

Original Article



Current Status and Correlation between Clinical Nurses' Well-Being and Psychological Resilience

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Abstract:

Background: Under the backdrop of profound reforms in the healthcare system, clinical nurses face significant professional challenges. Chronic occupational stress has led to rising comorbidity rates of anxiety and depression among nurses, alongside increased nurse turnover. Psychological resilience, a core competency for coping with adversity, has become a focal point of attention due to its potential association with well-being. However, the correlation between nurses' well-being and psychological resilience remains unclear.

Methods: A cross-sectional study was conducted on 386 clinical nurses in January 2025. A convenience sampling method was employed to recruit 386 clinical nurses from Army Medical Center of PLA in Yuzhong District, Chongqing, China. The General Well-Being Schedule (18 items) was used to examine well-being, and the Connor-Davidson Resilience Scale (25 items) was used to examine psychological resilience. Spearman correlation analysis was conducted to examine the relationship between well-being and psychological resilience, while multivariate logistic regression analysis was applied to further explore their association.

Results: A total of 386 valid questionnaires were collected, yielding a valid response rate of 100%. Among the 386 clinical nurses, the mean total score for general well-being was 79.85±14.42. The median total psychological resilience score was 91.50, with an interquartile range (IQR) of 22.00. Correlation analysis revealed a significant positive association between the total general well-being score and total psychological resilience score ($r = 0.580$, $P < 0.01$). All five dimensions of general well-being, except for the "satisfaction with life and interests" subscale, showed positive correlations with both the total psychological resilience score and its three subdimensions ($r > 0$, $P < 0.01$). Multivariate logistic regression analysis identified three significant predictors of general well-being: the total psychological resilience score ($t = 11.874$, $P < 0.01$), satisfaction with income ($t = 2.869$, $P = 0.04$), and family burden level ($t = 3.475$, $P = 0.01$). Collectively, these three factors accounted for 34.4% of the variance in the total general well-being scores among clinical nurses.

Conclusions: Clinical nurses demonstrated moderately high levels of general well-being and psychological resilience, with a significant positive correlation observed between these two constructs. To enhance nurses' well-being and maintain workforce stability, hospitals should prioritize interventions targeting three key areas: (1) strengthening psychological resilience through evidence-based psychological capital training programs; (2) improving income satisfaction by optimizing compensation systems and ensuring equitable remuneration; and (3) mitigating family burdens by strengthening workplace and family support systems.

These measures are essential for sustaining workforce stability in clinical nursing settings.

1. Introduction

Clinical nurses, as frontline guardians of patient health, are consistently exposed to high-intensity, high-risk, and high-pressure work environments, leading to frequent psychological issues such as professional burnout, psychological distress, anxiety, and depression [1]. Well-being serves as a critical psychological indicator for assessing both mental health and quality of life [2]. Higher levels of well-being can enhance clinical nurses' potential, foster proactive engagement and creativity, improve work efficiency, and elevate the quality of nursing care [3]. Psychological resilience, a key component of psychological capital, enables individuals to adapt to stressors and traumatic events more effectively, respond to crises with greater positivity, and recover more rapidly [4]. Existing research on well-being and psychological resilience predominantly focuses on student populations (primarily college students), older adults, and patients, while studies investigating the current status between well-being and psychological resilience among clinical nurses remain limited. Therefore, this study aims to explore the current status and correlation between well-being and psychological resilience in clinical nurses, and to analyze the influencing factors of well-being, thereby providing evidence and insights for developing targeted interventions to enhance nurses' well-being, strengthen psychological resilience, and stabilize the nursing workforce.

Contribution of the Current Study

This study investigates the characteristics and interrelationships between well-being and psychological resilience among nurses, enriching theoretical frameworks in nursing psychology and occupational health. The findings provide data-driven support for health administrative departments to optimize nurse career protection policies, thereby contributing to the development of more resilient healthcare systems.

