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The mediating effect of job burnout on the relationship between practice environment and workplace deviance behavior of nurses in China: a cross-sectional study

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Abstract

Background Faced with a shortage of nurses in China, the factors affecting the stability of the nursing workforce require urgent attention. The workplace deviance behavior of nurses is considered an important behavior in clinical practice, which will bring negative effects and affect the development of nurse team. However, no research has been done to examine the associations among workplace deviance behavior of nurses, practice environment and job burnout. Thus, this study aimed to determine the influence of practice environment on nurses' workplace deviance behavior and confirm the mediating role of job burnout.

Methods This study was designed as a multicentre cross-sectional study, and recruited 598 nurses in China to complete a survey of the general information questionnaire, Scale of Workplace Deviance Behavior of Nurses, Practice Environment Scale, and Maslach Burnout Inventory General Survey. The model was examined using descriptive analysis, Pearson's correlation analysis, and the PROCESS Macro in SPSS 26.0.

Results The results of the correlation analysis demonstrated a significant relationship between the practice environment and work deviance behavior of nurses, as well as a negative relationship between job burnout and these two factors. Moreover, the relationship between practice environment and work deviance behavior among nurses was partially mediated by job burnout.

Conclusion A healthy practice environment and a decrease in job burnout could directly lower the work deviant behavior of nurses. Hospital managers must actively endeavor to improve the practice environment for nurses by fostering a just, fair, and supportive practice environment and by keeping lines of communication open and strong with the nursing staff. Furthermore, managers can also reduce nurses' work deviance behavior by lower their job burnout.

Keywords Nurse, Workplace deviance behavior, Practice environment, Job burnout, Cross-sectional study

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Introduction

The aging population and the growing prevalence of chronic disease are driving a significant increasing in the need for nursing services [1]. However, with only 3.7 registered nurses per 1,000 people as of 2022, this figure falls short of the World Health Organization's recommended minimum of 4.45 per 1,000 people, leading to a nursing shortage that negatively affects patient care and healthcare efficiency [2, 3]. Clinical nurses deal with a great deal of strain, including long hours, night shifts, unpredictable workplace violence, and other occupational stressors [4, 5]. These factors have a detrimental impact on nurses' mental health, the standard of care they provide, and the rate at which they leave their jobs [6].

Workplace Deviance Behavior(WDB) refers to the voluntary behavior of employees in violation of important organizational norms, considered as a deliberate behavior of inappropriate behavior by employees [7], which lead to a negative effect on the organization and its member [8], and may cause great potential harm to the organization. With the development of the economy and technology and the prevalence of individualism, workplace deviance behavior has become a common workplace problem. Previous empirical studies showed bad behaviors and professional deviations can lead to many potential problems, such as low efficiency, job burnout, interpersonal conflicts, and damage to the collective public image [7]. The workplace deviance behavior of nurses is considered an important behavior in clinical practice, which will bring negative effects and affect the development of nurse team, and considered to be one of the important indicators for evaluating team cohesion, stability, and development potential [9].The governance of workplace deviance behavior has gradually become more important and has become a focus of study in many fields [10–12].

The practice environment is an organizational characteristic of the work setting that affects professional nursing practice [13]. It encompasses the physical, social, and psychological aspects of the workplace that are perceived by those who work there [14]. A positive practice environment fosters strong cooperation between doctors and nurses, ensures positive nurse-patient relationships, provides adequate support and staffing, and contributes to the psychological well-being of nurses [15]. Research has demonstrated that an improved practice environment is associated with lower intentions to leave [16]. Accordingly, the practice environment may be directly associated with work deviance behavior, and indirectly associated with work deviance behavior through job burnout. Nevertheless, these hypothetical pathways have not been tested [17].

Job burnout is a state of physical, mental, emotional, and social exhaustion resulting from unmanaged work stress and inadequate support from managers and colleagues, which reduces motivation for work [13, 14]. Studies have shown that high work pressure can lead to anxiety, depression, dissatisfaction, and reduced loyalty among clinical nurses, making them more likely to leave [15], and job burnout is directly associated with job satisfaction and the intention to leave [16–18]. This negatively impacts the well-being and health of nurses and can lead to workplace deviance behavior, affecting the quality of nursing services and team stability in the long term [19].

