




BMJ Open Mediating effects of psychological capital on the relationship between workplace violence and professional identity among nurses working in Chinese public psychiatric hospitals: a cross-sectional study

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ABSTRACT

Objective To examine the relationship between workplace violence (WPV) and professional identity among Chinese psychiatric nurses and the mediating effects of psychological capital (PsyCap) from this association.

Setting Seven public tertiary psychiatric hospitals in Liaoning Province, China.

Participants A total of 952 psychiatric nurses were recruited for this study. Registered nurses who have been engaged in psychiatric nursing for more than 1 year were eligible as participants in this investigation.

Outcome measures Questionnaires consisting of the Workplace Violence Scale, the Occupational Identity Scale, the Psychological Capital Questionnaire and a demographic data sheet were used to collect participant information. We used hierarchical multiple regression and asymptotic and resampling strategies to examine the mediating role of PsyCap in the relationship between WPV and professional identity.

Results WPV was negatively associated with professional identity after controlling for demographic factors ($\beta = -0.353$; $p < 0.001$). PsyCap mediated the relationship between WPV and professional identity, according to the mediation analysis ($a \times b = -0.150$, bias-corrected and accelerated 95% CI (BCa 95% CI) $(-0.185 \text{ to } -0.115)$; $p < 0.001$). In addition, two dimensions of PsyCap: hope ($a \times b = -0.075$, BCa 95% CI $(-0.104 \text{ to } -0.049)$; $p < 0.001$) and resilience ($a \times b = -0.064$, BCa 95% CI $(-0.090 \text{ to } -0.039)$; $p < 0.001$) mediated the association between WPV and professional identity. For professional identity, hope, resilience and PsyCap mediation accounted for 21.6%, 18.1% and 42.4%, respectively.

Conclusions Based on these findings, PsyCap could partially mediate the relationship between WPV and professional identity. Therefore, hospital administrators should implement measures to prevent and reduce WPV and provide nurses with skills training programmes to improve the PsyCap such as hope and resilience.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This is one of the first studies to examine the role of psychological capital in mediating the relationship between workplace violence and professional identity among psychiatric nurses in China.
- ⇒ Its strength is also derived from the statistical analysis, which was performed using bootstrapping mediation analyses.
- ⇒ This study cannot allow us to infer causality between variables due to its cross-sectional research design.
- ⇒ The data were primarily collected through self-administered questionnaires, which may introduce recall and reporting bias.

INTRODUCTION

Professional identity refers to an individual's recognition of the role assigned to occupation by society, the internal acceptance and the positive perception and evaluation of the purpose, social value and other factors engaged by the occupation.¹ A nurse's professional identity is their positive perceptions and feelings about the nursing profession and the psychological state that determines their tendency to behave in a positive professional manner.² Evidence has shown that nurses with a high professional identity recognise and identify their professional competencies, interests, goals and values.³ The level of professional identity directly affects their postwork physical and mental health, stress level, work attitude, clinical work quality and willingness to stay or tendency to leave.^{4 5} A lack of professional identity increases a nurse's work pressure and reduces the quality of nursing work; it also impacts the nursing team's

stability.⁶ Research has shown that the factors influencing nurses' professional identity are not limited to education, career choice, work values and identity and performance, which refers to the actions of nurses to improve the public image of their profession.² In addition, the work environment is also an important aspect that influences nurses' professional identity.⁷ A positive nursing work environment encourages staff to be engaged in their work, reduces the intention for them to leave and improves the quality of care.⁸ Also, studies have shown that exposure to hostile work environments, such as high workloads, high patient numbers or violent behaviour with unpredictable, angry or aggressive patients, leads to stress, anxiety and burnout, leaving nurses with physical and emotional trauma, and lowering their level of professional identity.⁹ Therefore, it is necessary to identify influencing factors that affect a nurses' professional identity in different work situations to improve it.

