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The Relationship Between Perceived Organizational Support and Occupational Stress: A Cross-Sectional Study Among Clinical Nurses in China

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Abstract

Background Clinical nurses endure long-term high occupational stress that induces burnout and turnover, harming nursing quality. Perceived organizational support can ease stress, while psychological capital and emotional intelligence act as internal protective resources.

Objectives To explore the mechanism by which clinical nurses' perceived organizational support affects occupational stress, and examines the chain mediating effects of psychological capital and emotional intelligence between them, providing empirical evidence for alleviating nurses' occupational stress and optimizing nursing management.

Methods A cross-sectional descriptive study design was adopted. From September to November 2025, 511 clinical nurses from a tertiary hospital in Henan were selected through convenience sampling as research subjects. Questionnaires were administered using the Perceived Organizational Support Scale, Nurse Psychological Capital Scale, Emotional Intelligence Scale, and Core Occupational Stress Scale. Data processing and chain mediation effect testing were conducted using Model 6 in the PROCESS v4.1 macro program in SPSS.

Results Perceived organizational support is significantly positively correlated with psychological capital and emotional intelligence (r = 0.701, 0.519, P < 0.01), and significantly negatively correlated with occupational stress (r= -0.661, P < 0.01); the direct effect of perceived organizational support on clinical nurses' occupational stress is significant (β= -0.348, P < 0.001), with a direct effect size of 59%. Between perceived organizational support and occupational stress, psychological capital and emotional intelligence play mediating roles both individually and jointly as a chain mediation, with a total mediation effect of 41%.

Conclusions Psychological capital and emotional intelligence play a chain mediating role between clinical nurses' perceived organizational support and occupational stress. Perceived organizational support can not only directly alleviate occupational stress but also reduce the risk of occupational stress in clinical nurses by enhancing psychological capital and emotional intelligence.

Introduction

Occupational stress refers to persistent physiological and psychological strain triggered by mismatches between job demands and individuals’ available resources, capabilities or personal needs[1]. Nursing is universally recognized as a high-stress occupation characterised by heavy workloads, frequent exposure to life-or-death clinical scenarios, strained doctor–patient communication, and pervasive occupational risks, leaving frontline clinical nurses chronically trapped in elevated stress states[2]. Cumulative occupational stress among nurses correlates robustly with elevated medical error rates, clinical burnout, voluntary turnover, and compromised patient care quality, evolving into a prominent global public health and healthcare management challenge[3].

Within the Chinese healthcare context, the burden of work-related stress on clinical nurses is further amplified by demographic ageing, uneven distribution of premium medical resources, and intensified patient–provider tensions, which collectively inflate daily nursing workloads[4, 5]. Prior epidemiological evidence indicates that approximately 83% of Chinese clinical nurses experience moderate to severe occupational stress, with stress severity markedly exceeding that observed in most other professional cohorts[6, 7]. Beyond deteriorating nurses' physical and mental wellbeing, prolonged stress exacerbates turnover intention, destabilising nursing teams and undermining the long-term sustainability of domestic healthcare delivery systems[8]. Accordingly, identifying actionable pathways to mitigate nurses' occupational stress carries both theoretical significance and urgent practical value.

Perceived organisational support captures employees' holistic subjective perceptions of their institution's care, recognition and tangible assistance[9]. Rooted in social exchange theory, reciprocal exchange dynamics govern employee–organisation interactions: nurses who perceive consistent organisational support develop a reciprocal obligation to reciprocate institutional investment through improved work engagement and attenuated stress reactivity[10]. Accumulated nursing research[11] corroborates that perceived organizational support buffers occupational strain, elevates job satisfaction, and curtails turnover behaviours, laying the theoretical groundwork for Hypothesis 1: perceived organizational support exerts a significant negative predictive effect on clinical nurses' occupational stress.

Psychological capital is a positive psychological resource complex formed by individuals during their growth and development, specifically encompassing four core dimensions: hope, resilience, self-efficacy, and optimism[12]. Conservation of resources (COR) theory posits that intentional preservation and replenishment of internal and external psychological resources enable individuals to deploy adaptive coping strategies amid stressors, facilitating resource restoration and iterative accumulation. As a vital intrinsic positive resource, psychological capital equips nurses to sustain adaptive mental states when confronting strenuous clinical duties and complex interpersonal conflicts, strengthening stress resilience[13]. As an important internal positive resource, psychological capital can help nursing staff maintain a positive mental state and enhance their stress coping abilities when facing high-intensity clinical work, complex doctor-patient relationships, and other occupational pressures[14]. Research shows that perceived organizational support, as an external organizational resource perceived by individuals, can effectively enhance core dimensions of nurses' psychological capital, such as self-efficacy and optimism, by providing concrete forms of support like emotional support, career development opportunities, and workplace optimization[15]. Given that perceived organizational support can indirectly alleviate occupational stress by supplementing individual resource reserves, and that psychological capital has a significant buffering effect between stressors and stress responses, this study therefore proposes Hypothesis 2: psychological capital may play a mediating role between perceived organizational support and occupational stress.

