing students (Thomas and Burk, 2009). The term of workplace vertical violence is originated from horizontal violence (Thomas and Burk, 2009), which refers to intentional, unnecessary or unjustifiable act bestowed by one nurse to another colleague in the same status with intention to hurt, isolate, disparage, manipulate or sabotage (Hutchinson et al., 2006). Horizontal violence can be implicit and undetectable (such as hiding information or spreading gossip), and can also be explicit and direct (for example, criticizing when other staff members are present and false accusations) (Jackson et al., 2002). Nurse-to-nurse horizontal violence is common in clinical practice (Armmer and Ball, 2015; Li, 2011; Listed, 2014; Luciani et al., 2016; Myers et al., 2016; Parker et al., 2016; Purpora et al., 2014). It influences attrition by having negative effects on the emotional and physical conditions of the staff, quality of care, and patient safety (Spence Laschinger, 2009), decreasing staff productivity (Berry et al., 2012), and becoming a major obstacle in the recruitment and retention of nurses (Jackson et al., 2002).

Workplace vertical violence has long been referred to as the phenomenon of "nurses eating their young" (Longo, 2007), and student nurses are thought to be at the greatest risk for being the targets (Beech, 2001). Nurses often feel powerless in the hospital hierarchy and cannot receive supports from the hospital management (Thomas and Burk, 2009). As for nursing students, the situation may be even worse. Nursing students are particularly vulnerable because they are unfamiliar with the working environment, working system, and standards of hospitals (Andrews et al., 2005). What is more, nursing students lack of clinical and living experience, not proficient enough to acquire coping skills, and have the smallest power in the environmental hierarchy (Vessey et al., 2010). They are on the fringes of the dominant group of hospitals. These factors may make the student nurse more susceptible to the workplace vertical violence.

Workplace vertical violence experienced by student nurses has been studied in the United Kingdom, America, New Zealand, Turkey,

* Corresponding author.
E-mail address: yuyan0202@sina.com (Y. Li).

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Australia and Canada(Celik and Bayraktar, 2004; Curtis et al., 2007; Longo, 2007; Randle, 2003; Ünal and Hisar, 2012; Vallant and Neville, 2006). Nursing students witness and/or experience bullying at various frequencies in clinical practice, and most of perpetrators come from nursing staff and clinical instructors (Clarke et al., 2012). Four levels of injustice encountered by the nursing students have been pointed out: "We were unwanted and ignored", "Our assessments were distrusted and disbelieved", "We were unfairly blamed", "I was publicly humiliated". Most importantly, over half of nursing students (51%) indicated that violent behaviors have an impact on their choices of future career options (Curtis et al., 2007).

However, there is little research to investigate the incidence and effects of workplace vertical violence on Chinese nursing students. Besides, it is necessary to determine whether students in various educational settings and different cultural atmospheres experience workplace vertical violence at a different rate from their international colleagues. Moreover, previous studies mainly focus on the incidence, types, resources and reporting the prevalence of workplace vertical violence.

Resilience refers to the phenomenon or state that can be actively adjusted in the face of adversity (Masten and Powell, 2003). As a process of learning and moving forward from challenges and adversities, resilience is closely related to personal optimism, positive changes, hope, and adaptations (Cope et al., 2016). Considering the inherent stress of nursing environment, resilience is an important trait that nurses should possess (Cameron and Brownie, 2010). For nurses themselves, the resilience not only has an important help in achieving and maintaining professional self-efficacy and longevity in the labor force, but also has a significant impact on their physical health, mental well-being, and quality of life (Mcallister, 2013). Although there are separate studies on resilience and workplace vertical violence, there is still little research examine the impact of resilience on workplace vertical violence. Hence, it is meaningful to explore if and how resilience is relevant to workplace vertical violence of nursing students in clinical practice. More specifically, based on the perspective of resilience, this study intends to explore whether nursing students with different resilience have differences in the occurrence, treatment and effects of workplace vertical violence, and whether resilience can have a protective and positive impact on workplace verticle violence of nursing students.It is hoped that this paper can provide operational and constructive suggestions for the prevention and control of workplace vertical violence of nursing students in clinical practice.

2. Aims

To get a clearer understanding of workplace vertical violence in nursing students, this survey was conducted from the following aims.