Previous research has demonstrated the significant impact of job burnout and the practice environment on nurses' work, including their job dissatisfaction, mental well-being, and intention to leave [20–22], the significant impact of job burnout and the practice environment on nurses' work, including their job dissatisfaction, mental well-being, and intention to leave [23]. This knowledge gap presents a barrier to developing targeted interventions to address workplace deviance behavior among nurses [14, 16, 24–26]. Therefore, this study aims to explore the influence of the practice environment on nurses' workplace deviance behavior, validate the mediating role of job burnout, and provide valuable insights for developing interventions to reduce workplace deviance behavior, stabilize the nursing workforce, improve nurses' well-being, and decrease turnover rates.

Social Cognitive Theory (SCT), developed by Albert Bandura [27], emphasises that individual behavior is influenced by environmental and personal factors. This theory provides this study with theories that can be used to understand how the work environment(independent variable) influences work deviant behavior(dependent variable) through job burnout(mediating variable). A supportive practice environment has the power to enhance nurses' confidence and lower job burnout. This, in turn, allows them to meet job requirements with ease and recognize the intrinsic value of their tasks. Additionally, it can reduce work deviation behavior among nurses [28]. As a result, we propose that job burnout may mediate the relationship between the practice environment and work deviation behavior of nurses. Based on the literature review, this survey aims to assess the work deviation behavior of nurses and explore potential mediating mechanism. Three hypotheses are presented in this study, as shown in Fig. 1.

Hypothesis 1 The practice environment is inversely related to work deviation behavior of nurses.

Hypothesis 2 The practice environment negatively affects job burnout, and job burnout positively affects work deviation behavior of nurses.

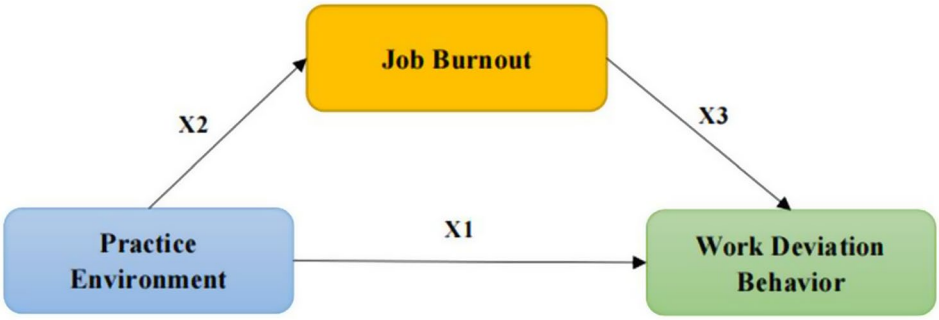

Fig. 1 Theoretical model and hypotheses

Hypothesis 3 The practice environment could negatively predict work deviation behavior of nurses and the relationship between them is partly mediated by job burnout.

Methods

Study design

A cross-sectional study design was adopted in this study from October 2021 to January 2023. Nurses in Chinese hospitals were recruited from 6 cities in China by convenience sampling. This study was conducted in the form of a questionnaire survey after obtaining the nurse's informed consent. The research was carried out and the results were documented in adherence to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) recommendations.

Participants

A total of 598 nurses participated in this study. Participants were invited to participate in this study who were trained and registered nurses, had more than one year clinical experience and were willing to take part in the study, but nurses who had been absent for more than 3 months, such as sick leave, maternity leave, during the study were excluded.

Ethical considerations

The study protocol was approved by the Ethics Committee of the First Hospital Affiliated to China Medical University (protocol approval No. [2020]194). They participated in this study voluntarily, and all research materials were kept confidential.

