

BMJ Open Impact of workplace incivility against new nurses on job burn-out: a cross-sectional study in China

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Abstract This study had three objectives: (1) to investigate the impact of workplace incivility on job burn-out of new nursing staff, (2) to verify the partial mediating role of anxiety in the relationship between workplace incivility and job burn-out, (3) to examine the resilience moderating the relations between workplace incivility and job burn-out.

Design A cross-sectional online survey was conducted in May 2016 in China.

Setting The survey was conducted in 54 cities across 29 provinces of China.

Participants A total of 903 participants were invited. Ultimately, 696 new nurses (<3 service years) completed valid questionnaires. The effective response rate was 77.1%. Entry criteria: voluntary participation, having less than three service years and being a registered nurse. Exclusion criteria: being an irregular nurse, having more than three service years and refusing to participate in this work.

Outcome measures An anonymous questionnaire was distributed among new nurses. The relationships and mechanism among the variables were explored using descriptive statistical analysis, Pearson's correlation coefficient and multiple linear regression analysis.

Results The findings showed that workplace incivility was positively correlated with anxiety ($r=0.371$, $p<0.01$) and job burn-out ($r=0.238$, $p<0.01$) of new nurses. The positive relation between anxiety ($\beta=0.364$, $p<0.01$) and job burn-out ($\beta=0.240$, $p<0.01$) was also significant. Moreover, anxiety partially mediated ($z=7.807$, $p<0.01$) and resilience moderated ($\beta=-0.564$, $p<0.01$) the association between workplace incivility and job burn-out.

Conclusion Experience of workplace incivility by new nurses would likely generate anxiety in the victims. Further, the increased anxiety state could elevate their level of job burn-out. New nurses with high levels of resilience could buffer the negative influence of workplace incivility by using a positive coping style.

INTRODUCTION

Background/literature review

Workplace incivility was regarded as a negative behaviour by organisation members which was clearly proposed by Katz in 1964.¹ However, this kind of behaviour and its negative consequences did not attract attention from management researcher at that time.²

Strengths and limitations of this study

- This is the first study investigating the relationship of workplace incivility with anxiety, resilience and job burn-out of new nurses.
- The finding that anxiety partially mediated the relationship between workplace incivility and job burn-out is first reported among new nurses.
- This research has innovatively examined the resilience moderating the relations between workplace incivility and job burn-out.
- The method to self-reports of new nurses by an online survey may have led to response bias, and causation cannot be established due to the cross-sectional study design.
- The regional data source ratio would be unbalanced.

After nearly 30 years of exploration practice, Andersson and Pearson formally defined workplace incivility in 1999 as follows: 'Workplace incivility is low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others.'³ In 2002, a new concept of workplace incivility was put forward by Western researchers. Lauer considered that uncivil behaviour harmed employees' self-esteem in the organisation, causing harm to employees by disrespectful behaviour,⁴ but it is completely distinct from physical aggression and violence. Workplace incivility has characteristics similar to the subtle spiral infiltration model. It would be accumulated at a low level for a long time, and the final outcome rises to a high level of harm to employees. The harm is sustained over a long period, and, therefore, the physical and mental damage to the victim is difficult to recover in the short term.⁵ According to previous reports, the influence of workplace incivility on mental health of employees mainly included anxiety, cognitive dissonance, excessive worry, stress and mental depression and so on.⁶ The impact on physical

health includes migraine headaches, stomach ulcers, high blood pressure and so on.⁶ Typically, uncivil behaviours are unobserved and add up over time. Moreover, if a hospital organisation cannot respond properly, these uncivil behaviours may lead to adverse organisational and individual effects.³ Over time, the organisational conflict caused by uncivil behaviour would emerge,⁷ and serious consequences will gradually appear in large numbers in the group, such as the absenteeism,⁸ less organisational citizenship behaviour,⁹ productivity slowdown,¹⁰ lower job satisfaction,¹¹ lower organisational loyalty¹² and even heightened turnover intentions.¹³