Emotional intelligence refers to an individual's ability to recognize, understand, and regulate their own emotions as well as those of others, and this ability can be enhanced through education, training, or

practical experience[16]. In nursing, emotional intelligence is a key trait that affects nurses' professional performance and their ability to cope with stress[17]. Research shows that nurses with high emotional intelligence are better able to handle complex care situations, optimize clinical thinking and decision-making, and that emotional intelligence is significantly negatively correlated with occupational stress, which can be indirectly alleviated through enhanced emotion regulation[18]. From the perspective of resource interaction, the emotional support provided by organizations can reduce nurses' emotional exhaustion and provide a psychological foundation for improving their emotion regulation abilities; meanwhile, career development support can offer nurses external conditions to enhance their emotional awareness and coping skills, thereby promoting the overall development of emotional intelligence[19]. Given that perceived organizational support can alleviate occupational stress by enhancing emotional intelligence, an internal resource for managing emotions, and that emotional intelligence has a significant buffering effect between stressors and stress responses, this study therefore proposes Hypothesis 3: emotional intelligence may mediate the relationship between perceived organizational support and occupational stress.

The formation and relief of occupational stress is a complex dynamic process involving the interaction of multiple factors. Individual psychological traits and organizational environmental factors do not operate in isolation, but may instead have potential chain-like transmission pathways[20]. By integrating resource conservation theory and social exchange theory, we have reason to believe that external organizational resources, when enhanced through internal psychological resources, can ultimately be transformed into dynamic emotional regulation abilities that help alleviate occupational stress[21]. Specifically, perceived organizational support, as a key external social resource, may promote the development of nurses' emotional recognition and regulation abilities by enhancing their internal psychological capital. Emotional intelligence, as a form of dynamic psychological regulation ability, may help nurses effectively maintain psychological resources and reduce resource depletion in high-stress situations, thereby directly alleviating occupational stress. Based on this, this study proposes Hypothesis 4: psychological capital and emotional intelligence may play a chain-mediating role between perceived organizational support and occupational stress.

Nurses’ occupational stress remains a widely investigated global public health topic, yet existing literature has primarily examined discrete predictors and isolated mediating pathways[22, 23]. The integrated interactive mechanisms uniting perceived organizational support, psychological capital, emotional intelligence and occupational stress remain underexplored within the cultural and institutional context of Chinese clinical nursing populations, creating a clear research gap. To address this limitation, the present study systematically delineates the predictive effect of perceived organizational support on occupational stress among Chinese clinical nurses and unpacks the serial chain mediating pathways of psychological capital and emotional intelligence. The findings aim to comprehensively disentangle the multi-pathway mechanisms shaping nurses’ occupational stress, furnish empirical evidence for developing targeted, multi-dimensional stress intervention programmes, and inform evidence-based nursing management optimisation. The conceptual framework of the proposed serial mediation model is illustrated in Fig. 1.

Methods

Study design and participants

Our study utilized a cross-sectional descriptive research design, adhering closely to the STROBE checklist for cross-sectional studies throughout its execution. Participants were recruited from a major public hospital in Henan Province between September and November 2025, employing a convenience sampling method. The inclusion criteria were as follows: (1) Registered nurses with a minimum of 1 year of clinical experience; (2) Individuals in good physical and mental health, with no history of mental illness; (3) Provision of informed consent and voluntary participation. The exclusion criteria included: (1) Intern nurses, nurses undergoing standardized training, assistant nurses, and nursing students; (2) Nurses on maternity leave, sick leave, or absent for training. According to the sample size calculation method of analytical research, the sample size should be 5 to 10 times the number of variables. This study involved a total of 20 variables. Accounting for a 20% rate of invalid questionnaires, the required sample size was calculated as 120 to 240. Ultimately, the study included 511 nurses.

This study was performed in strict accordance with the ethical principles laid down in the Declaration of Helsinki. It obtained formal ethical approval from the Ethics Research Committee of Henan Provincial People's Hospital (Ethics Approval No.2025-26). Written informed consent was obtained from all participants prior to questionnaire completion. All survey procedures guaranteed participant anonymity and personal-data confidentiality.