- the incidence, types, perpetrators, departments, treatments and effects of workplace vertical violence experienced by nursing students.
- the relationship between resilience and treatments, effects of workplace vertical violence for nursing students.
- influencing factors of workplace vertical violence experienced by nursing students.

3. Methods

3.1. Study design and subjects

To obtain a clearer understanding of workplace vertical violence experienced by nursing students, this survey was conducted from the perspective of the incidence, types, perpetrators, departments, treatments and effects of workplace vertical violence. In this paper, the relationship between resilience and treatments, effects of workplace vertical violence, and influencing factors of workplace vertical violence were studied. Data were collected by cluster sampling investigation from a nursing school of a Chinese Medicine University in Hefei, Anhui Province, China. 524 nursing students who have finished their clinical practice (≥8 months) and returned to school were investigated in this study. Sample selection was not involved, since the entire population was targeted in this study. 524 questionnaires were distributed and 486 (92.75%) completed responses were returned. Thirty-eight students were absent in the data collection and excluded in this study.

3.2. Data collection instruments

Demographic Questionnaire The content of the questionnaire involved the age, gender, religion(i.e. whether you believe in religion or not), family structures, birthplace, education level, class service(i.e. whether to be a student cadre or not. This question to confirm the identity of the nursing student in the group, namely whether the nursing student is responsible for certain duties, and assists the management of classes and schools), professional identity (i.e. do you identify that the professional role of nursing is important and attractive?), sensitive personality(i.e. how sensitive do you think you are to people and things around you?), and prior knowledge of workplace vertical violence before clinical practice.

The Resilience Scale of University Students (RSUS) The RSUS developed by Yang (2005) was used to examine the resilience level of university students. There were 31 items from 6 dimensions in the RSUS, namely self-efficacy, self-acceptance, emotional stability, problem solving, the support from friends, the support from family. The scale score was measured by Likert grade 5 from extremely inconsistent (1 score) to extremely consistent (5 score). The obtained scores ranged from 31 to 155. The higher the total score is, the higher the level of resilience is.The reliability coefficient of the Cronbach's alpha was r = 0.8594 (Yang, 2005). In this study, the reliability coefficient of the tool's Cronbach's alpha was r = 0.892.

Questionnaire on Nursing students' workplace vertical violence The questionnaire was developed by the investigator based on the information in previous literature (Clarke et al., 2012; Li, 2011). It investigated the workplace vertical violence experienced by nursing students during their clinical practice in terms of the incidence, types, perpetrators, departments, treatments and effects. The design of types, perpetrators, departments and effects items are multiple choice questions. In this study, the reliability coefficient of tool's Cronbach's alpha was r = 0.971.

3.3. Procedure and ethical issues

This study has been approved by the institutional review committee of the first affiliated hospital of Anhui University of Chinese Medicine before the data collection. All study participants were assured verbally that their responses would be confidential and received written informed consent. 486 nursing students were present in the classroom during the data collection and agreed to participate in the study.

3.4. Data analysis

SPSS 13.0. statistical analysis software was used for data analysis. Descriptive statistics (percentage, mean, and standard deviation) were calculated to develop descriptive demographic data. Analysis of variance (*T/F* test) was used for group comparisons. Multivariate conditional logistic regression analysis was used to identify influencing factors of the incidence of workplace vertical violence ($\alpha_{enter} = 0.05$, $\alpha_{remove} = 0.10$). *P* value less than 0.05 was considered as significantly different.

Table 1
Nursing students' demographic characteristics (n = 486).

Items	n	%
Gender		
Male	32	6.6
Female	454	93.4
Age(year-old)		
≤21	73	15.0
22–23	323	66.5
≥24	90	18.5
Religion		
No	406	83.5
Yes	80	16.5
Family structure		
Live with grandparents or other relatives	9	1.9
One or both parents remarried family	10	2.1
Single parent family	6	1.2
One-child family	115	23.7
Multi-child families	346	71.2
Birthplace		
The countryside	321	66.0
The county	114	23.5
The city	51	10.5
Education level		
Junior college education	83	17.1
Undergraduate education	403	82.9
class service		
No	386	79.4
Yes	100	20.6
Professional identity		
Not agree	145	29.8
Indifferent	195	40.1
Agree	146	30.0
Sensitive personality		
Never	45	9.3
Occasionally	163	33.5
Often	266	54.7
Always	12	2.5
Prior knowledge of workplace vertical violence before clinical practice		
No	83	17.1
Yes	403	82.9

4. Results

4.1. Features of nursing students' demographic characteristics

Table 1 shows the detailed demographic characteristics of 486 (92.75%) nursing students. The mean age was 22.55 (1.10), with a range of 20–25 years old.