In recent years, residents' expectations regarding medical service continue to rise.¹⁴ Due to the large population in China, an appropriate number of nurses is needed to deliver healthcare services to meet the health needs.¹⁵ Therefore, the sustainable recruitment of nurses and acceleration of their career development is crucial for the nursing field. Improving the skills of nursing staff relies on healthy career development, which is a key task for China's healthcare service system. Further, the Chinese health system faces problems such as weak medical service capacity in primary hospitals, health human resources of insufficient quality, rising healthcare costs, fragmented medical services and so on.¹⁶ Novice nurses (working service less than 3 years) as the new force of the nursing team is the basis for the prosperity and development of the nursing team. These new nurses have the characteristics of young age, lack of work experience and weak psychological coping ability. Yet, there is a high degree of job stress of new graduates in the Chinese healthcare climate. Therefore, new nurses often lack the skills to cope with problems in the new working conditions. The active adaptation, good job involvement, and physical and mental health of the new nurses are regarded as motivating forces to encourage them and are greatly beneficial to their career success in the long term. An active, enthusiastic and positive attitude towards nursing work at the beginning of one's career is necessary for new nurses.¹⁷ However, new nurses early in their career are likely to encounter variously offensive behaviours, which violate the principle of equality and respect among organisation members and are highly hurtful with low intensity.⁵ These adverse behaviours under long-term generation must lead to irreversible damage to the new nurses' physical and mental health. Meanwhile, they must also severely hinder the construction of the medical and nursing team. Unfortunately, there are no related experts and researchers focused on the phenomenon of workplace incivility against new nurses in China.

Some scholars pointed out that workplace incivility was associated with job burn-out among restaurant service employees.¹⁸ Job burn-out is an individual reaction to emotional and interpersonal stress and is related to work pressure and occupational stress.¹⁹ Previous study showed a high incidence in the nursing group.²⁰ Worse still, job burn-out can result in a series of adverse outcomes for nursing staff and hospital organisations, such as

disappearance of sense of organisation belonging,²¹ decline of nursing group cohesion,²² poor nursing work efficiency and lower job performance. It may even lead to the loss of nursing talents.²³ The reasons for job burn-out have been analysed and mainly include excess workload,²⁴ lack of support and resources,²⁵ impeded information and reduced sense of control,²⁴ organisational injustice,²⁶ interpersonal roles conflict,²⁷ and interpersonal emotional stress at work.²⁸ In addition, some researchers have conducted many studies to explore the relationship between incivility and job burn-out in the nursing workplace.²⁰ However, previous studies exhibited a complete lack of concern for new nurses. Further, during recent years, although researchers have successfully explained the role mechanism of job burn-out under the resource perspective, there are no researchers illustrating the mechanism of the relationship between workplace incivility and job burn-out.

Additionally, the awareness of workplace incivility has been greatly enhanced recently, especially of the effects of uncivilised workplace behaviour on the psychological health of employees.²⁹ A new study also sheds light on the workplace incivility experienced by Australian adult workers. The finding indicates that workplace incivility is positively linked with anxiety.³⁰ Anxiety is seen as an adaptive motivational behaviour that helps individuals cope with threatening situations.³¹ From the evidence of another study, anxiety refers to an unpleasant emotional state that mainly includes such feelings as apprehension, tension and worry.³² Anxiety is considered to be caused by stimuli from the external environment. When people experience workplace incivility, they may feel anxious.³² For example, their work performances are not being respected, or they receive other people's unreasonable malicious evaluations. Anxious employees are more apt to experience emotional exhaustion, body fatigue, reduced work involvement and lower job satisfaction with the continuous depletion of psychological resources. In other words, anxiety could increase the risk of employees' job burn-out. Resilience is the ability to bounce back or cope successfully despite adverse circumstances.³³ It is used to describe when a person recovers easily and quickly from setbacks that occur during his or her life. It is worth mentioning that the core of resilience is strength, and people who are described as resilient are said to be able to persist in overcoming challenging obstacles. Therefore, resilience is nurses' ability to successfully adjust and recover in adversity, which plays an important role when employees experience workplace incivility.³³ One study indicated that resilience was a moderator between work stress and job burn-out.³⁴ Therefore, the following hypotheses are proposed in this study regarding the group of new nurses.

Hypothesis 1

Workplace incivility has a positive prediction function to generate anxiety among new nurses.