Study procedures

Our study collected data through an electronic questionnaire administered via the Questionnaire Star platform(https://www.wjx.cn/). After obtaining approval from the nursing department, we distributed the electronic questionnaire link via DingTalk group and provided standardized explanatory materials to clarify the survey objectives, research significance, and completion procedures. Participants completed the anonymous questionnaire independently after informed consent. The Questionnaire Star homepage featured preset consent prompts, allowing participants to proceed with responses only after agreement. To prevent duplicate submissions, each IP address could only be used once for questionnaire completion. After the data collection was completed, the researchers used the Questionnaire Star platform to retrieve the questionnaires and control the quality. A total of 550 questionnaires were distributed, and 511 valid responses were obtained, resulting in an effective response rate of 92.91%.

Measurements

General information questionnaire

The general information questionnaire was developed by the research team following group discussions. It includes demographic characteristics such as gender, educational level, technical title, position, working years, department type, employment relationship, etc.

Perceived Organizational Support Scale(POSS)

The scale was developed by Zuo[24] based on China clinical nurses' work conditions, comprising two dimensions: affective support and instrumental support, with a total of 13 items. The scoring method uses the Likert 5-point scale, ranging from "very unsatisfactory" to "very satisfactory", with values ranging from 1 to 5. The total score ranges from 13 to 65, with higher scores indicating a higher perceived level of organizational support for the individual. The Cronbach's α coefficient of this scale is 0.926. In this study, the Cronbach's α coefficient of this scale is 0.968.

Nurse Psychological Capital Scale(NPCS)

This scale was developed by Yuan et al.[25]. and underwent reliability and validity tests. It consists of 6 dimensions: hope, collaboration and communication, emotional intelligence, responsibility, resilience, and confidence, with a total of 30 items. The scale uses the Likert 6-point rating method, scoring from "strongly disagree" to "strongly agree" with values ranging from 1 to 6. The total score ranges from 30 to 180, with higher scores indicating a higher level of psychological capital for the individual. The Cronbach's α coefficient of this scale is 0.981. In this study, the Cronbach's α coefficient of this scale is 0.959.

Core Occupational Stress Scale(COSS)

This scale was developed by Wang et al.[26] and is the core scale for measuring occupational stress among Chinese professional populations. It consists of 4 dimensions: social support, organization and rewards, demands and efforts, and autonomy, with 17 items in total. The scoring method uses the Likert 5-point scale, ranging from "strongly disagree" to "strongly agree", with values ranging from 1 to 5. The total score ranges from 17 to 85, with higher scores indicating a higher level of occupational stress for the individual. The Cronbach's α coefficient of this scale is 0.779. In this study, the Cronbach's α coefficient of this scale is 0.861.

Wong and Law's Emotional Intelligence Scale(WLEIS)

The WLEIS is a Chinese indigenous scale developed and validated by Law et al.[27]. based on the theoretical model proposed by Salovey and Mayer. This scale consists of 4 dimensions: "Self-emotional assessment and expression ability", "Others' emotional recognition and assessment ability", "Self-emotional management ability", and "Emotional application ability", with a total of 16 items. The scoring method uses the Likert 7-point scale, ranging from "strongly disagree" to "strongly agree", with values

ranging from 1 to 7. The total score ranges from 16 to 112, with higher scores indicating a higher level of emotional intelligence for the individual. The Cronbach's α coefficient of this scale is 0.833. In this study, the Cronbach's α coefficient of this scale is 0.978.

Statistical analysis

Data were entered and double-checked by two independent researchers using Excel, and all statistical analyses were performed with SPSS version 26.0. Descriptive statistics were presented using frequencies for categorical variables and means ± standard deviations for continuous variables following normality testing. Continuous variables with normal distribution were analyzed using independent-sample t tests and one-way ANOVA to examine differences in occupational stress among subgroups of clinical nurses. Pearson correlation analysis was conducted to assess the relationships among perceived organizational support, psychological capital, emotional intelligence and occupational stress. The Variance Inflation Factor (VIF) was utilized to evaluate the problem of multicollinearity. The chain mediation effect was examined using Model 6 of the PROCESS v4.1 macro for SPSS, developed by Hayes[28]. Mediation effects were tested using the bootstrap method with 5,000 resamples to estimate 95% confidence interval (CI). Statistical significance was set at $P < 0.05$.