Methods and Materials

Participants and Study Setting

The study was conducted at Army Medical Center of PLA among 386 clinical nurses. Army Medical Center of PLA is one of the Level IIIA general

hospitals in Southwest of China.

Study Period and Design

The current study utilized a cross-sectional design and was conducted from January 1 to February 28, 2025.

Eligibility Criteria

Inclusion criteria: (1) Be a regular employee of the institution; (2) Possess a valid nurse practitioner qualification certificate and engage in clinical nursing practice; (3) Aged 20 years or older; (4) Voluntarily participate in the study and complete the questionnaire survey. Exclusion criteria: (1) Individuals currently on leave; (2) Those engaged in external training, academic studies, conference attendance, or personnel transfers; (3) Nurses holding administrative or research-focused roles.

Sample Size Determination and Sampling Procedures

The sample size was calculated by Raosoft Sample Size Calculator (<http://www.raosoft.com/samplesize.html>, accessed on: 1st January 2025). According to a margin error of 4.94%, a confidence level of 95%, and a population size of 20,000, a response distribution of 50%, sample of 386 respondents was calculated. The link to the questionnaire was distributed via the institutional communication platform "Lanxin" to the Nursing Department, which subsequently forwarded it to nursing staff groups across all clinical units. At the beginning of the survey, the research purpose, content, and estimated completion time were explicitly stated. Participation was strictly voluntary, requiring signed informed consent, with guaranteed confidentiality and anonymity of all data. To ensure data quality, all questionnaire items were set as mandatory fields to minimize missing responses. Automated logic validation was enabled in the SoJump backend. Additionally, device-based restrictions ensured single submission per mobile device, and a completeness check mechanism validated 100% completion of all entries.

Ethical Considerations

This study was approved by the Ethics Committee

of the Army Medical Center of PLA (Approval number: #2024-396.) The procedures of this study were following the Helsinki Declaration principles. All participants signed the written informed consent before starting the investigation, and all information collected from the participants were protected.

Outcome Measures

This study incorporates three questionnaires: Basic information survey, General Well-Being Schedule (GWB), and Connor-Davidson Resilience Scale (CD-RISC).

Basic information survey includes 10 items: gender, age, marital status, professional title, work experience, education level, participation in institutional mental health training, income satisfaction, family financial burden (assessed by whether household income adequately covers expenses), and career advancement needs.

The General Well-Being Schedule (GWB), originally designed by Fazio (1996) and culturally adapted for Chinese populations by Duan Jianhua [5-6], comprises 18 items across 6 dimensions: vitality, relaxation-tension balance, health concerns, mood state (depression or happiness), life satisfaction, and emotional/behavioral control. Scoring varies by item: 5-point scales (1-5) for items 2, 5, 6, and 7; 10-point scales (0-10) for items 15-18; and 6-point scales (1-6) for remaining items, yielding a total score of 14-120 (higher scores indicating greater well-being; Cronbach's $\alpha = 0.85$).

The CD-RISC, developed by Connor and Davidson and localized by Xiao Nan and Zhang Jianxin in 2007[7-8], measures psychological resilience through 25 items categorized into three dimensions: self-reliance, optimism, and perseverance. Using a 5-point Likert scale (0-4), total scores are converted to a 0-100 percentile range: 0-56 (low resilience), 57-70 (moderate),

and 71-100 (high resilience; Cronbach's $\alpha = 0.910$).

Statistical Analyses

The collected data were exported and organized using Microsoft Excel version 16.0, and statistical analysis was performed using SPSS version 26.0 (IBM, Armonk, NY, USA). Continuous variables conforming to a normal distribution were expressed as mean \pm standard deviation ($\bar{x} \pm s$), while non-normally distributed continuous variables were described using the median (interquartile range, IQR). Categorical variables were presented as rates or percentages. Spearman correlation analysis was used to assess the relationship between general well-being and psychological resilience. Multivariate logistic regression analysis was further conducted to explore the association between general well-being and psychological resilience. A P -value < 0.05 was considered statistically significant.