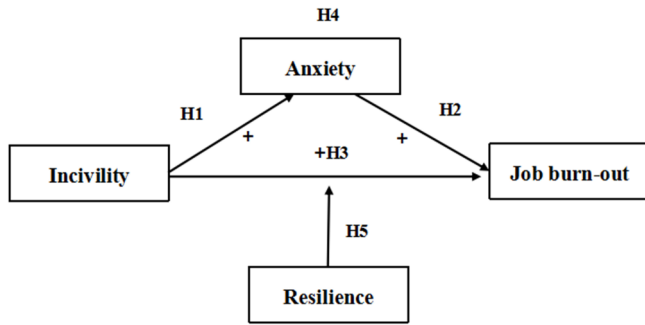


Figure 1 The conceptual framework of study.

Hypothesis 2

Anxiety positively predicts job burn-out among new nurses.

Hypothesis 3

Workplace incivility has a positive prediction function to generate job burn-out among new nurses.

Hypothesis 4

Anxiety mediates the relationship between workplace incivility and job burn-out.

Hypothesis 5

Resilience moderates the relationship between workplace incivility and job burn-out as shown in [figure 1](#).

METHOD AND ANALYSIS

Sample/participants

New nurses who had been working less than 3 years were recruited as the sample of current research from a hospital in China in 2016. A total of 903 questionnaires (including the Workplace Incivility Scale, Anxiety Scale, Resilience Scale and Job Burn-out Scale) were distributed among new nurses; A total of 696 questionnaires were returned. The effective response rate was 77.1%.

Data collection

An anonymous online questionnaire was completed by nurses with less than 3 years of working throughout the country in May of 2016 in China. In this study, the method of snowball sampling was used to collect the sample data. In the network survey, original deliverers used in this survey are alumni who maintain friendly contact with us, who work in nursing positions in various hospitals. Before a formal online survey begins, we have provided comprehensive survey training to these initial contacts. Then encourage them to invite their colleagues or classmates to fill out the questionnaire. This survey is to use their network of relationships for continuous expansion. The amount of data collected can be monitored in real time on the website's management platform. First, approximately 50 new nurses from the authors' unit were selected as the original deliverers of the survey. Subsequently, the colleagues or classmates of 'the original deliverers' were invited to participate in our online survey. A web page

link to our questionnaire survey (<https://www.wenjuan.com/>) was sent by mobile phone to the participants during nurses' rest breaks. Moreover, the questionnaires were self-administered. Inclusion criteria: voluntary participation, having less than three service years and being registered nurses. Exclusion criteria: being irregular nurses, having more than three service years and refusing to participate in this work.

Ethical considerations

Individual consent was received from every participant nurse. To ensure anonymity, participants were informed of the anonymity and were asked to avoid using names of their colleagues or superiors during the interview. Written informed consent could not be received due to the anonymous survey approach. Hence, oral informed consent for the survey was approved by the Ethics Committee of the Harbin Medical University and was obtained from each new nurse. Once a questionnaire was completed, it was identified that the nurses had acquiescently agreed to participate in our survey.

Instrument

Workplace incivility

Workplace incivility was assessed using 12 items developed by Cortina *et al.*,³⁵ which were selected to represent workplace incivility on a 5-point Likert scale, ranging from 1 to 5 (1=never, 2=one time, 3=two and three times, 4=more than four times, 5=frequently). Higher scores represented a higher occurrence rate of workplace incivility. The Cronbach's alpha coefficient for this scale was 0.893.

Anxiety

Anxiety was evaluated with one item: 'Does your job make you feel anxious?' This item was scored on a 5-point Likert scale ranging from 1 to 5 (1=never, 2=seldom, 3=occasionally, 4=often, 5=frequently). According to past literature,³⁶ item measurement also had adequate reliability and validity.

Resilience

An instrument with a 4-item scale was used to measure the aspects of resilience suggested by Sinclair and Wallston,³⁷ including one dimension. The participants in the study were asked to respond to their options ranging from 'never' to 'every day' on 5-point scale, and higher scores indicated higher resilience. The Cronbach's alpha coefficient for this scale was 0.797.