Results

Common Method Bias Test

Prior to data analysis, Harman's single-factor test was performed to assess potential common method bias (CMB)[29]. Twelve factors had eigenvalues greater than 1, and the first factor accounted for 43.927% of the variance, which is below the recommended 50% threshold. These results indicate that serious common method bias was not present in this study.

Multicollinearity Assessment

Multicollinearity was assessed using the variance inflation factor (VIF). The VIF values ranged from 1.093 to 2.983, all below the commonly accepted threshold of 5, suggesting that no significant multicollinearity existed among the variables.

Sample characteristics

This study included a total of 511 clinical nurses, among whom 95.5% were female and 95.3% were general clinical nurses. The majority of the nurses had a bachelor's degree or higher (96.3%). More than half of the nurses held intermediate professional titles and had worked for more than 10 years. 62.8% of the clinical nurses had an employment relationship with the hospital in the form of personnel agency, and 299 of them had more than 5 night shifts per month. Detailed data are shown in Table 1.

The univariate analysis results indicated that there were statistically significant differences($P < 0.05$) in the scores of clinical nurses' occupational stress levels across different gender, technical titles,

positions, employment relationships, whether they were specialist nurses, the frequency of night shifts per month, and whether they Conduct psychological training while performing clinical nursing duties.

Mean scores and correlations between variables

As depicted in Table 2, the mean score for occupational stress was 45.90 (SD: 9.45), which was at a moderately high level. Relevant analysis indicates that there is a significant correlation between each pair of variables. Occupational stress was negatively correlated with perceived organizational support, psychological capital and emotional intelligence (r=-0.661, -0.591, -0.574, $P < 0.01$), while perceived organizational support was positively correlated with psychological capital and emotional intelligence ($r = 0.701, 0.519$, $P < 0.01$), and psychological capital was positively correlated with emotional intelligence ($r = 0.503$, $P < 0.01$).

Chain mediating effect test

We selected significant factors as covariates, including the gender, technical title, position, employment relationship, nurse specialism, frequency of night shifts/month, and perform other duties concurrently. All continuous study variables were standardized prior to regression analysis. We set perceived organizational support as the independent variable (X), psychological capital (M1) and emotional intelligence (M2) as sequential mediating variables, and occupational stress as the dependent outcome (Y). The serial multiple mediation model (Model 6) embedded in Hayes' PROCESS v4.1 SPSS macro was adopted to test the hypothesized chain mediating pathways. A bias-corrected non-parametric percentile bootstrap method with 5,000 random resamples was utilized to generate 95% confidence intervals (CIs) for all indirect effects; an interval excluding zero indicated statistical significance of the corresponding mediating pathway.

The results of the regression analysis (Table 3 and Fig. 2) indicate that perceived organizational support has a positive predictive effect on psychological capital and emotional intelligence ($\beta = 1.113, 0.472$, $P < 0.01$), psychological capital has a positive predictive effect on emotional intelligence ($\beta = 0.249$, $P < 0.01$), and both perceived organizational support, psychological capital and emotional intelligence have a negative predictive effect on occupational stress (β=-0.348, -0.096, -0.174, $P < 0.01$).

As summarized in Table 4, none of the 95% bootstrap CIs for the three indirect pathways contained zero, confirming the validity of the hypothesized serial mediation framework. The total standardized effect of perceived organizational support on occupational stress was − 0.585, of which the direct effect of perceived organizational support accounted for 59% (− 0.348) of the total effect size. The aggregated indirect mediating effect contributed the remaining 41% (− 0.237) of the total effect, partitioned into three distinct pathways: (1) the independent mediating path of psychological capital (Ind1: perceived organizational support → psychological capital → occupational stress), accounting for 18% of the total effect; (2) the independent mediating path of emotional intelligence (Ind2: perceived organizational support → emotional intelligence → occupational stress), explaining 14% of the total effect; (3) the sequential chain mediating path (Ind3: perceived organizational support → psychological capital →

emotional intelligence → occupational stress), contributing 8% of the total effect. The complete structural relationships among variables are visualized in Fig. 2.