Workplace violence (WPV) is a common negative event in nurses' work environment.¹⁰ WPV includes physical and psychological violence, which often occur simultaneously. Physical violence is obviously the most severe form of aggression, while psychological violence refers to verbal abuse, threats, bullying/mobbing and sexual or racial harassment.^{11 12} A systematic review showed that an estimated 24% of healthcare workers are exposed to WPV each year, with nurses experiencing significantly higher rates of violence than other healthcare workers.¹³ *Cm et al*¹⁴ systematically reviewed studies published since 2014 and determined that psychiatric units have higher rates of violence than other healthcare facilities. A systematic review of WPV effects on nurses revealed that they fell into two main categories: mental health outcomes (depressive symptoms, life satisfaction, quality of life and vicarious post-traumatic growth) and work-related outcomes (turnover intention, job well-being and occupational stress).¹⁵ WPV causes physical and psychological harm to medical staff, making them feel less secure in their practice and reducing job satisfaction and professional identity.¹⁶ Patients with severe mental health disorders often behave aggressively when controlled by psychiatric symptoms such as hallucinations and delusions and influenced by environmental factors such as noise and a closed-ward environment.¹⁷ A recent study shows that the overall prevalence rate of WPV among healthcare professionals in China is 62.4%, and the estimated incidence rates of physical violence, psychological violence, verbal abuse, threats and sexual harassment are 13.7%, 50.8%, 61.2%, 39.4% and 6.3%, respectively.¹² Among them, the incidence of violence experienced by psychiatric nurses in China is 78%.¹⁸ Psychiatric nurses may be the most common victims of patient aggression because they have the most frequent contact with patients. Violence and aggressive workplace behaviours negatively affect psychiatric nurses' emotional and mental health. Previous studies have shown that nurses who suffered WPV reported feelings of anger, disappointment, helplessness and anxiety after the incident, which leads to a reluctance to talk about

it, a subconscious distancing of patients, and resistance that may affect the quality of care.¹⁹ The negative impact of WPV on professional identity has received increasing attention in recent years. Previous studies have shown that nurses exposed to WPV affect professional identity, but the pathways through which it occurs remain unclear.^{20 21}

Psychological capital (PsyCap) is a significant concept derived from positive organisational behaviour that has been validated as an important resource for improving nurse job satisfaction and for reducing their stress and turnover.²² PsyCap consists of four components: self-efficacy, hope, optimism and resilience.²³ The theoretical framework of this study is based on the Conservation of Resources theory (COR), which is the stress theory proposed by Hobfoll.^{24 25} It is based on the assumption that people strive to preserve, protect and develop resources and the potential or actual loss of these resources is a threat to them. Hobfoll classifies resources into four main types: (1) material resources, (2) conditional resources, (3) personality traits and (4) energy resources. Hobfoll believes that once any of these four resources are threatened or lost, stress will arise. When individuals are under stress, positive and effective response strategies can not only reduce the consumption of resources but can also reduce the threat of resource loss by acquiring resources through other channels. According to COR theory, the influence of hospital WPV on nurses' professional identity depends on the balance between the resources consumed by nurses when exposed to hospital WPV and the resources obtained by nurses through different sources.²⁶ However, for positive change to occur, it needs to be mediated by positive factors within the individual. PsyCap, as the primary internal resource of individuals, has a significant mediating effect on individual behaviours and attitudes. This study considered the intervention of individual internal resources-PsyCap on nurses' emotional regulation, which subsequently affected their physical and mental adaptability and work enthusiasm, in order to alleviate nurses' intention and behaviour of job burnout induced by WPV. Some studies have shown that PsyCap is negatively associated with WPV.²⁷ Reports have concluded that PsyCap and its components have a positive influence on professional identity of medical professionals.^{28 29} In addition, a previous study indicated that PsyCap served as an important mediator to significantly decrease the negative effects of work-related stress on work-related well-being among Intensive Care Unit (ICU) nurses.³⁰ Consequently, PsyCap may play a mediating role in psychiatric nurses' WPV and professional identity, which needs to be further studied.

Although there have been studies related to WPV, PsyCap and professional identity, they have been independent or only analysed the relationship between WPV and professional identity, and few have explored a connection between these variables in the context of psychiatric nursing. Based on the theory of conservation of resources, this study aimed to examine the relationship between WPV and professional identity among