Job burn-out

Job burn-out was measured using the Chinese version of the Maslach Burnout Inventory-General Survey, which has been widely applied across different occupational groups.³⁸ The participants in this study were asked to respond using 7-point scaled response options from 0 (never) to 6 (frequently). The whole scale consists of three dimensions: emotional exhaustion (five items), cynicism (four items) and reduced personnel accomplishment (six items). The whole questionnaire consists of 15

Table 1 Characteristics of the respondents (n=696)

Characteristic	Classes	N	%	Mean±SD
Age	19–29	672	96.55	24.55±2.10
	30–35	24	3.45	
Gender	Male	67	9.60	–
	Female	629	90.40	
Marital status	Unmarried	594	85.34	–
	Married	99	14.22	
	Other	3	0.44	
Hospital level	Tertiary hospitals	580	83.30	–
	The secondary hospital	90	12.90	
	First-level hospital	26	3.70	
Education level	Secondary or below	17	2.40	–
	Associate degree	253	36.35	
	Bachelor or above	426	61.20	
Service years	0–1 year	357	51.29	1.71±0.81
	1–2 years	181	26.01	
	2–3 years	158	22.70	
Distribution department	Rotation	102	14.66	–
	Internal medicine	165	23.70	
	Surgery	178	25.57	
	Emergency	3	0.44	
	Medical technology	25	3.59	
	Outpatient service	30	4.31	
	Gynaecology	41	5.89	
	Paediatrics	29	4.17	
	Others	123	17.67	

items. Higher scores indicated a significantly elevated degree of job burn-out. The Cronbach's alpha coefficient for his scales was 0.791.

Data analysis

Descriptive statistical analysis was used to display the demographic variables and incidence rate of workplace incivility. Pearson's correlation coefficients were computed to examine the relationship between workplace incivility and other variables. We obtained the data through the questionnaires above. Meanwhile, the data were transferred from the network, and multivariate techniques also were adopted ($p < 0.05$); the difference was statistically significant. All analyses of the data were carried out using SPSS V.19.0 (IBM, BM SPSS Statistics for Windows).

RESULTS

Descriptive results

The demographic characteristics are shown in [table 1](#). The data indicate that a majority of the sample is women (90.4%) with an average age of 24.6 years; almost 85.3% are unmarried. Among the participants surveyed, 83.3%

are from the Tertiary hospitals and 61.2% had bachelor or above. Approximately, 51.3% of the participants' service years less than 1 year at their current hospital. The participants are primarily distributed into eight clinical departments.

The means, SD and Pearson's correlation coefficients of continuous variables are shown in [table 2](#). As results exhibited, all variables were significantly correlated with each other. Workplace incivility was positively correlated with anxiety ($r = 0.371$, $p < 0.01$) and job burn-out ($r = 0.238$, $p < 0.01$). On the contrary, workplace incivility was negatively related to resilience ($r = -0.191$, $p < 0.01$). Compared with previous studies,^{39 40} the level of job burn-out of Chinese new nurses (3.19 ± 0.84) was significantly higher than that of British (2.71 ± 0.97) and Italian nurses (2.31 ± 0.88).

Hierarchical linear regression models

Several multiple linear hierarchical regression analyses were performed to examine the influence of workplace incivility on job burn-out, anxiety and resilience of new nurses ([table 3](#)). To examine this research, we conducted three mediation analyses using the methods based on

Table 2 The means, SD, Pearson's correlation coefficient and reliability coefficient of variables

Variables	M	SD	α	1	2	3
Workplace incivility	1.893	0.532	0.893			
Anxiety	2.770	0.862	–	0.371*	–	
Resilience	3.515	0.812	0.797	–0.191*	–0.240*	–
Job burn-out	3.194	0.841	0.797	0.238*	0.436*	–0.026*

*P<0.01; Correlation is significant at the 0.01 level (two tailed).
 α , Cronbach's alpha; M, mean.

linear regression published by Baron and Kenny.⁴¹ Workplace incivility was posed as a dependent variable in this study, anxiety as a mediator variable and job burn-out as an independent variable. Besides, the resilience was seen as a moderating variable in these models. At the same time, to eliminate the effects of demographic variables around these regression models, age, gender, hospital level, working years and situation of education and department distribution were posed as control variables, as shown in table 3.