4.2. Incidence, types, perpetrators and departments of nursing students' workplace vertical violence

The results showed that, 373 students have experienced or observed workplace vertical violence, accounting for 76.75% in a total; 249 students have experienced workplace vertical violence, accounting for 51.23%. Table 2 illustrates fifteen different types of workplace vertical violence suffered by 249 nursing students, and 77.5% nursing students were forced to do trivial and unimportant work and 55.4% were ordered to do something beyond their abilities and lacked of guidance. Most of perpetrators were identified as assigned nurse namely a clinical nurse in a department who is responsible for the internship of a nursing student in this department (64.3%), while 46.6% of incidents originated from clinical nursing teacher namely a senior clinical nurse in a department who is responsible for the internship of all nursing students in this department, 39.4% originated from doctors, 26.9% originated from other nurse, 21.3% originated from the nurse manager. For nursing students, the top six departments, which was most prone to be suffered from workplace vertical violence, were as follows: emergency department (128, 51.4%), surgical department (101, 40.6%), operation room (95, 38.2%), ICU (83, 33.3%), internal medicine department (81, 32.5%), and outpatient department (27, 10.8%).

Table 2
Types of nursing students' workplace vertical violence (n = 249).

	Types of workplace vertical violence	n	%
1	I was withheld or blocked information purposefully	81	32.5
2	I was belittled at work	93	37.3
3	I was ordered to do something beyond my ability and lacked of guidance	138	55.4
4	Others spread gossip or rumors about me	26	10.4
5	I was frozen out, ignored, or excluded	38	15.3
6	I was threatened or intimidated	17	6.8
7	I was humiliated publicly	104	41.8
8	Errors in work have been repeatedly emphasized, spread, or exaggerated	94	37.8
9	I was unjustly criticized	118	47.4
10	I was physically abused (such as pushing body behavior)	51	20.5
11	I was deprived of proper rights	46	18.5
12	I was a laborer who was forced to do trivial and unimportant work	193	77.5
13	I was treated with hostility	50	20.1
14	I became a scapegoat	59	23.7
15	Turn to others for help, but they refused to help	83	33.3

4.3. Treatments of workplace vertical violence for nursing students

Table 3 shows the resilience score distribution of nursing students suffered from workplace vertical violence. There were significant differences between the resilience scores of nursing students who have or have not communicated with perpetrators to obtain the understanding of each other, have or have not reported the violent behavior ($p < 0.05$).

4.4. Effects of nursing students' workplace vertical violence

Table 4 presents the resilience score distribution of nursing students under the effects of workplace vertical violence. There were significant differences between the resilience scores of nursing students with or without psychological impact. Besides, resilience scores of nursing students were largely different, if (1) they have admitted they were incorrect or not, (2) reminded themselves to work harder and get stronger or not, (3) stated that workplace vertical violence could be prevented or not ($p < 0.05$).

4.5. Multivariate conditional logistic regression analysis on influence factors of workplace vertical violence for nursing students

A multivariate conditional logistic regression analysis was used to investigate influence factors of workplace vertical violence. The demographic variables and resilience scores were implied as independent variables, while workplace vertical violence experienced by nursing students during the clinical practice was the dependent variable. Finally, six variables were concluded as the most important influencing factors of workplace vertical violence: birthplace, education levels, professional identity, sensitive personality, prior knowledge of workplace vertical violence before clinical practice and resilience scores ($p < 0.05$) (Table 5).

5. Discussion

This study indicates that situation of workplace vertical violence suffered by nursing students is not optimistic. Three quarters of students have experienced or observed workplace vertical violence, half of students have experienced workplace vertical violence. This prevalence is consistent with prior studies conducted in other international student nurse populations (Clarke et al., 2012; Curtis et al., 2007; Geller, 2013). In addition, nurses are reported as the most common originating source

Table 3
Distribution of nursing students' resilience scores by the treatments of workplace vertical violence (n = 249).