Data collection

General information questionnaire

The general information questionnaire questionnaire designed by the researcher, including demographic information and work-related information [29]. The demographic characteristics of the nurses included gender, age, birthplace, education, whether an only child and marital status. The general information related to the nurses' work in the hospital, including hospital level, position, departments, monthly income, length of service (in years), the degree of nurse-patient contradiction, work pressure and job satisfaction.

Scale of workplace deviance behavior (WDB)

The Workplace Deviance Behavior Scale, developed by Robinson et al. [8]offers a comprehensive means to assess employees' deviant behavior in the workplace. Zhang Hui et al. [30] revised the Chinese version of the scale of workplace deviance behavior of nurses according to the characteristics of the nursing population. The scale included 5 dimensions and 21 items, namely interpersonal behavior deviation (6 items), organizational behavior deviation (6 items), aggressive behavior towards service objects (2 items), aggressive behavior towards organization members (4 items), and disciplinary violation behavior (3 entries). Each item is scored on a 5-point scale ranging from 1 to 5. The higher the score, the more serious the nurse's workplace deviance behavior. The Cronbach's α coefficient of the scale was 0.937.

Practice environment scale (PES)

Practice Environment Scale was compiled by Lake et al. [31] to measure the characteristics of the working environment of nurses, which was translated into Chinese by Wang Li et al. [32]. The scale included 5 dimensions and 31 items, namely the basis of high-quality nursing services(10 items), nurses' participation in hospital affairs(9 items), medical care cooperation(3 items), and nursing managers ability and leadership style(5 items), sufficient human and material resources(4 items), the option score from "completely disagree" to "completely agree" was 1 to 4 points respectively. The higher the score, the better the nursing work environment, the Cronbach's α coefficient of the PES was 0.91.

Maslach burnout inventory general survey (MBI-GS)

Maslach Burnout Inventory General Survey was compiled by Maslach et al. [33], which is a universal tool for measuring job burnout, Song Shuang et al. translated and formed the Chinese version [34], including 3 dimensions

and 22 items, namely emotional exhaustion(9 items), depersonalization(5 items), and personal accomplishment(8 items). The scale adopted the Likert 7-level scoring method, and the score of options from "never" to "every day" was 0–6 points respectively. The higher the score, the heavier the degree of burnout. The Cronbach's α coefficient of the MBI-GS scale was 0.930.

Date collection

The data for this study were gathered using Wenjuanxing(https://www.wjx.cn), a highly reputable online survey platform in China known for its reliability and user-friendliness in research applications [1]. This platform was carefully chosen for its secure survey hosting and ease of access for participants. To ensure easy access, a Quick Response(QR) code was created and shared via WeChat, a widely popular mobile app in China. The principal investigator established collaborative relationships with the head nurses in hospitals across 6 cities, providing them with the survey link and entrusting them with its distribution to their nurses. Before participating, nurses were provided with comprehensive information about the study, including its purpose, significance, and procedures. This information was effectively communicated both verbally by the counselors and in writing through an introductory page on the Wenjuanxing platform.

Table 1 Demographic characteristics and results of the univariate model($N=598$)

Items	*N*	Percentage (%)	WDB Total score($\bar{x}\pm s$)	t/F	*P*
Gender				19.19	< 0.05
Male	57	9.53	29.65 ± 12.89		
Female	541	90.47	26.88 ± 8.34		
Age				1.27	0.29
< 25	46	7.7	25.59 ± 10.74		
25 ~ 34	353	59.0	27.21 ± 8.98		
35 ~ 44	163	27.3	27.85 ± 8.56		
≥ 45	36	6.0	25.42 ± 6.69		
Birthplace				2.89	0.09
Rural	250	41.8	27.97 ± 9.93		
Town	348	58.2	26.56 ± 8.05		
Education				0.71	0.54
Secondary school	5	0.8	24.40 ± 5.64		
Junior college	61	10.2	27.98 ± 13.95		
Bachelor's degree	516	86.3	27.00 ± 8.08		
Master degree and above	16	2.7	29.15 ± 8.90		
Whether an only child				8.89	< 0.01
Yes	315	52.68	26.10 ± 7.61		
No	283	47.32	28.32 ± 10.03		
Marital status				0.52	0.67
Single	191	31.9	26.76 ± 9.25		
Married	391	65.4	27.35 ± 8.81		
Divorced	14	2.3	27.64 ± 7.28		
Widowed	2	0.3	21.00 ± 0.00		