Table 1
Comparison of different characteristics of participants. (*N* = 511)

Variables	Group	Frequency (%)	Mean ± SD	*t/F*	*P*
Gender	Male	23(4.5)	42.09 ± 10.82	0.720[a]	**0.048**
	Female	488(95.5)	46.08 ± 9.35		
Educational level	Junior college	19(3.7)	45.53 ± 9.58	0.017[b]	0.983
	Undergraduate	473(92.6)	45.92 ± 9.44		
	Master and above	19(3.7)	45.79 ± 9.96		
Technical Title	Elementary	212(41.5)	46.33 ± 9.15	4.452[b]	**0.012**
	Intermediate	273(53.4)	46.07 ± 9.77		
	Advanced	26(5.1)	40.58 ± 6.61		
Position	General nurse	487(95.3)	46.18 ± 9.49	4.787[a]	**0.002**
	Head nurse	24(4.7)	40.17 ± 6.31		
Working Years	1–5	81(15.9)	48.12 ± 9.01	2.177[b]	0.090
	6–10	124(24.3)	45.98 ± 9.19		
	11–15	95(18.5)	44.62 ± 10.03		
	>15	211(41.3)	45.57 ± 9.41		
Department Type	Outpatient and Emergency Department	45(8.8)	45.80 ± 9.29	0.611[b]	0.655
	Internal Medicine	193(37.7)	45.61 ± 10.44		

Note: SD = standard deviation; a = Independent-sample *t*-test, b = one-way ANOVA.

Variables	Group	Frequency (%)	Mean ± SD	*t/F*	*P*
	Surgery	75(14.7)	46.65 ± 8.71		
	Obstetrics and Gynecology	103(20.2)	45.06 ± 8.97		
	Critical Care	95(18.6)	46.85 ± 8.48		
Employment relationship	Contractual employment	167(32.7)	47.01 ± 9.10	4.442[b]	**0.012**
	Personnel agency	321(62.8)	45.68 ± 9.58		
	Formal establishment	23(4.5)	40.96 ± 8.55		
Nurse specialism	Yes	266(52.1)	44.68 ± 9.75	1.825[a]	**0.002**
	No	245(47.9)	47.22 ± 8.95		
Working hours (h)/week	35–39	125(24.5)	46.31 ± 9.76	0.698[b]	0.554
	40–44	168(32.8)	46.07 ± 8.94		
	45–49	115(22.5)	46.26 ± 9.73		
	>50	103(20.2)	44.71 ± 9.60		
Frequency of night shifts/month	0	46(9.0)	43.37 ± 7.39	5.029[b]	**0.007**
	1–4	166(32.5)	44.67 ± 8.63		
	>5	299(58.5)	46.97 ± 10.02		
Conduct psychological training	Yes	458(89.6)	45.51 ± 9.23	1.002[a]	**0.007**
	No	53(10.4)	49.23 ± 10.69		

Note: SD = standard deviation; a = Independent-sample *t*-test, b = one-way ANOVA.

Table 2
Mean scores and correlations between variables.

Variables	Mean ± SD	1	2	3	4
1 Perceived Organizational Support	40.980 ± 10.680	1			
2 Psychological Capital	142.980 ± 16.947	0.701**	1		
3 Emotional Intelligence	73.145 ± 15.414	0.519**	0.503**	1	
4 Occupational Stress	45.898 ± 9.448	−0.661**	−0.591**	−0.574**	1
Note: **P<0.01.					

Table 3
Regression analysis for mediation model.(N = 511)

Regression Equation		Global Fitting Index			Regression Coefficient Significance		
Outcome Variable	**Predictor Variable**	***R***	***R^2***	***F***	***β***	***t***	***P***
Psychological Capital	Perceived Organizational Support	0.701	0.492	492.122	1.113	22.184	<0.001
Emotional Intelligence	Perceived Organizational Support	0.555	0.308	112.866	0.472	6.322	<0.001
	Psychological Capital				0.249	5.285	<0.001
Occupational Stress	Perceived Organizational Support	0.724	0.524	186.328	−0.348	−8.807	<0.001
	Psychological Capital				−0.096	−3.905	<0.001
	Emotional Intelligence				−0.174	−7.707	<0.001

Table 4
Decomposition of standardized effects from the model.(*N* = 511)

Mediating Path	Effect Size	BootSE	BootLLCI	BootULCI	Efficiency Ratio(%)	*P*
Total Effect	−0.585	0.023	−0.643	−0.527	100	<0.001
Direct Effect	−0.348	0.040	−0.425	−0.270	59	<0.001
Mediating Effect	−0.237	0.039	−0.313	−0.159	41	<0.001
Ind1	−0.107	0.030	−0.168	−0.049	18	<0.001
Ind2	−0.082	0.019	−0.120	−0.047	14	<0.001
Ind3	−0.048	0.015	−0.080	−0.023	8	<0.001

Note: LLCI: Lower limits of confidence interval; ULCI: Upper limits of confidence interval. The model was run with covariates including the gender, technical title, position, employment relationship, nurse specialism, frequency of night shifts/month, and Conduct psychological training.