Treatments of workplace vertical violence		n	%	Total resilience score (Mean ± SD)	t	P
Kept silence, grin and bear it	No	96	38.55	100.76 ± 14.82	−1.367	0.173
	Yes	153	61.45	103.30 ± 13.92		
Communicated with the perpetrators and obtained the understanding of each other	No	166	66.67	100.61 ± 14.83	−2.861	0.005
	Yes	83	33.33	105.75 ± 12.56		
Complained to their family and friends	No	106	42.57	102.52 ± 13.47	0.187	0.851
	Yes	143	57.43	102.17 ± 14.92		
Reported the behavior	No	220	88.35	103.39 ± 14.06	3.317	0.001
	Yes	29	11.65	94.21 ± 13.64		

of workplace vertical violence, which is also similar to other studies (Clarke et al., 2012; Longo, 2007; Ünal and Hisar, 2012). Above all, it is very common for nursing students to suffer from workplace vertical violence by nurses in the clinical practice.

Nursing students are unwanted, ignored, unfairly blamed, publicly humiliated, and their assessments are distrusted and disbelieved in their clinical training (Thomas and Burk, 2009). The term of "nursing students' workplace vertical violence" was first proposed by Thomas and Burk when abusive registered nurse behavior (nurse-to-nurse horizontal violence) is directed towards students (Thomas and Burk, 2009). That is to say, the concept and performances of nursing students' workplace vertical violence are based on that of the nurses' horizontal violence. As we have known, horizontal violence can be implicit and undetectable as well as explicit and direct (Jackson et al., 2002).Moreover, other forms of the phenomenon such as bullying, intimidation, mobbing and aggression are also considered as horizontal violence (Thomas and Burk, 2009). Therefore, the operational definition of horizontal violence is not very clear, and the performances of horizontal violence are not uniform in various research reports. The same problem has arisen in the vertical violence derived from horizontal violence, that is, the operational concept is blurred and the manifestations are not uniform in different studies. For example, there are a total of 26 different types of bullying behavior, including a range of covert and overt performance. The top 5 types range from (1) feeling their efforts were undervalued; (2) being told negative remarks about becoming a nurse; (3) feeling that impossible expectations were set for them; (4) be placed under undue pressure to produce work; (5)be frozen out,ignored or excluded(Clarke et al., 2012). Other studies have identified the following items: being a laborer who was forced to do trivial and unimportant work and being ordered to do something beyond their abilities and lacked of guidance (Li, 2011). The 15 types of workplace verticle violence for nursing students included in this study is mainly based on the previous research results(Clarke et al., 2012; Li, 2011). The most frequently encountered workplace vertical violence to nursing students in our study were concluded as follows: (1) being forced to do trivial and unimportant work; (2) being ordered to do something beyond ability and lacked of guidance; (3) being unjustly criticized; (4) being humiliated publicly; (5) errors in work have been repeatedly emphasized, spread, or exaggerated. Due to the vagueness of operational concept of nursing students' workplace vertical violence, to some extent, it is possible that the types of vertical violence included in this study are not comprehensive, so that the nursing students' workplace vertical violence can not be fully illustrated. Or the types of vertical violence included may be partly unreasonable and may exaggerate the occurrence of workplace vertical violence of nursing students. In the future, the operational concept of workplace vertical violence of nursing students need to be elaborated more exactly. On this basis, a more professional and scientific scale or questionnaire of nurse students' workplace vertical violence is required to uniformly and comparably explore the occurrence and performances of workplace vertical violence in nursing students at home and abroad.

According to this study, most of the workplace vertical violence has occurred in the emergency department. Nurses in the emergency department face a variety of complex environments, especially the tense nurse-patient relationship and the improvement of patient's awareness of rights in our country recently (Chang et al., 2013). Hospital administrators are stricter to nurses' work, which further strengthens the pressure on nurses (Gan et al., 2013). Studies have shown that 100% nurses in the emergency department are occupational burnout, and the main reason is the large psychological pressure (Zhang et al., 2013). Excessive pressure can bring about negative consequences of behavior, cognition and physiology, which are manifested as the exhaustion of physical health, emotional conditions and talents (Wang et al., 2011). So nurses may vent their negative emotions to nursing students. For example, nurses may force students to finish the heavy work they should do, or cannot patiently provide students with sufficient, clear guidance.