Notes: WDB: Work Deviance Behavior

Statistical analysis

This study utilized IBM SPSS Statistics(version 26.0) for comprehensive data analysis. Categorical variables were depicted using numbers and percentages, while continuous variables were presented as Mean ± Standard Deviance(SD) for parametric data. The Pearson correlation test was expertly utilized to thoroughly assess relationships between WDB, MBI-GS, and PES. We then proceeded to exam in the impact of sociodemographic information on nurses' work deviance behavior, this examination employed independent sample t-test and one-way analysis of variance (ANOVA). Mediation analysis was skillfully conducted with the SPSS macro PROCESS Model 4 [35]to delve into the profound effect of job burnout on the relationship between practice environment and workplace deviance behavior, with significant demographic data were selected as control variables in the multivariate hierarchical model based on the univariate analysis ($p<0.05$). If the 95% confidence intervals did not encompass zero, the mediating effect was rightly considered significant. The chosen significance level for the study was steadfastly set at a p-value of 0.05 or less.

Results

Participant characteristics

A total of 598 nurses were surveyed in this study, including 57 males(9.5%) and 541 females(90.5%). Table 1 shows the demographic characteristics of the sample population and the results of the univariate model, including gender, age, birthplace, education, whether an only child and marital status. Appendix 1 shows general information relating to work experience in hospitals among nurses. The score of WDB, PES and MBI-GS is shown in Table 2. It is generally accepted that the mean of scores on a Likert scale with a scale of 1 to 5 ranges from 1 to 2.4 for a low level, 2.5 to 3.4 indicates a moderate level, and 3.5 to 5 for a high level [36, 37]. This study showed a mean score of 1.29 ± 0.42 for each entry of nurses' workplace deviance behaviour, which is in line with the lower level (Table 2). Notably, the highest scoring dimension was found to be interpersonal behavior deviance(1.37 ± 0.52), while disciplinary violation behavior received the lowest score(1.15 ± 0.41).

Correlation among WDB, PES and MBI-GS

Pearson correlation analysis between nurses' workplace deviance behavior, practice environment, and job burnout scale showed that there was a significant negative correlation between nurses' workplace deviance behavior

Table 2 The score of WDB, PES and MBI-GS($N=598$)

Items	Total score ($\bar{x}\pm s$)	Average score ($\bar{x}\pm s$)
WDB	27.15 ± 8.90	1.29 ± 0.42
Organizational behavior deviation	8.09 ± 2.93	1.35 ± 0.49
Interpersonal behavior deviation	8.19 ± 3.11	1.37 ± 0.52
Aggressive behavior towards organization members	4.69 ± 1.83	1.17 ± 0.46
Aggressive behavior towards service objects	2.72 ± 1.14	1.36 ± 0.57
Disciplinary violation behavior	3.45 ± 1.22	1.15 ± 0.41
PES	87.44 ± 16.11	3.12 ± 0.58
Basis of high-quality nursing services	29.56 ± 4.99	3.28 ± 0.55
Nurses' participation in hospital affairs	24.08 ± 5.31	3.01 ± 0.66
Medical care cooperation	9.68 ± 1.79	3.23 ± 0.60
Nursing managers ability and leadership style	11.35 ± 2.95	2.84 ± 0.74
Sufficient human and material resources	12.77 ± 2.36	3.19 ± 0.59
MBI-GS	74.17 ± 20.83	3.37 ± 0.95
Emotional exhaustion	26.16 ± 11.72	2.91 ± 1.30
Depersonalization	9.84 ± 5.30	1.97 ± 1.06
Personal accomplishment	38.18 ± 12.69	4.77 ± 1.59

Notes: WDB: Work Deviance Behavior; PES: Practice Environment Scale; MBI-GS: Maslach Burnout Inventory General Survey

Table 3 Correlation among WDB, PES and MBI-GS(N = 598)

	WDB	MBI-GS	PES
WDB	1		
MBI-GS	0.295**	1	
PES	-0.299**	-0.190**	1

Notes: ** means P<0.01; **means P<0.05; WDB: Work Deviance Behavior; PES: Practice

and practice environment scale, and a significant positive correlation with job burnout, and the differences were statistically significant($P<0.01$), shown in Table 3.