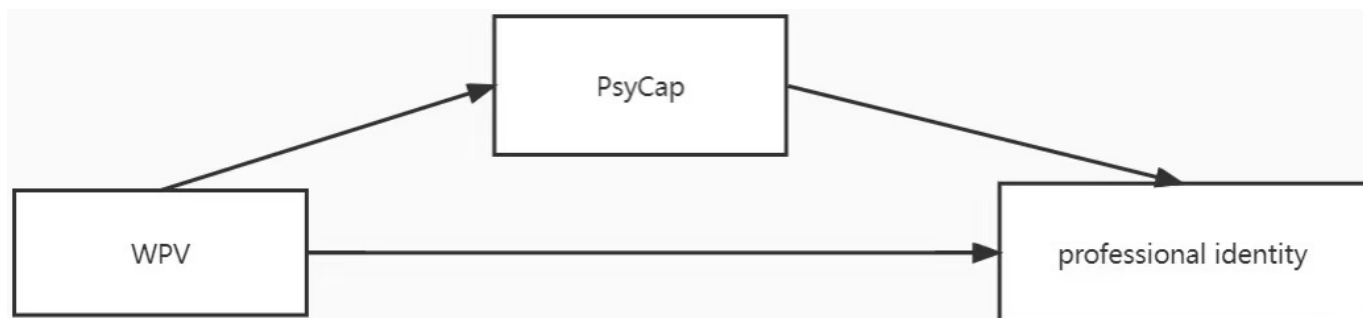


Figure 1 Hypothetical mediation model of PsyCap in the relationship between WPV and professional identity. PsyCap, psychological capital; WPV, workplace violence.

Chinese psychiatric nurses and the mediating effect of PsyCap from this association. We propose two research hypotheses. One is that WPV is negatively correlated with professional identity, and the other is that PsyCap helps mediate psychiatric nurses WPV and professional identity (as shown the figure 1).

METHODS

Study design and sample

A cross-sectional study was conducted in Liaoning Province, China, from March to May 2021. There are 11 tertiary public psychiatric hospitals in Liaoning Province. Of these, seven hospitals were selected with the method of convenience sampling. Each hospital has a bed capacity of over 400 patients and the ratio of the beds to nurses is 1:0.35. Inclusion criteria for participants included being a registered nurse, engaged in psychiatric nursing for more than a year and volunteer to participate in this survey. Exclusion criteria were nurses practicing, continuing education or rotating during the survey period. Because these nurses work in the psychiatric department to learn the knowledge and skills related to psychiatric nursing, and they work here temporarily. Moreover, nurses who were not on duty due to sick leave, maternity leave, studying abroad or resigned during the survey period were also excluded. All the participants participated voluntarily. A total of 1012 surveys were completed. Sixty invalid questionnaires were deleted, among which 48 questionnaires took less than 100s to complete and 12 questionnaires had false information (three with contradictory information between age and working years, and nine with consistent answers to all questions). As a result, 952 questionnaires were included in this study, indicating the effective recovery rate is 94.07%.

Measurement

Demographic characteristics

Gender, age, marital status, educational situation, working years, professional title, types of employment and whether they had overtime or chronic diseases. The 'marital status' was categorised as 'single/divorced/widow/separated' or 'married/cohabitating'. The 'educational situation' was categorised as 'technical secondary school', 'college' or 'undergraduate and above'. The

'working years' were categorised as '<5', '5–10', '11–15' or '>15'. The 'professional title' was categorised as 'junior nurse', 'intermediate nurse' or 'senior nurse'. The 'types of employment' were classified as 'bianzhi nurse' or 'contract-based nurse'. In China, nurses with 'bianzhi' sign agreements directly with the state, while contract-based nurse sign contracts with hospitals.³¹ Among them, overtime was defined as working overtime more than 1 hour each time and working overtime two times or more per week. Having a chronic disease was defined as a clinically definite diagnosis of a chronic disease such as lumbar muscle degeneration, bronchial asthma, chronic gastritis.³²

Workplace Violence Scale

The Workplace Violence Scale (WVS) was used to measure WPV. The scale was developed by Schat and Kelloway.³³ Wang *et al.*³⁴ combined the original scoring method of the scale with China's national conditions to develop a Chinese version of WVS to assess WPV experienced by psychiatric nurses in the past 1 year. The questionnaire consisted of 5 items: physical assault, emotional abuse, threat, verbal sexual harassment and sexual assault. All the items were scored from 0 (never experienced) to 3 (4 times or more). The total score ranged from 0 to 15, with higher scores indicating more frequent WPV. A 0 means no experience of WPV and ≥ 1 means there is WPV experience. In the current study, Cronbach's α for the WVS was 0.724.