The clinical component of a nursing educational program has been identified as the most important area for learning and socialization to the profession (Atack et al., 2001). In particular, staff-student relationships have been reported as being of most influence on student's sense of learning and belonging (Levett-Jones et al., 2009). In this study, more than half of nursing students who experienced workplace vertical violence have suffered from the negative psychological and

Table 4
Distribution of nursing students' resilience scores by the effects of workplace vertical violence (n = 249).

Effect of workplace vertical violence		n	%	Total resilience score (Mean ± SD)	t/F	*P*
Negative impact on psychology, such as anxiety, sadness, and frustration	No	86	34.54	105.90 ± 14.98	3.330	0.001
	Yes	163	65.46	99.88 ± 13.31		
Physiological adverse reactions, such as weight loss, fatigue, headache, insomnia	No	148	59.44	101.64 ± 13.86	−0.546	0.586
	Yes	101	40.56	102.68 ± 14.55		
Felt what they did was not correct	No	244	97.99	102.59 ± 14.25	2.087	0.038
	Yes	5	2.01	89.20 ± 10.40		
Considered leaving the nursing profession	No	140	56.22	102.17 ± 13.90	−0.326	0.745
	Yes	109	43.78	17.17 ± 3.03		
If workplace vertical violence could be prevented	No	122	49.00	99.91 ± 14.94	4.230	0.016
	Yes	39	15.66	106.92 ± 11.87		
	Unclear	88	35.34	103.63 ± 13.83		
Reminded themselves to work harder and get stronger.	No	83	33.33	99.25 ± 14.04	−2.418	0.016
	Yes	166	66.67	103.86 ± 14.22		

Table 5
Multivariate conditional logistic regression analysis for nursing students' workplace vertical violence influence factors.

Variables	B	S.E.	Wald	*P*	OR	95.0%C.I.for OR	
						Lower	Upper
Birthplace	0.827	0.197	17.633	0.000	2.286	1.554	3.363
Education level	−1.614	0.360	20.132	0.000	0.199	0.098	0.403
Sensitive personality	1.734	0.210	67.889	0.000	5.665	3.750	8.559
Professional identity	−0.520	0.174	8.922	0.003	0.595	0.423	0.836
Prior knowledge of workplace vertical violence before clinical practice	0.931	0.317	8.655	0.003	2.538	1.365	4.720
Resilience score	−0.091	0.011	74.289	0.000	0.913	0.894	0.932

physiological effects; and 43.78% nursing students have considered to drop the nursing profession. To some extent, the view of "nurses eating their young" is correct. Therefore, workplace vertical violence may be considered as an important factor influencing the organizational and professional retention of nurse team.

Before the study, some problems were considered as follows. (1) For the same nurse, why some students reported they have experienced workplace vertical violence, while others not; (2) when suffering from workplace vertical violence, why some were painful, while others not, even 66.67% nursing students reminded themselves to work harder and get stronger after workplace vertical violence. Therefore, this paper attempted to solve problems from the perspective of students themselves and explored influence factors of workplace vertical violence. Finally, negative correlations were obtained between nursing students' education levels, professional identity, resilience scores, and workplace vertical violence incidence ($p < 0.05$). The positive correlations were also found between nursing students' sensitive personality, birthplace, prior knowledge of workplace vertical violence before the clinical practice and incidence of workplace vertical violence ($p < 0.05$). It is easy to conclude that the higher educational level results in lower incidence of workplace vertical violence. When students with higher educational background accept more thorough professional knowledge and proficient clinical skills, they can effectively handle the clinical work and be easily recognized by clinical nurses. Therefore, they can avoid or suffer less workplace vertical violence from the nurses. Besides, nursing student who has a higher professional identity can avoid or suffer less workplace vertical violence. These results indicate that measures can be taken to improve the professional identity of nursing students before the clinical practice to reduce the incidence of workplace vertical violence. Henry proposed that career-development courses can improve the professional identities of students(Henry, 1993). Influencing factors of professional identity and intervene for nursing students can be explored. This study also demonstrates that the incidence of workplace vertical violence is higher when the nursing students' personality is more sensitive. The person with more sensitive personality will be much concerned about words, a look, or an action from the others, even exaggerate and distort the true idea expressed by the others (Zhang, 2005). Therefore, the excessive personality sensitivity of nursing students may exaggerate the incidence of workplace vertical violence.However, there was a limitation of the study, namely the deviation of students' personality might occur since the professional personality scale was not used. Interestingly, the students who have heard of unfriendly behavior from nurses to students before the clinical practice are more vulnerable to experience the workplace vertical violence than those who have not heard before. 82.9% of nursing students have heard the workplace vertical violence, that is to say, the phenomenon of nursing students unfriendly behavior is generally understood. However, the incidence of violence has not been diminished because of the broad understanding. The results indirectly reveal the lack of attention, education and management of hospital administrators to workplace vertical violence in the clinical practice in China.