Discussion

To our knowledge, this is the first study in China to examine the interrelationships among perceived organizational support, psychological capital, emotional intelligence and occupational stress in clinical nurses. Our findings revealed three distinct indirect pathways through which perceived organizational support influenced occupational stress: (a) through psychological capital alone, (b) through emotional intelligence alone, and (c) through the sequential (chain) mediating effect of psychological capital and emotional intelligence.

The occupational stress of clinical nurses varies notably by demographic characteristics

- In this study, the average occupational stress score of clinical nurses was (45.90 ± 9.45), at a moderately high level, which is higher than the findings of Rafiei[30]. This disparity may be closely related to the occupational characteristics of nursing and demographic factors: on one hand, tertiary hospitals have high patient volumes, complex conditions, and a large proportion of critically ill patients, requiring nurses to consistently manage high-intensity workloads, adhere to strict operational standards, and bear high medical responsibilities[31]. On the other hand, 58.5% of nurses in this sample worked more than five night shifts per month, and long-term disruption of routines can easily lead to physical and mental exhaustion. Additionally, Elementary nurses(41.5%), due to insufficient clinical experience and limited emergency handling abilities, are more susceptible to stress when facing complex cases and doctor-patient conflicts, further increasing the overall occupational stress burden. In view of this, nursing managers need to focus on the heterogeneity of

stress among nurses with different demographic and occupational characteristics, and develop and implement differentiated stress intervention strategies to alleviate their occupational stress[32].

The mechanism of perceived organizational support on occupational stress

- This study emphasizes that perceived organizational support has a negative predictive effect on the occupational stress of clinical nurses, which is consistent with Dziedzic's research findings[33]. Therefore, Hypothesis 1 is supported. Organizational support, as a key external resource, can directly replenish the psychological and emotional resources that nurses deplete at work, preventing the accumulation of stress caused by resource exhaustion[34]. From the practical perspective of nursing work, the direct stress-relief effect of perceived organizational support may manifest in two dimensions: first, emotional support, such as understanding from leadership, mutual assistance among colleagues, and recognition of work achievements, which can directly reduce nurses' subjective perception of stress and lessen feelings of isolation and helplessness; second, instrumental support, including reasonable human resource allocation, opportunities for professional training, fair compensation and benefits, and clear career development pathways, which can directly reduce objective stressors[35, 36]. In light of this, nursing managers should further improve organizational support measures to enhance nurses' perceived organizational support.

The mediating roles of psychological capital and emotional intelligence

- It is noteworthy that our research findings confirm that psychological capital plays a mediating role between clinical nurses' perceived organizational support and occupational stress. Therefore, Hypothesis 2 is validated. While receiving support from external organizations, individuals are also accumulating and activating internal psychological resources, which provide them with encouragement and a sense of security, helping them maintain a positive mindset when facing stress and challenges[37]. Nurses with high psychological capital are more likely to view challenges as opportunities for growth, recover quickly from setbacks, and maintain a positive outlook on their future work[38]. In nursing management, targeted psychological capital training courses can be conducted to strengthen nurses' positive psychological qualities through group counseling, mindfulness training, and other methods[39].
- In addition, this study found that emotional intelligence also plays a mediating role between perceived organizational support and occupational stress among clinical nurses. This finding is similar to Mazzella's research[40], which found that emotional intelligence is an important protective factor in alleviating occupational stress. Therefore, our hypothesis 3 is confirmed. Emotional intelligence itself is a crucial psychological resource that can help individuals effectively regulate their emotions in stressful situations, preventing cognitive and energy depletion caused by

emotional outbursts[41]. When nurses encounter emotional setbacks, emotional or instrumental support provided by the organization can help them learn appropriate ways to release their emotions, prevent the buildup of negative feelings, enhance their self-emotional management abilities, and maintain rational decision-making in high-pressure situations[42]. It is suggested that nursing managers strengthen training in nurses' emotional intelligence by offering courses in emotion management, communication skills, and other areas to enhance nurses' ability to regulate their emotions[43].

The chain mediation of psychological capital and emotional intelligence

- Furthermore, the mediation model regression analysis in our study indicates that psychological capital and emotional intelligence play a chain mediating role between perceived organizational support and occupational stress, further confirming Hypothesis 4. This finding reveals the interactive and synergistic mechanisms between individual psychological traits and organizational environmental factors, further enriching the application of COR theory in the field of nursing. This pathway suggests that organizational support first transforms into nurses' intrinsic positive psychological resources, providing a crucial psychological foundation and cognitive space for the effective use of emotional intelligence. Emotional intelligence, in turn, functions as a dynamic, context-sensitive regulatory ability, enabling immediate emotional management and resource maintenance when facing work-related stressors. Consequently, nursing management practices can adopt comprehensive measures, such as improving organizational support systems, enhancing nurses' psychological capital, and strengthening emotional intelligence training, to mitigate occupational stress from multiple dimensions, thereby improving the quality of nursing services and the stability of the healthcare system.