The result of the hierarchical multiple regression

According to Bolin [38] and Zhonlin Wen [39], we used Process Model 4 for covariate correction and mediation test. All dependent variables, independent variables, and mediating variables were standardized. In order to exclude demographic information from interfering with the results of the study, with significant demographic data (gender and whether an only child) were selected as control variables in the multivariate hierarchical model based on the univariate analysis ($p<0.05$), practice environment was entered as independent variables, while job burnout were treated as mediators and work deviance behavior was deemed as dependent variables for Hierarchical multiple linear regression analysis. As shown in Table 4, regression analysis showed practice environment had a direct negative predictive effect on work deviance behavior (β = -0.285, $p<0.0001$). When job burnout was added in model 3, the regression coefficient of practice

Table 4 Hierarchical multiple linear regression analysis results

Variables	Model 1 (β)	Model 2 (β)	Model 3 (β)
Gender	-0.430	-0.100	-0.090
Whether an only child	0.078	0.086	0.067
Practice environment	-0.177	-0.285	-0.243
Job burnout			0.238
R2	0.043	0.105	0.159
F	8.934***	23.260***	28.120***

Notes: (i) Model 1: the effect of the independent variable on the mediator variable; (ii)Model 2: the total effect of the independent variable on the effect of the dependent variable; (iii) Model 3: the effect of the independent variable and the mediator variable on the dependent variable when they are included together in the regression model; (iv) ***means $P<0.001$

environment on work deviance behavior increased from −0.285 to -0.243, suggesting that job burnout may act as a mediator between practice environment and work deviance behaviors among nurses. The results of this statistical analysis are consistent with this study's hypotheses.

Results of the path analysis

In mediated effects analysis, c refers to the total effect (X→Y), and (a×b) represents the indirect effect (X→M→Y), i.e., mediated effect. The product coefficient test [40–42] was chosen for the judgement of mediation effect in this study, which is the most common test in Bootstrap sampling method, firstly proposed by Baron and Kenny (1986) [41]. It is proposed that its principle is to test whether (a×b) is significant (judged on the basis of whether the confidence interval contains 0 or not), and that significance indicates a mediating effect, whereas non-significance indicates that there is no mediating effect. Based on the method proposed by Igartua and Hayes [35], The bootstrap method was adopted to repeat the extraction 5000 times to calculate the 95% confidence interval to further validate the mediation effect. The results showed the mediating effect value was −0.023, and the bootstrap 95% confidence interval did not include 0, indicating a significant mediating effect of job burnout (Table 5).

The path coefficients are shown in Fig. 2. First, the total effect of practice environment on work deviation behavior (Path c) was −0.158 ($P<0.001$). The coefficients of Paths a, b, and c' were −0.229 ($P<0.001$), 0.102 ($P<0.001$), and −0.134 ($P<0.001$), respectively, which suggests that practice environment, job burnout, and work deviance behavior were independently related.

Furthermore, the indirect effect of practice environment on work deviation behavior through job burnout was −0.023 ($P<0.001$), which suggests that the relationship between practice environment and work deviation behavior was partly mediated by job burnout.