Results

Participant Characteristics

Among 386 clinical nurses, 24 (6.2%) were male and 362 (93.8%) were female. The mean age was 33.0 (9.0) years. Marital status: 104 (26.9%) were unmarried, 272 (70.5%) were married, and 10 (2.6%) were divorced/widowed. Professional titles: 186 (48.2%) held junior titles, 181 (46.9%) held intermediate titles, and 19 (4.9%) held senior titles. Years of service: 15.5% had ≤ 3 years, 6.0% had 3-5 years, and 78.5% had > 5 years. Education level: 6.0% had an associate degree or below, 92.0% had a bachelor's degree, and 2.1% had a master's degree. Mental health training: 56.2% had not received relevant training. Income satisfaction: 18.4% were dissatisfied, 13.5% were satisfied. Family burden: 44.3% reported heavy burdens, 6.0% reported light burdens. Promotion needs: 80.3% desired career advancement. See Table 1 for details.

Table 1 Clinical nurses' basic information and general well-being and psychological resilience scores ($n=386$)

Variables	Number (%) [$M(Q_R)$]	GWB ($\bar{x} \pm s$)	t/F	P	CD-RISC [$M(Q_R)$]	Z/H	P
Gender							
Male	24 (6.2)	83.96 \pm 15.19	1.444	0.150	98.50 (21.00)	-1.603	0.109
Female	362 (93.8)	79.57 \pm 14.35			91.00 (22.00)		

Age (years)	33.0 (9.0)	79.85±14.42	-	-	91.50 (22.00)	-	-
Marital status							
Unmarried	104 (26.9)	80.88±13.19			89.00 (22.00)		
Married	272 (70.5)	79.64±14.74	0.881	0.415	92.00 (23.00)	1.885	0.390
Divorced/widowed	10 (2.6)	74.90±18.00			83.00 (40.00)		
Professional							
	186 (48.2)	81.68±13.95			91.00 (22.00)		
			2.927	0.055		4.978	0.083
Junior							
Intermediate	181 (46.9)	78.19±14.46			92.00 (22.00)		
Senior	19 (4.9)	77.74±3.93			98.00 (25.00)		
Years of service							
<3years	60 (15.5)	83.60±13.01	1.697	0.167	93.50 (21.00)	5.087	0.166
3~5years	23 (6.0)	79.74±11.55			81.00 (15.00)		
5~10years	190 (49.2)	78.82±14.53			91.00 (23.00)		
>10years	113 (29.3)	79.61±15.30			93.00 (25.00)		
Education level							
Associate degree	23 (6.0)	86.74±13.85			87.00 (27.00)		
Bachelor's degree	355 (92.0)	79.39±14.40	2.837	0.060	92.00 (22.00)	5.051	0.080
Master's degree	8 (2.1)	80.38±13.81			92.00 (11.00)		
Mental health training							
Yes	169 (43.8)	80.12±14.42	0.326	0.745	93.00 (24.00)	-1.589	0.112
No	217 (56.2)	79.64±14.46			91.00 (22.00)		
Income							
Unsatisfactory	71 (18.4)	72.03±16.00			81.00 (20.00)		
Normal	263 (68.1)	81.05±13.40	15.019	<0.01	92.00 (21.00)	23.407	<0.01
Satisfied	52 (13.5)	84.46±13.51			97.50 (18.00)		
Family burden							
Heavy	171 (44.3)	75.91±13.92			88.00 (23.00)		
Normal	192 (49.7)	82.73±14.20	12.366	<0.01	93.00 (22.00)	23.855	<0.01
Light	23 (6.0)	85.00±13.13			91.00 (19.00)		
Promotion							
	310 (80.3)	79.83±14.06	-0.041	0.967	91.50 (22.00)	-0.863	0.388
Yes							
No	76 (19.7)	79.91±15.92			91.50 (20.00)		

The General Well-Being and Psychological Resilience Scores of Clinical Nurses

Among 386 clinical nurses, the total score of GWB was (79.85 ± 14.42) points, and the median psychological resilience score was 91.50 points with an interquartile range (IQR) of 22.00 points. Statistically significant differences were observed in both total GWB scores and psychological resilience scores among nurses with varying levels of income satisfaction and family burden ($P < 0.01$). See Table 1 for details.