Research limitations and future research prospects

This study has certain limitations: First, it only selected nurses from a tertiary hospital in Henan as the research subjects, so the sample has limited representativeness and may be subject to regional and institutional biases. Future studies could expand the sample to include nurses from different regions and hospitals of various levels. Second, this study is a cross-sectional study, which can only verify the relationships between variables but cannot determine causal relationships. Future research could adopt a longitudinal design to track the dynamic changes between variables. Finally, the study did not consider other potential moderating variables (such as work-family conflict and social support networks); future research could further expand the model to explore the interactions of more variables.

Despite the aforementioned limitations, this study still provides important empirical evidence for alleviating occupational stress among clinical nurses. In future nursing management practice, comprehensive intervention programs can be developed based on the results of this study, using

multidimensional and multi-path strategies to enhance nurses' psychological resources, effectively improve their occupational health, and promote the sustainable development of the nursing profession.

Clinical implications

- Based on our research findings, nursing managers must recognize the significant impact of organizational support on clinical nurses' occupational stress, as well as the key moderating roles of psychological capital and emotional intelligence in this complex interaction. At the hospital level, a comprehensive nurse support system should be established, clear career development pathways defined, compensation and benefits optimized, and objective sources of stress reduced. Health administrative departments can promote the standardization of nursing workforce allocation, ensure clinical nurses have adequate work resources, incorporate improvements in psychological capital and emotional intelligence into nursing quality assessment indicators, and guide medical institutions to pay attention to nurses' occupational health.

Conclusions

- This study clarifies the pivotal role of psychological capital and emotional intelligence in regulating occupational stress among clinical nurses in China, further confirming that both serve as key mediators in the relationship between perceived organizational support and occupational stress, and together form a chain-mediated pathway. These findings highlight the core value of integrating individual psychological resources in nursing management practice, suggesting that improving nurses' psychological capital, enhancing targeted emotional intelligence training, and developing differentiated intervention strategies for nurses based on varying demographic and professional characteristics can improve nurses' occupational health, enhance the quality of nursing services, and strengthen the stability of the healthcare system.

Declarations

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CRediT authorship contribution statement

Liang Sun: Writing-review & editing, Conceptualization, Methodology, Research Implementation, Writing-Original draft.

Xin Chen: Writing-review & editing, Conceptualization, Methodology, Investigation, Formal analysis, Writing-Original draft.

Zhen Li: Writing-review & editing, Supervision, Investigation.

Hengyu Hu: Methodology,Writing-review & editing.

Peiyao Zhu: Conceptualization, Writing-review & editing.

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Yunxia Chen: Supervision, Methodology, Writing-review & editing.

Jingwen Cao: Investigation, Survey Design.

Jie Kou: Supervision, Project Administration.

All the authors have carefully reviewed the article and approved the final manuscript.

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Ethics approval and consent to participate

This study was performed in strict accordance with the ethical principles laid down in the Declaration of Helsinki. It obtained formal ethical approval from the Ethics Research Committee of Henan Provincial People's Hospital (Ethics Approval No.2025-26). Written informed consent was obtained from all participants prior to questionnaire completion. All survey procedures guaranteed participant anonymity and personal-data confidentiality.