Finally, to understand the ratio of the mediating effect to the total effect, we used the absolute value of (axb)/c [40, 42], to calculate the proportion of the indirect effect

Table 5 Mediating effect analysis

Model	β	SE	*P*-value	Bootstrap 95 CI		Mediation(%)
				CI.L	CI.U	
Total effect (c)	-0.158	0.022	< 0.001	-0.204	-0.115	
Direct effect (c')	-0.134	0.021	< 0.001	-0.177	-0.093	85.35%
Indirect effect (a×b)	-0.023	0.009	< 0.001	-0.042	-0.009	14.65%

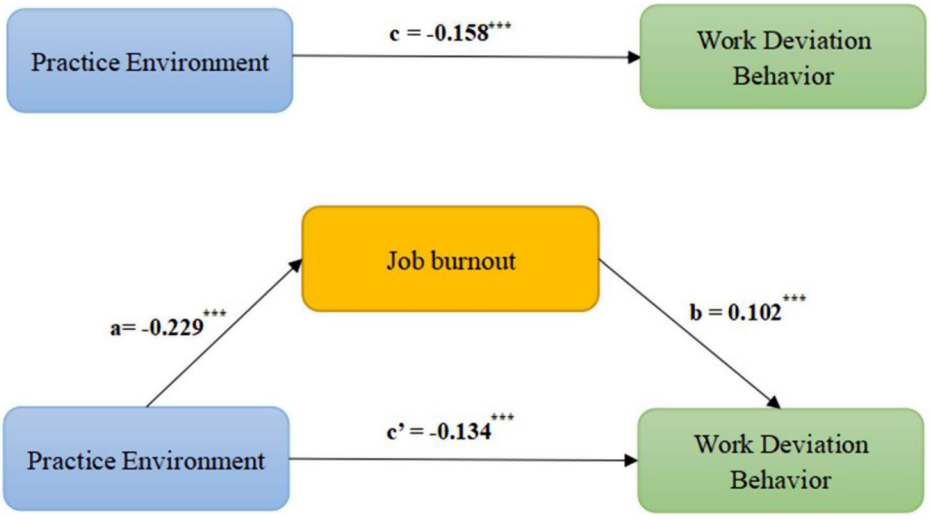

Fig. 2 The hypothesized mediation model relating the effect of Practice Environment on Work Deviance Behavior through Job burnout. ***$p < 0.001$

of job burnout, accounting for the total effect of practice environment on work deviation behavior, resulting in a mediating effect of 14.65%. (axb)/c quantifies the proportion of the total effect (c) that is accounted for by the indirect effect(axb). A higher proportion indicates that the mediator plays a significant role in explaining the relationship between the independent and dependent variables. This calculation method is based on mediation models introduced by Baron and Kenny (1986) in their seminal paper [41].

Discussion

This study described the current status of work deviance behavior of nurses in China, and explored the associations of practice environment, job burnout and work deviation behavior as well as confirmed the mediating role of job burnout in this relationship. The research uncovered three significant findings. Firstly, work deviance behavior among nurses in China was found to be at a lower level. Secondly, the practice environment was observed to have a negative association with work deviation behavior, while job burnout was positively linked to it. Finally, the study revealed that the practice environment could negatively predict work deviance behavior and the relationship between them was partly mediated by job burnout.

The issue of nurses' workplace deviance behavior cannot be overlooked in today's medical environment [23]. Positive working behavior among nurses is crucial for enhancing patient medical service experience and strengthening the cohesion of medical and nursing groups [30]. The results of our study show that workplace deviance behavior of nurses in China was at a lower level, which indicates that nurses are less likely to exhibit deviant workplace behaviours in China, which is consistent with the work deviation level of Egyptian nurses studied by Hashish et al. [23]. This may be related to the continuous improvement of the staff structure and management level of the nurse team in recent years. The dimension with the highest score of WDB was the behavioral deviation at the interpersonal level, which indicated that the behavior of nurses in interpersonal relationships needs to be improved. The higher score in this aspect may be due to the heavy workload of nurses and the increase in nurse-patient conflicts, which affects the physical and mental health of nurses [24, 43]. As a result, the risk of interpersonal conflicts between patients, family members and even colleagues is greater, and the possibility of behavioral deviations at the interpersonal level is higher [44]. Nurse managers should actively work towards establishing a supportive and respectful team relationship for nurses. By providing efficient access to information and

resources, as well as appropriate support and autonomy to complete professional tasks, nurses will feel valued and more emotionally and physically connected to their work [45]. Additionally, considering the individual needs of nurses and resolving the conflict between work and personal life will help minimize workplace deviant behavior among nurses.