Correlation Analysis between General Well-Being and Psychological Resilience in Clinical Nurses

Spearman correlation analysis was used to examine the relationship between general well-being and psychological resilience. The results indicated a significant positive correlation between the total score of general well-being and the total score of psychological resilience ($r=0.580, P<0.01$). Among the dimensions of general well-being, all five dimensions-energy, relaxation vs. tension, concerns about health, mood (depression vs. happiness), and control over emotions and behaviors-showed significant positive correlations with both the total score of psychological resilience and its three dimensions (self-reliance, optimism, and tenacity) ($r>0, P <0.01$). See Table 2 for details.

Table 2 Correlation analysis between general well-being and psychological resilience of clinical nurses (n=386)

Items	CD-RISC		Self-reliance		Optimism		Tenacity	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
GWB	0.580	<0.01	0.605	<0.01	0.430	<0.01	0.535	<0.01
Energy	0.583	<0.01	0.602	<0.01	0.451	<0.01	0.540	<0.01
Relaxation vs. tension	0.452	<0.01	0.455	<0.01	0.317	<0.01	0.433	<0.01
Concerns about health	0.357	<0.01	0.362	<0.01	0.267	<0.01	0.328	<0.01
Mood (depression vs. happiness)	0.561	<0.01	0.589	<0.01	0.431	<0.01	0.511	<0.01
Life satisfaction and enthusiasm	-0.004	0.938	0.004	0.934	-0.013	0.798	-0.012	0.813
Control over emotions and behaviors	0.430	<0.01	0.484	<0.01	0.302	<0.01	0.379	<0.01

Multivariate Linear Regression Analysis of General Well-Being

Using the total score of general well-being as the dependent variable, variables with statistical significance in univariate analysis (satisfaction with income, family burden level) and the total score of psychological resilience were included as independent variables in a multiple linear

regression analysis. Variable coding is detailed in Table 3. The results indicated that the total score of psychological resilience, satisfaction with income, and family burden level were all significant influencing factors of general well-being ($P<0.01$). Collectively, these variables accounted for 34.4% of the variance in the general well-being scores of clinical nurses. See Table 4 for details.

Table 3 Assignment of variables for multiple linear regression analysis

Variables	Coding
GWB	Original coding
CD-RISC	Original coding
Income satisfaction	0=Dissatisfied; 1=Normal; 2=Satisfied
Family burden	0=Heavy; 1=Normal; 2=Light

Table 4 Multiple linear regression analysis of factors influencing general well-being

Variables	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>P</i>
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Constant	27.505	3.789	-	7.259	<0.01
CD-RISC	0.448	0.038	0.504	11.874	<0.01
Income satisfaction	3.165	1.103	0.124	2.869	0.004
Family burden	3.573	1.028	0.148	3.475	0.001

Notes: $R^2=0.343$, adjust $R^2=0.338$, $F=66.549$, $P<0.01$.

Discussion

Current status of general well-being and psychological resilience among clinical nurses

The results of this study demonstrated that both male and female clinical nurses exhibited significantly higher general well-being scores compared to the national norm [9], suggesting a relatively elevated level of subjective well-being within this population. These findings are consistent with the survey conducted by Shi et al [10], yet marginally exceed those reported in studies by Chen et al and Li et al [11-12]. Methodological discrepancies, such as divergent sampling approaches, multistage stratified random sampling, cluster sampling, and convenience sampling, data collection tools, such as electronic versus paper-based questionnaires, and variations in demographic characteristics, such as gender, age, and clinical departments, may partially account for these differences.