The results showed that workplace incivility had a positive prediction function to generate anxiety ($\beta=0.364$, $p<0.01$, M_2) and job burn-out ($\beta=0.240$, $p<0.01$, M_5) of

new nurses. Hypotheses 1 and 3 were supported. Anxiety also had a positive influence on job burn-out ($\beta=0.405$, $p<0.01$, M_6), which confirmed hypothesis 2. Further, the regression coefficient $\beta=0.093$ in model 6 decreased obviously compared with previous $\beta=0.240$ (in the model 5) after controlling for the mediation variable (anxiety), according to the method to test mediating effect proposed by Judd *et al.*⁴² The mediating effect of anxiety and its significance were further tested by a Sobel test, referring to the inspection procedures developed by Preacher and Hayes.⁴³ The mediation effect was calculated as follows: $ab=0.564 \times 0.057=0.032$, $p<0.01$, $z=7.807$. Therefore, anxiety partly mediated the relationship between

Table 3 Hierarchical linear regression models of variables

Variables	Anxiety		Job burn-out					
	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Control variables								
Age	–0.012	–0.019	0.027	0.033	0.023	0.031	0.022	0.023
Gender	–0.085	–0.094**	0.005	0.042	–0.001	0.037	0.000	–0.002
Hospital level	–0.102**	0.087	–0.034	0.011	–0.024	0.011	–0.023	–0.025
Service years	0.067	0.084	0.092	0.062	0.103	0.069	0.106**	0.106**
Education level	0.107**	0.064	0.041	–0.006	0.012	–0.014	0.012	0.017
Department distribution	–0.004	–0.006	–0.011	–0.01	–0.013	–0.011	–0.014	–0.014
Cause variable								
Workplace incivility		0.364**			0.240**	0.093**	0.242**	0.724**
Mediating variable								
Anxiety				0.440**		0.405**		
Moderating variable								
Resilience							0.020	0.400**
Incivility resilience*								–0.564**
F	4.217**	19.379**	1.543	24.535**	7.367**	22.426**	21.003**	17.095**
R ²	0.035**	0.165**	0.013	0.200**	0.070**	0.207**	0.057**	0.069**
ΔR^2	0.027**	0.156**	0.005	0.192**	0.060**	0.198**	0.054**	0.065**

M1: explains the influence of demographic variables on anxiety.

M2: explains the influence of workplace incivility on anxiety.

M3: explains the influence of demographic variables on job burn-out.

M4: explains the influence of anxiety on job burn-out.

M5: explains the influence of workplace incivility on job burn-out.

M6: explains the influence of workplace incivility on job burn-out after bringing into the explanatory power of anxiety.

M7: explains the influence of workplace incivility on job burn-out after bringing into the explanatory power of resilience.

M8: explains the influence of workplace incivility on job burn-out after bringing into the explanatory power of resilience and resilience Interaction.

*P<0.05; **P< 0.01.

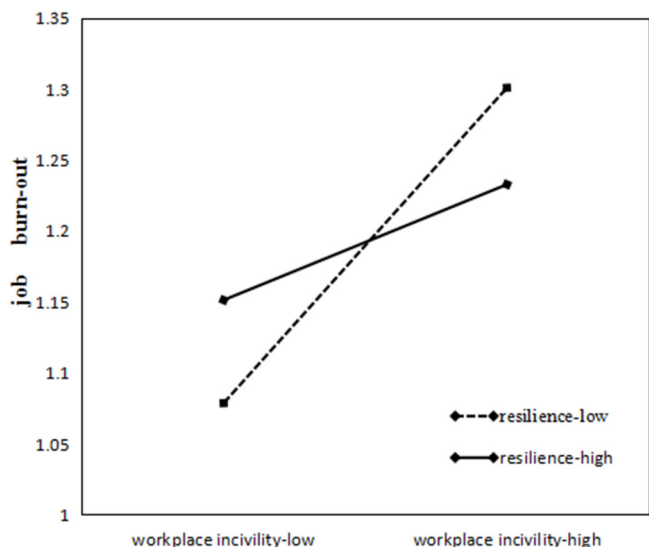


Figure 2 Effect of moderation.

workplace incivility and job burn-out of new nurses. Thus, hypothesis 4 was also confirmed. Moreover, the influence of the interaction between incivility and resilience on job burn-out was significant ($\beta = -0.564$, $p < 0.01$, M_8). The moderating effect was estimated by referencing a previous study.⁴⁴ It showed that resilience moderated the relationship between incivility and job burn-out. Thus, hypothesis 5 was confirmed. This interaction effect is clearly illustrated in [figure 2](#).