Consent for publication

Not applicable.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Figures

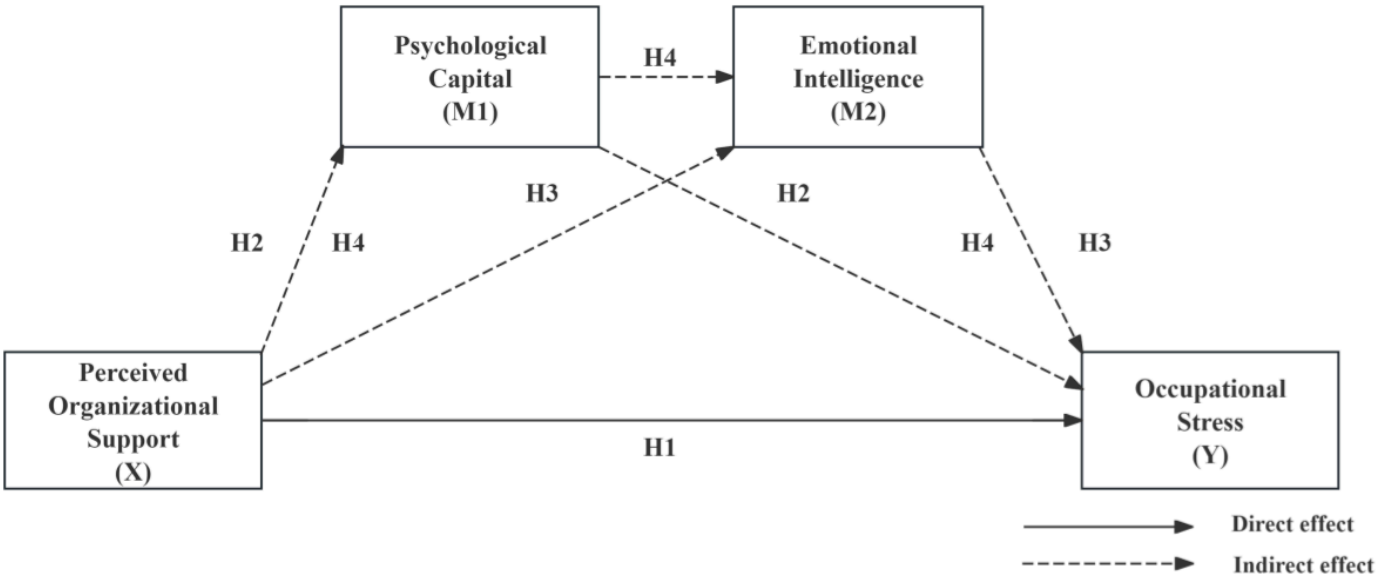


Figure 1

Diagram of the chain mediation hypothesis model

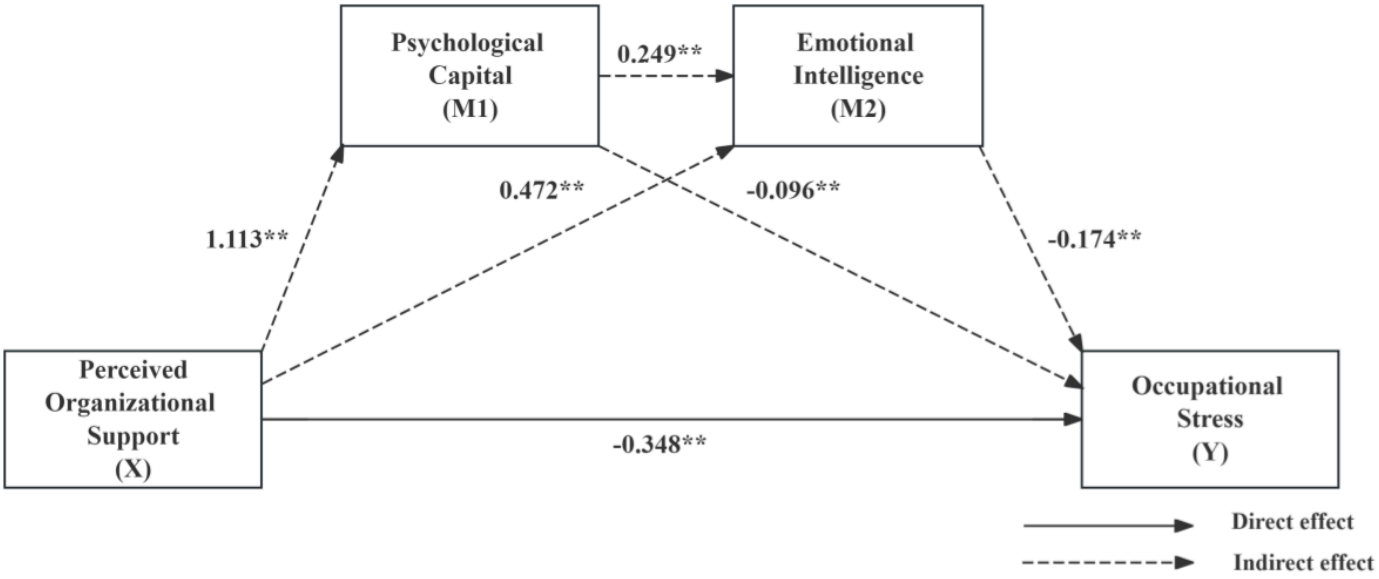


Figure 2

Chain mediation structural equation model (**P□0.01).