In this study, we found a significant negative correlation between nurses' workplace deviance behavior and practice environment, indicating that the better the practice environment, the fewer occurrences of workplace deviance behavior. The possible reason is that the practice environment refers to the sum of various elements that directly or indirectly affect the nursing system. Improving the nursing working environment is the basic way to improve the job satisfaction of nurses, reduce the work deviance behavior and the turnover rate of nurses [21], consistent with previous studies [46] showed that practice environment factors, such as nurse-physician relationships, nursing management, nursing-patient relationship and workload are considered predictors of work deviance of nurses [47]. According to Alsadaan et al. (2023), a positive and supportive leadership environment fosters a sense of value and motivation among nurses, affecting their overall mindset and job satisfaction [25]. Leaders exemplifying ethical conduct and cultivating a culture of respect and collaboration markedly diminish the likelihood of disruptive behaviors among nursing staff, fostering a positive and industrious work environment [48]. A positive environmental atmosphere plays a crucial role in overseeing nurses' development, and a harmonious department environment is conducive to stimulating nurses' enthusiasm for work and enhancing their ability to assess and solve problems. This, in turn, helps reduce work deviation behavior among nurses.

There was a significant positive correlation between the total score of nurses' workplace deviance behavior and the MBI-GS score, indicating that the higher the score of job burnout, the higher the nurses' work deviance behavior score. Job burnout can result in emotional exhaustion [34], decreased work motivation, and reduced job satisfaction [49], all of which can lead to increased workplace deviance behavior among nurses. Studies have indicated that implementing a reward mechanism significantly impacts the value of accrediting nurses, reducing emotional exhaustion, and improving satisfaction [50, 51]. By combining rewards and encouragement, utilizing intelligent stimulation and contingency rewards, nurses' sense of belonging and identity in the team can be enhanced, work enthusiasm can be mobilized, and the effective development of nurses' standardized professional behavior can be ensured. Nurse managers need to establish detailed job responsibilities and division of labor, schedule flexible shifts based on workload, and implement a job rotation system to promptly rotate nursing staff with different levels of expertise to reduce job burnout and workplace deviance behavior.

In addition, this study found that the practice environment has a negative impact on job burnout, this suggests that positive practice environment reduce the incidence of job burnout and, conversely, negative work environments increase job burnout. It emphasizes the importance of supportive practice environments in reducing nurses' job burnout, as evidenced by previous studies [52]. When nurses have efficient access to resources, support, and autonomy, they feel more valued and connected to their work [45]. Additionally, our findings underscore the correlation between job burnout, interpersonal relationships, leadership affinity, group efficacy, and group value [53]. Furthermore, the study confirms the close relationship between job burnout and nurses' work deviance behavior [13, 16, 45]. The presence of internal negativity can significantly impact the behavior of nurses in a detrimental way. Research shows that positive emotions such as happiness and trust are associated with favorable behavior, whereas passive emotions like nervousness and anxiety are linked to unprofessional conduct [54]. It is vital for nurse managers to not only focus on clinical care but also prioritize the physical and mental well-being of nurses. They should proactively organize team-building activities, provide a platform for nurses to relax and alleviate stress, foster team unity, and enhance the management of nurses' psychological well-being. This approach will lead to improved communication and understanding among colleagues, foster stronger relationships, and ultimately reduce instances of workplace deviant behavior among nurses.