Psychological Capital Questionnaire

PsyCap was tested with the Psychological Capital Questionnaire, which was developed by Luthans *et al.*³⁵ This questionnaire contains 24 questions in four dimensions. The four dimensions are self-efficacy, hope, resilience and optimism, and each dimension contains six items. All items were scored using a Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). The final score sums up and ranges from 24 to 144. Higher scores reflect higher levels of PsyCap and the four components. The Cronbach's α coefficients for these four dimensions (self-efficacy, hope, resilience and optimism) and the total scale in this study were 0.875, 0.913, 0.748, 0.809 and 0.941, respectively.

Occupational Identity Scale

Professional identity was measured with the Occupational Identity Scale (OIS), which was developed by Tyler and McCallum.³⁶ It consists of 10 items and is used to assess individuals' identification with their occupations. Using the Likert 5-level scoring method, 1 point means non-conformity, 5 points means complete agreement, and the total score ranges from 10 to 50 points. The higher the score, the higher the level of professional identity. In this study, Cronbach's α coefficient for the OIS was 0.942.

Data collection and measures

This survey uses a website (www.wjx.cn) to conduct an online survey. After the content of the questionnaire was entered into the website platform, we conducted a presurvey. In the pretest, we selected eight nurses from a psychiatric hospital to fill out the questionnaire and determine the time needed to complete it. The time required for the pretest was between 120 s and 306 s. Considering the differences between individuals, we decided that if completion time was less than 100 s, the questionnaire could not be guaranteed to be filled out carefully and, therefore, discarded.

Two research members of this study are on the Liaoning Provincial Psychiatric Committee. They contacted nursing department heads at seven public tertiary psychiatric hospitals in Liaoning Province to explain the purpose, significance and inclusion criteria of the research participants. The person in charge of each hospital was trained on how to fill out the questionnaire online and make sure to send a Quick Response (QR) code of the questionnaire through WeChat after understanding the contents. Subsequently, the participants identified the QR code through Wechat, the informed consent interface would pop up, explaining to the participants that the study was anonymous and that they could continue to fill in the questionnaire only after obtaining informed consent. All participants were assured that their participation was entirely voluntary and that they could withdraw at any time, and the questionnaires were filled out anonymously. The researchers assured the participants that their identities and responses would be kept confidential and that a truthful answer would not impact on their work. When participants submitted their questionnaires, the researcher collected and processed the questionnaires through the website.

Statistical analyses

Statistical analyses were conducted using SPSS V.21.0. All tests were two sided and $p < 0.05$ was set as statistically significant. Continuous variables were presented by mean and standard deviations (SDs), while categorical variables were presented by frequency and percentage. Data normality was assessed by graphs (histogram and Q-Q plot) and numerical variables that followed a normal distribution. The difference in professional identity among demographic characteristics was tested with a t test or one-way ANOVA. Descriptive statistical analysis was performed

first on participant demographics. Correlations between WPV, PsyCap and its four dimensions and professional identity were analysed using Pearson correlation analysis. Demographic variables (marital status, education situation, working years, overtime and chronic diseases), professional identity, WPV, PsyCap and its four dimensions were tested for multicollinearity, with a Variance Inflation Factor (VIF) value of < 2 , which indicated that there was no multicollinearity in the data. Hierarchical multiple regression was used to test whether PsyCap and its four dimensions mediate the relationship between WPV and professional identity. In the first step of the analysis, the variables in the general data (marital status, education situation, working years, overtime and chronic diseases) were added as control variables; the second step added WPV as an independent variable into the model; the third step added PsyCap and its four dimensions as mediator variables. If a c' path coefficient in block 3 was smaller than a c path coefficient in block 2, or if c' was statistically significant, it was speculated that there might be an intermediary.

Asymptotic and resampling strategies were used to verify the mediating role of PsyCap on the association between WPV and professional identity.³⁷ The analysis was performed in two steps, the first determined the relationship between WPV and professional identity (path c), and the second examined the mediating role of PsyCap (path $a \times b$). A bias-corrected and accelerated 95% CI (BCa 95% CI) was determined for each $a \times b$ product, excluding a BCa 95% CI of 0, indicating a significant mediation. The bootstrap estimate proposed in our study is based on 5000 bootstrap samples.

Patient and public involvement

No patient involved.