In this study, we paid more attention to exploring how nursing students treat with perpetrators of workplace vertical violence and what impact would have on them through the perspective of resilience. Resilient characters are proactive learners that they learn from success, focus on innovation, be more creativity, and do things well. They are more concerned about their strengths than their weaknesses and make full use of them (Park et al., 2005), which is consistent with our research results. When there is a higher resilience, nursing students can have more courage to communicate with the perpetrators and understand each other, then they can remind themselves to work harder, get stronger, and firmly believe that workplace vertical violence can be prevented. It is believed that nursing students with more resilience are able to cope with the workplace vertical violence and adapt to stressful work experiences in a positive manner.It is concluded from the study that the lower the resilience, the more negative impact on the psychology. Similarly, the lower resilience is associated with psychological disorders (Zou et al., 2016). It should be noted that the higher the resilience, the more likely students are not to report workplace vertical violence. The reasons for not reporting are listed as follows: nothing will have been done, they do not know how to report, do not think there is proof and do not know who can be reported (Geller, 2013). However, in fact some nursing students with high resilience can regulate themselves better and deal with the conflict by themselves without asking for help from senior nursing staff. In this study, it is found that resilience is negatively related to workplace vertical violence incidence and it may be inferred as an important factor for preventing nursing students' workplace vertical violence. Therefore, based on resilience's protective and positive effect on the successful coping or adapting growth to stress (Davydov et al., 2010), it is necessary to take the resilience training to improve nursing students' resilience and make nursing students actively respond to the violence experience.

5.1. Limitations

For the following reasons, the results of this study must be treated with caution. First of all, there might be a selective bias in the data analysis since the cluster sampling method was used in this study. Secondly, the representativeness of the survey results may be affected because most of practice hospitals were located in Anhui provinces. Therefore, further research needs to be carried out. In order to determine greater representation, the cross sectional random sampling survey is recommended, and the area scope of practice hospitals should be best covered in various provinces in China.

At present, there is little research on the status of workplace vertical violence experienced by nursing students in China, or the relationship between resilience and nursing students' workplace vertical violence. Even there is little research on influencing factors of workplace vertical violence experienced by nursing students at home and abroad. Although there are some defects, the results of this study are consistent with other research results to a certain degree, and new research findings are provided in this field.

6. Conclusion

In China, it is common for nursing students to suffer workplace

vertical violence from nurses in the clinical training. Although it has negative impacts on the psychological and physical conditions of nursing students, most of them can positively adjust themselves. Resilience plays a positive role in the nursing students' workplace vertical violence. Besides, there are few intervention programs on nursing students' workplace vertical violence in the clinical practice currently. This study provides useful information and identifies important risk factors of workplace vertical violence incidence in China. Hence, this study is important for school nursing educators and clinical nursing managers in making future deep study to reduce workplace vertical violence for nursing students. It is hoped that nursing managers and nursing educators can attach importance to this phenomenon. Based on this study, nursing managers of the hospital should excavate deep reasons in terms of hospital management, make an effort to change the management concepts and methods to create a good working atmosphere for nursing students.

Besides, the results also indicated that the occurrence and influence of vertical violence in workplace were related to the individual characteristics of nursing students, such as a relatively strong sensitive personality and low level of resilience. Therefore, this study provides a certain direction of intervention. It is helpful for nursing managers and nursing educators to investigate the workplace vertical violence for nursing students from different perspectives, such as the further exploration of relationship between personality characteristics, professional identity and workplace vertical violence.

Conflicts of interest

The authors declare they have no conflicts interest to declare.

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Appendix A. Supplementary data

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