The observed enhancement in general well-being among clinical nurses could be attributed to three primary factors. Firstly, a substantial proportion of participants (over 5 years of clinical experience) demonstrated stress-related growth, enabling them to employ proactive coping strategies when addressing occupational challenges [13]. Secondly, recent societal recognition and improved professional status of nurses, driven by heightened public appreciation for healthcare workers, likely contributed to their psychological well-being [14]. Thirdly, institutional support mechanisms, such as mental health education training (reported by 43.8% of participants) and regular psychological counseling workshops, reflect organizational efforts to mitigate emotional distress and foster workplace satisfaction. These interventions may collectively explain the upward trend in nurses' general well-being.

The study results demonstrated that clinical nurse's psychological resilience score was significantly higher than the national norm (65.4 ± 13.9), indicating a robust level of

psychological resilience. Compared to prior studies using the same scale, these findings surpassed those reported by Li Jia [16], Huang Yuxia [17], and operating room nurse cohorts [18], while aligning closely with Chen Xi et al.'s nationwide survey of 70,932 nurses [19]. The elevated psychological resilience may stem from enhanced public health emergency management capabilities and systematic training during pandemic, which strengthened nurses' ability to navigate stressors and develop adaptive cognitive schemas for adversity. Additionally, institutional support mechanisms, such as mental health workshops and flexible scheduling policies, likely contributed to optimizing resilience [20]. These insights underscore the importance of sustained resilience-building interventions to improve clinical performance and occupational well-being.

Factors Influencing General Well-Being in Clinical Nurses

This study identified psychological resilience score, income satisfaction, and family burden level as key determinants of general well-being among clinical nurses. A significant positive correlation was observed between psychological resilience and general well-being, with higher resilience levels corresponding to stronger well-being—a finding consistent with Qu Ruijie et al [21]. Nurses with greater psychological resilience are more likely to adopt optimistic attitudes during crises [22], leverage positive coping strategies to resolve challenges, adapt to changes through self-regulation, and maintain optimal personal well-being. Enhanced psychological resilience also promotes the accumulation of positive emotions while mitigating negative emotional states, thereby reinforcing well-being.

Income satisfaction significantly influenced well-being, likely because financial contentment reflects not only psychological fulfillment but also serves as a holistic indicator of life quality [24-25]. Economic stability remains foundational to achieving higher well-being, as nurses with higher

incomes experience greater material security and improved quality of life.

Family burden emerged as another critical factor, with lighter burdens correlating with higher well-being. In this cohort, 70.5% of nurses were married and potentially responsible for childcare and eldercare. Excessive family burdens may amplify financial and psychological stress, collectively diminishing well-being. Additionally, 93.8% of participants were female, often bearing disproportionate caregiving and educational responsibilities within families, which increases time and energy expenditures on domestic duties, further reducing personal well-being.

Research Implications and Limitations

Although the research findings indicate improved adaptability and favorable psychological states among clinical nurses, hospitals should still enhance psychological capital-related training by regularly organizing psychological lectures and providing both online and offline psychological course resources, along with professional counseling services. Additionally, compensation systems should be refined through forums or anonymous surveys to assess nurses' salary satisfaction, incorporate their feedback, and optimize existing policies. Proactively monitoring the psychological well-being and living conditions of clinical nurses, understanding their family circumstances, and providing financial and emotional support during family-related challenges. Besides, strengthening workplace support systems. Those are critical to enhancing general well-being and maintaining workforce stability in nursing teams.

However, this study has limitations. First, it did not classify nurses by department, preventing an exploration of differences in well-being and resilience across specialties. Second, the three identified influencing factors explained only 34.4% of the variance in general well-being, suggesting that other variables require further investigation.

Conclusions

The study findings reveal that clinical nurses exhibit high levels of general well-being and psychological resilience, with a significant positive correlation between these two factors. Furthermore, psychological resilience, income satisfaction, and the degree of family burden are

identified as key determinants influencing general well-being.

Acknowledgments

We are grateful to all the data collectors and study participants.

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