RESULTS

Demographics of participants completing survey

Demographics of participants and professional identity are presented in [table 1](#). Of the participants, 80.4% ($n=765$) were women. A total of 41.8% ($n=398$) of nurses were 30 years or younger. Marital status indicated that 66% ($n=628$) of nurses were married or cohabiting. The score of professional identity in the marital status groups of married or cohabiting situation was significantly higher than those that were single, divorced, widowed or separated ($t=3.199$, $p=0.001$). Education of the nurses indicated 50.1% ($n=477$) had an undergraduate degree or higher. The professional identity score for those with an undergraduate and above was significantly higher than those in college or technical secondary school ($F=7.498$, $p=0.001$). The nurses indicated that 26.2% ($n=249$) had more than 15 years of experience. The professional identity score of the >15 years working experience group was significantly higher than those with <5 years ($F=8.230$, $p<0.001$). Psychiatric nurses without overtime have higher professional identity scores than those with

Table 1– Mean scores of professional identity according to demographic characteristics of participants (N=952)

Variables	Category	n	%	Mean	SD	t/F value	P value
Gender	Female	765	80.4	29.853	8.247	0.804*	0.422
	Male	187	19.6	29.299	9.242		
Age	≤30	398	41.8	29.090	8.312	2.895†	0.056
	31–39	327	34.3	29.828	8.699		
	≥40	227	23.9	30.770	8.251		
Marital status	Single/divorced/ widow/separated	324	34.0	28.530	8.688	3.199*	0.001
	Married/cohabitating	628	66.0	30.371	8.261		
Educational situation	Technical secondary school‡	155	16.3	28.052	9.057	7.498†	0.001
	College‡	320	33.6	29.103	8.328		
	Undergraduate and above	477	50.1	30.733	8.209		
Working years	< 5	301	31.6	28.338	7.640	8.230†	< 0.001
	5–10	238	25.0	28.974	8.791		
	11–15§	164	17.2	30.615	8.586		
	> 15¶§	249	26.2	31.606	8.596		
Professional title	Junior nurse	643	67.5	29.457	8.486	1.183†	0.307
	Intermediate nurse	271	28.5	30.391	8.408		
	Senior nurse	38	4.0	30.000	8.057		
Types of employment	‘Bianzhi’ nurses	329	34.6	30.109	8.081	0.968*	0.333
	Contract-based nurses	623	65.4	29.552	8.637		
Overtime	No	343	36.1	30.647	8.169	2.480*	0.013
	Yes	609	63.9	29.236	8.568		
Chronic diseases	No	765	80.4	30.328	8.391	4.349*	< 0.001
	Yes	187	19.6	27.358	8.288		

*t-value.

†F-value.

‡Compared with undergraduate and above, $P < 0.05$.§Compared with < 5 years, $P < 0.05$.¶Compared with 5–10 years, $P < 0.05$.

overtime ($t=2.480$, $p=0.013$). Psychiatric nurses without chronic disease have higher professional identity scores than those with chronic disease ($t=4.349$, $p<0.001$). There were no statistically significant differences in professional identity scores of nurses by gender, age, professional title, or employment type ($p>0.05$).

Correlation analysis between different measurement variables

Pearson correlation results between different variables are presented in [table 2](#). WPV was significantly negatively associated with PsyCap ($r=-0.342$, $p < 0.001$) and professional identity ($r=-0.378$, $p<0.001$), and PsyCap was

Table 2 Pearson’s correlations of all variables

Variables	M	SD	1	2	3	4	5	6	7
1.WPV	6.127	2.769	1						
2.Self-efficacy	25.356	5.407	−0.257*	1					
3.Hope	25.495	5.661	−0.309*	0.563*	1				
4.Resilience	24.826	4.664	−0.265*	0.448*	0.515*	1			
5.Optimism	24.647	4.710	−0.242*	0.484*	0.473*	0.476*	1		
6.PsyCap	100.325	16.133	−0.342*	0.804*	0.826*	0.759*	0.758*	1	
7.Professional identity	29.744	8.449	−0.378*	0.381*	0.505*	0.486*	0.341*	0.545*	1

* $p<0.001$.

PsyCap, psychological capital; WPV, workplace violence.