Our findings suggest that the practice environment had a direct negative effect on workplace deviance behavior and could have an indirect influence through job burnout. Job burnout partially mediates the relationship between practice environment and nurses' deviance workplace behaviours. This means that interventions can be made to provide better practice environment that are conducive to the reduction of nurses' job burnout, and in turn the reduction of workplace deviant behaviours among nurses. Many researchers validated job burnout as a mediator of work engagement, quality of care, career satisfaction and propensity to leave [17, 55]. However, limited studies have explored the interplay between job burnout, practice environment and work deviance behavior in nurses. It is crucial to recognize that external factors can significantly shape an individual's internal motivation [56]. In light of our findings, we posit that a positive work environment, characterized by transformational leadership, organizational support, collaborative relationships, and adequate staffing, can effectively nurture nurses' intrinsic motivation [52], leading to reduced

work deviance behavior. These results emphasize the importance of enhancing the practice environment to directly mitigate clinical work deviance and indirectly lower work deviance behavior by addressing job burnout. Future research should prioritize investigating the impact of interventions targeting the work environment and job burnout on work deviance behavior among nurses.

Limitations

This study has some value in exploring the relationship between practice environment, job burnout and nurses' deviance behaviours in the workplace, but there are still some limitations. Firstly, this study utilized self-reported data to investigate nurses' workplace deviance behavior. It was noted that nurses might be concerned about potential criticism, leading to underreporting of their workplace deviant behavior. Therefore, the actual extent of workplace deviance behavior may be higher than what was reflected in the survey results. Secondly, this study encountered an unbalanced gender distribution during data collection, which may be due to the fact that in China the nursing profession is predominantly female and less male. Therefore, caution should be taken with the findings of this study, which may reflect more of the views and experiences of the female nurse population. Thirdly, We used questionnaire star for data collection, which has great convenience, but the security of collecting data online and may lead to misunderstanding of the research questions, care should be taken to protect the privacy of the participants during the research process and timely clarification should be done. Fourthly, our study used convenience sampling and did not analyse nurses' workplace deviant behaviours in different departments and different levels of hospitals. It is suggested that future studies involve a larger, more diverse sample, possibly including multi-center studies to explore nurses' deviance behavior across different departments and hospitals at different levels.

Conclusion

This comprehensive study delved into the workplace deviant behavior of nurses in China, revealing a medium overall score and a pressing need for improvement in nurses' interpersonal relationships. Notably, the study identified the adverse impact of the practice environment on job burnout and work deviance behavior among nurses, with job burnout serving as a mediator in this relationship. Consequently, it is imperative for hospital managers to proactively enhance the practice environment for nurses by fostering a supportive, fair, and just workplace, ensuring effective communication, facilitating career development, and demonstrating genuine care for their well-being. Moreover, by bolstering the positive practice environment and mitigating job burnout through increased autonomy and improved work impact, managers can effectively curb nurses' work deviance behavior. Understanding these intricate pathways among the environment, job burnout, and work deviance behavior will empower hospital management and nurse managers to implement targeted interventions, standardize nurse behavior, fortify the nursing team, and elevate the quality of nursing services. In light of these findings, nursing managers are urged to vigilantly address workplace deviance behavior and implement measures such as nurturing a positive practice environment, fostering camaraderie among colleagues, alleviating job burnout, and providing incentives to bolster nurses' zeal, thus ensuring the stability of the nursing team.

Abbreviations

WDB	Work Deviance Behavior
PES	Practice Environment Scale
MBI-GS	Maslach Burnout Inventory General Survey

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12912-024-02663-9.

Supplementary Material 1

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Author contributions

YL and XTZ contributed to design the study, analyze the data, and revise the manuscript. YL, WJY, and QL contributed to design the study, collect the data, and revise the manuscript. YL wrote the manuscript. ZY, YL and APW contributed to statistical analysis, data interpretation and revising manuscript. All authors contributed to the article and approved the submitted version.

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Data availability

The datasets used or analysed during the current study available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The study protocol was approved by the Ethics Committee of the First Hospital Affiliated to China Medical University (protocol approval No. [2020]194). The research was carried out and the results were documented in adherence to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) recommendations. The survey was conducted anonymously, which fully protected the privacy of the respondents. All data were available only to the research team and were used for the purposes of this study only. All participants provided informed consent and participated voluntarily.

Consent for publication

Not applicable.

Clinical trial number
Not applicable.

Competing interests
The authors declare no competing interests.

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