DISCUSSION

The effect and mechanism on the new nurses' job burn-out caused by workplace incivility

New nurses exposed to workplace incivility had a higher level of anxiety and job burn-out. This conclusion is consistent with previous research.^{13 45} Moreover, new evidence was also produced in this study that anxiety played a mediating role, and resilience had a moderating effect on the relationship between workplace incivility and job burn-out. That is, exposure to workplace incivility can result in increased degree of anxiety, which, in turn, can cause job burn-out. The new nurses with high levels of resilience can effectively buffer the negative effect caused by workplace incivility to a certain degree, which, in turn, can reduce the level of job burn-out. The possible mechanism is described below.

The mediating role of anxiety in the relationship between workplace incivility and job burn-out

In recent years, increased interest was paid to incivility in work settings. Although many previous studies on this topic focused on the adverse effects of uncivil behaviour,¹³ the studies on the mediators and moderators were insufficient. In this study, we attempted to investigate the subtle mechanism of incivility against new nurses. Clearly, workplace incivility is similar to language violence which, exists extensively.¹³ The new nurses are in need of various resources for career support, including material resources,

human resources, mental resources and others.⁴⁶ Generally speaking, workplace incivility is inevitable for new nurses as a part of work events launched from dissatisfied patients. In addition, because of lack of work experience and skills, new nurses are likely to encounter a series of disgruntled emotions from their superiors or colleagues—hence, the image called the 'kick cats effect'.⁴⁷ The theoretical 'snowball effect' on incivility showed that it is inevitable to generate a ripple effect infected by some negative emotions in the workplace.⁴⁸ Therefore, most new nurses are more likely to generate anxiety, restlessness, sense of injustice and helplessness.⁴⁹ As time goes by, a state of physical and mental exhaustion and working weariness under stress from work and society will attack the new nurses.⁴⁹ Job burn-out as a reflection of the chronic and interpersonal stress at the work setting, including emotional exhaustion, depersonalisation and ineffectiveness, can cause various manifestations such as depression, creativity failure, lower sense of personal worth, lower job satisfaction and so on.^{50 51} Anxiety, as a basic human emotion, developed in the combat between human and environment and the process of survival adaptation.⁵² The affective events theory pointed out that employees can generate emotional reactions to what is going on, and these reactions influence their job performances and satisfaction.⁵³ Once the perception of anxiety appears, new nurses are likely to consume their own physical and mental energy for defence, followed by the sense of self-denial, inferiority and helplessness. The sense of low achievement and energy exhaustion and an emotional response to ineffectiveness effort could be highlighted, easily resulting in the increased risk of job burn-out. If employees cannot control and address the problems after the exposure to workplace incivility, anxiety ensues with negative emotions, for example, burn-out. Therefore, anxiety was defined as having a partial mediating role (shown in [table 3](#)) in the relationship between workplace incivility and job burn-out.

The moderating effect of resilience in the relationship between workplace incivility and job burn-out

The results of this study showed that, compared with new nurses with low levels of resilience, those with high levels of resilience were less affected by workplace incivility under the same working environment ([table 3](#)). A concept called the 'schema' in constructivism theory is an individual perception about the world and a way of thinking⁵⁴ and a frame or an organisation structure of psychological activity. A schema is the starting point and the core of cognitive structure or the basis of human knowledge.⁵⁵ Therefore, the formation and transformation of schema is essential for the cognitive development of individuals. Cognitive development is affected by three processes: assimilation, hue and balance.⁵⁶ Resilience represents positive cognition, and individuals with high levels of resilience are more likely to recover from negative experiences and better adapt to the current environment.⁵⁷ Resilience is also a necessary mental defensive ability when facing workplace incivility. From the theoretical kernel of edge angle, it is the positive selection and processing