Table 3 Predicting factors of professional identity

Variables	Professional identity			
	Block 1(β)	Block 2(β)	Block 3(β)	
			Model 1	Model 2
Marital status	0.026	0.032	-0.001	0.010
Educational situation	0.120*	0.112*	0.060†	0.063†
Working years	0.177*	0.159*	-0.154*	0.154*
Overtime	-0.043	-0.003	-0.006	-0.003
Chronic diseases	0.166*	0.115*	0.078†	0.093*
WPV		-0.353*	-0.196*	-0.203*
Self-efficacy			0.048	
Hope			0.258*	
Resilience			0.253*	
Optimism			0.019	
PsyCap				0.454*
F	14.716*	37.444*	61.537*	79.346*
R ²	0.072	0.192	0.395	0.370
ΔR^2	0.067	0.120	0.203	0.178

*p<0.001.
†p<0.05.
WPV, workplace violence; PsyCap, psychological capital.

significantly positively correlated with professional identity ($r=0.545$, $p<0.001$). Moreover, the four dimensions of PsyCap were all significantly positively correlated with professional identity ($r=0.381$, 0.505 , 0.486 and 0.341 , respectively, $p<0.001$).

Association of WPV and PsyCap with professional identity

Hierarchical multiple regression results between WPV, PsyCap and professional identity are shown in [table 3](#). The results indicated that WPV had a negative correlation with professional identity ($\beta=-0.353$, $p<0.001$), and the explained variance increased by 12%. The third layer is divided into two steps. First, the four dimensions of PsyCap were added to the regression model. The results showed that only hope ($\beta=0.258$, $p<0.001$) and resilience ($\beta=0.253$, $p<0.001$) were positively correlated with professional identity, and the explained variance jumped to 20.3%. Second, PsyCap was added to the regression model. The results showed that PsyCap had a positive correlation with professional identity ($\beta=0.454$, $p<0.001$), and the explained variance increased by 17.8%. The standardised partial regression coefficient β of WPV dropped to -0.203 but remained significant. The results suggested that PsyCap and its dimensions may partially mediate the relationship between WPV and professional identity.

The mediating effect of PsyCap on WPV and professional identity

Asymptotic and resampling strategies were further applied to verify the mediating effect of PsyCap and its four dimensions on WPV and professional identity (path c). The

results are shown in [table 4](#). WPV negatively associated with professional identity ($c=-0.353$, $p<0.001$). Moreover, WPV also had a negative correlation with PsyCap ($a=-0.330$, $p<0.001$) and its four dimensions ($a=-0.258$, -0.295 , -0.254 and -0.232 , respectively, $p<0.001$). Hope, resilience and PsyCap had significant and positive effect on professional identity (path b), but self-efficacy and optimism had no significant association with it (path b). Therefore, hope ($a*b=-0.075$, BCa 95% CI (-0.104 to -0.049); $p<0.001$), resilience ($a*b=-0.064$, BCa 95% CI (-0.090 to -0.039); $p<0.001$) and PsyCap ($a*b=-0.150$, BCa 95% CI (-0.185 to -0.115); $p<0.001$) had a partial mediating effect on WPV and professional identity. The direct effect of WPV on professional identity (path c') remained significant when hope, resilience or PsyCap were added to the model as intermediaries. To identify the effect size of the mediating effect, we count the percentage of the total effect of the independent variable on the dependent variable (c) that was mediated by hope, resilience and PsyCap using the formula $(a*b)/c$. The percentage of mediation of hope, resilience and PsyCap was 21.6 %, 18.1% and 42.4% for professional identity, respectively.

DISCUSSION

The results of this survey showed that 952 nurses scored 29.74 ± 8.45 on the professional identity scale, which is at a moderate level and is generally consistent with the results reported by a previous study involving 412 nurses in public

Table 4 Direct and indirect effects on professional identity in the model

Mediators	Path coefficients				A*B(BCa 95% CI)
	c	a	b	c'	
PsyCap	−0.353*	−0.330*	0.454*	−0.203*	−0.150 (−0.185 to 0.115)
Self-efficacy	−0.353*	−0.258*	0.048	−0.196*	−0.012 (−0.032 to 0.005)
Hope	−0.353*	−0.295*	0.258*	−0.196*	−0.075 (−0.104 to −0.049)
Resilience	−0.353*	−0.254*	0.252*	−0.196*	−0.064 (−0.090 to −0.039)
Optimism	−0.353*	−0.232*	0.019	−0.196*	−0.004 (−0.022 to 0.012)

c: the total effect of WPV on professional identity; a: association between WPV and PsyCap; b: association of PsyCap on professional identity; c': the direct effect of WPV on professional identity after entering PsyCap as the mediator. a*b: the product of a and b; BCa 95% CI: the bias-corrected and accelerated 95% CI.

*p<0.001.

PsyCap, psychological capital.

psychiatric hospitals in Shanghai.³⁸ Similarly, the results aligned with the level of professional identity of nurses in general hospitals.³⁹ Psychiatric patients have several abnormal behaviours and actions, such as wandering, violence and aggression, self-harm, suicide, absconding and choking, which require close observation, constant assessment and response by psychiatric nurses in their daily work. These behaviours and responses can increase nurses' tension and further exacerbate pre-existing work stress, thus affecting the level of professional identity.⁴⁰

The results showed that psychiatric nurses who were married or cohabiting had a higher level of professional identity, which was associated with more emotional support from their families. For single, divorced, widowed or separated psychiatric nurses, support systems (eg, colleagues' support in the workplace) should be provided to increase their level of professional identity.⁴¹ The higher level of professional identity in the groups with undergraduate and above may be because they received additional and professional education, giving a clearer understanding of the career, associated motivation and professional identity.⁴² Nurse professional identities develop throughout their lifetimes, from before entering nursing, through years of study and clinical experience, and continuing to evolve during their careers.⁴³ Supporting education contributes to professional identity and broadens knowledge. Nursing educators and administrators need to encourage nurses to participate in educational nursing programmes as well as develop a variety of educational programmes designed to expand opportunities for nurses. It is also critical for hospital administrators to provide opportunities for nurses to advance in their careers.⁴⁴ Our regression results indicated more working years resulted in a higher level of professional identity in nurses, which agrees with previous findings.⁴⁵ This may be related to the fact that a nurses' self-understanding of their profession and role gradually deepens with experience; they have a clearer idea of nursing, a greater ability to resist stress and a higher level of professional identity. Psychiatric nurses who work overtime have a lower professional identity than those who do not work overtime,

which was in line with Gohar's findings.⁴⁶ Frequent overtime work can easily lead to physical and mental fatigue and affect physical and psychological health. Thus, this can affect the quality of work and reduce the professional identity level of nurses. This study also found that nurses with chronic illnesses had a lower professional identity. Mohammadi *et al*⁴⁷ demonstrated that poor physical condition such as pain is a barrier to a nurse's life and work. Due to chronic illness, nurses often worry about their health status, leading to physical and mental fatigue as well as feelings of weakness, which affects their professional identity.

In this study, WPV has been negatively associated with professional identity. This result supports a previous retrospective survey of 201 mental health staff at Sbrana Psychiatric Hospital in Botswana.⁴⁸ Exposure to violence has emerged as a major factor affecting occupational stress among mental health nurses.⁴⁰ Psychiatric nursing is a high-stress job, especially for nurses who have experienced WPV. Unmanaged occupational stress is detrimental to both psychological and physical functioning and can lead to work exhaustion, which can adversely affect the level of professional identity of psychiatric nurses.⁴⁹ These negative consequences have prompted an urgent call for research into the reasons of WPV against psychiatric nurses as well as the development of evidence-based policies that promote safer working conditions. Yang *et al*⁵⁰ suggested that mental health nurses need to be trained in WPV, the effective coping strategies and therapeutic nurse–patient communication skills. Han *et al*⁵¹ argue that because violence against healthcare workers involves multiple dimensions, efforts are needed to address the problem at multiple levels. At the individual level, maintaining good nurse–patient relationships is an important way in preventing violence, while at the institutional level, security measures (hiring security personnel, installing security screening and alert systems) and security training for all staff are needed, especially to improve preparedness for serious violence. In addition, at the health system level, some studies show hospitals should develop an effective system for reporting WPV,

so they understand the incidence and underlying causes and can implement strategies to reduce violence against staff.^{52 53} Since violence has a profound and significant effect on physical and psychological health of nurses, supportive counselling services should be provided to psychiatric nurses who experience WPV. Action must be taken at the individual, system and institutional levels to reduce the prevalence of WPV and ensure the stability of the psychiatric workforce.