method under adversity.⁵⁸ People with higher resilience can possess a positive attitude in the face of adversity. In this study, workplace incivility is seen as a working adversity for new nurses exposed to the unfriendly atmosphere. New nurses with higher levels of resilience could adjust their psychological cognition with positive emotions⁵⁹ and thereby curb the consequence of incivility for physical and psychological harm and job burn-out slightly. For example, when their working ability is questioned, new staff with higher levels of resilience are more likely to try their best to improve and win the approval and respect of the patients or colleagues by their efforts without negative emotions. In addition, resilience presents the property of positive psychological traits.⁶⁰ Fredrickson's expand-construction theory explains that the positive emotional experience reflects the individual's mental well-being and promotes the growth and development of the individual.⁶¹ Further, positive emotions have two core functions: first, instantaneous expansion function, which can expand instant thinking, and second, long-term function of construction, which can construct long-term physical, psychological, social resources and other resources.⁶² According to the two functions, new nurses with high levels of resilience are good at converting the pressure into motivating force; therefore, the negative emotions may be converted to positive emotions to reduce the loss of physical and mental energy of new nurses. Hence, new nurses with high levels of resilience can alleviate the negative impact of workplace incivility on job burn-out (shown in table 3). Consequently, resilience makes a positive adjustment by reducing the loss of mental health and decreasing the risk of job burn-out of new nurses. This study suggests that hospital managers should increase training to enhance the resilience of new nurses. The strategies used by nurses to build resilience mainly included cognitive reframing, emotional toughness, emotional connections and work-life balance, and compassionate behaviour.³³ First, nursing managers should regularly provide communication skills and interpersonal adaptation training for new nurses and help new nurses to establish a correct cognitive of workplace incivility and improve their emotional toughness. Second, nursing administrators should encourage nurses to establish a work-family balance and expand their social networks. Third, nursing management should also increase organisational care such as timely discovery, adequate understanding and communication for new nurses who face workplace incivility.

Limitations

The survey collected data through an online questionnaire. The questionnaire contains many questions, and there may be reporting bias. This research adopted a snowball sampling method; thus, the regional data source ratio would have been unbalanced, and the data were restricted by regional results. Therefore, a rigorous sampling technique and a larger sample are needed in future research. This study is based on a cross-sectional design, which prevents determining the causal relationship between variables. We used several scales from abroad

with cultural differences, requiring additional academic concern in a Chinese context. The data were collected from the self-reports of nurses from an online survey with less monitoring, which may have led to response bias due to social desirability or negative effect.

Conclusion

This study focused on workplace incivility in China's nursing field, using 'anxiety' and 'resilience' as a new interpretation path to analyse the mediating and moderating mechanism of the effects on new nurses' job burn-out caused by workplace incivility. First, this study verified that workplace incivility has a significant predictive function in job burn-out of new nurses in China's hospital setting. Second, anxiety played a partial mediating role in the relationship between workplace incivility and job burn-out. Finally, resilience played a moderating role in the relationship between workplace incivility and job burn-out. Workplace incivility in hospitals towards new nurses could increase their psychological anxiety⁶³ and, in turn, gradually generate job burn-out. New nursing staff with high levels of resilience can effectively buffer the negative effects caused by workplace incivility, and the resilience can also repair psychological trauma to a certain degree after exposure to workplace incivility. The model theoretically extends the study of workplace incivility, especially to the Chinese new nursing group. This model suggests that nursing managers should pay attention to the growth and development of new nurses in the practice of nursing management, improving the resilience of new nurses and reducing their anxiety. This will help to reduce job burn-out of new nurses, thereby promoting the work efficiency and saving management cost. The study also provides a new theoretical contribution and practical guidance on maintaining physical and mental health of the Chinese new nurses. In turn, potential loss of nursing organisation can be prevented.

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Contributors Conceived and designed the experiments: TS, YS and HG. Performed the experiments: ZS, SZ. Analysed the data: FX, JW and XD. Contributed reagents/materials/analysis tools: TS, SZ and XD. Wrote the paper: YS, HG, ZS and LF.

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