Our findings suggest that there is a significant positive correlation between PsyCap and professional identity. This result is similar to a previous investigation, which found that psychiatric nurses' PsyCap was negatively associated with job stress and burnout in 108 psychiatric nurses working in three psychiatric hospitals in Korea.⁵⁴ Furthermore, we found that PsyCap partially mediates the relationship between WPV and professional identity among psychiatric nurses. This suggests that WPV may be detrimental to PsyCap and lower its levels in psychiatric nurses, resulting in a lack of professional identity. This finding suggests that, despite WPV having a negative effect on professional identity, it is possible to achieve desirable nursing professional identity by controlling for it if hospital nurses have adequate capacity of PsyCap. The PsyCap may operate as a considerable buffer against the effects of WPV on a psychiatric nurses' professional identity in these situations. The reason may be that psychiatric nurses with a high level of PsyCap can balance high initiative to adapt to WPV by increasing work effort and enhancing psychological distress tolerance.⁵⁵ Since PsyCap is seen as a state-like characteristic rather than a fixed-like trait, it is possible to alter its level through training and education.⁵⁶ Therefore, it is critical to develop and implement an effective intervention programme that increases PsyCap among psychiatric nurses, allowing them to manage physical and mental distress. It has been suggested that organisational support can start with providing tangible/intangible resources, which will affect their work attitude and behaviour to improve their PsyCap. One example is the reasonable allocation of human resources. If the allocation is unfair or inappropriate, the autonomy and initiative of nurses' work will be reduced, the adverse emotions will be increased, and the PsyCap will be reduced.⁵⁷

Additionally, the results indicate that the PsyCap dimensions hope and resilience mediate a role in the correlations between WPV and professional identity. Snyder's theory of hope suggests that it consists of three main conceptual foundations: agency, pathways and goals.⁵⁸ Specifically, hope is the sum of agency, or goal-directed determination/willpower and pathways, or methods for achieving goals. Resilience is considered in positive psychology to be a person's ability to recover from setbacks or failures when faced with adversity.⁵⁹ People should focus more attention on improving hope and resilience. A training model for PsyCap intervention (PCI) has been developed and the exercises integrated into PCI could aim to improve two or more PsyCap components at

the same time.⁶⁰ For example, in PCI training, in order to foster hope, exercises that attempt to encourage participants to set pragmatic goals are provided. In addition, to build resilience, exercises that attempt to stimulate cognitive, emotional and behavioural mechanisms, which can change participants' perception of their external environment. With the improvement of PsyCap, its dimensions hope and resilience have also been improved. Therefore, we put forward the following suggestions. For improving hope, some personally valuable and realistically challenging job goals should be built up for psychiatric nurses to increase the motivating agentic capacity of individuals.²³ For resilience improvement, hospital managers should provide resilience training programmes and include resilience skills in the nursing curriculum. For example, the resilience training programme proposed by Babanataj was summarised from three dimensions, including understanding resilience and the characteristics of resilient people, internal and external support factors and methods to cultivate resilience. Training methods include questions and answers, group discussions and lectures. The results showed that the resilience level of nurses could be effectively improved.⁶¹

Limitations

The current study has some limitations that should be highlighted. First, the data were primarily collected through self-administered questionnaires, which may introduce recall and reporting bias. Second, the professional identity of psychiatric nurses is influenced by many factors, including social factors, family, institutional factors and individual self-factors.² In addition to the personal level and work environment aspects studied in this paper, a future study should consider the influence of family, social and environmental factors. This study only explored the effects of WPV and PsyCap on professional identity and the relationship between the three. As a result, other potential contributors to professional identity may have been missed. Third, the study participants were all from psychiatric specialty hospitals in Liaoning Province, with no other level or regional specialty hospitals included. Hence, it may limit the generalisability of the findings. Further research is needed to expand the representative sample from various areas and hospital levels. Finally, because of the cross-sectional study design, causality could not be established. A longitudinal study is needed to validate the findings of this study.

CONCLUSIONS

The current study's findings give evidence on the crucial function of PsyCap, indirectly affecting professional identity as well as indirectly affecting it through mediating the impact of WPV. Our findings imply that despite experiencing moderate to severe levels of WPV, nurses with higher levels of PsyCap are more likely to improve their professional identity. To maintain and improve professional identity, nurses with varying levels of WPV and

professional identity should receive individualised interventions and strategies aimed at increasing PsyCap and its two dimensions of hope and resilience.

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