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The Relationships between Mindfulness, Resilience, and Clinical Self-Efficacy among Iranian Nurses

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ABSTRACT

Resilience and self-efficacy are critical attributes for nurses. While multiple factors influence these traits, understanding their determinants could enhance nurses' resilience and clinical performance, ultimately improving healthcare quality. This study explored the relationships between mindfulness, resilience, and clinical self-efficacy among Iranian nurses. A descriptive-correlational study was conducted in 2023 with 540 nurses from Lorestan Educational Hospitals in Khorramabad, Iran. Data were collected using demographic information, Connor and Davidson's Resilience Scale, Brown and Ryan's Mindfulness Questionnaire, and Cheraghi et al.'s Clinical Performance Self-Efficacy Scale. The results showed that nurses exhibited high clinical performance self-efficacy, moderate-to-high mindfulness, and moderate resilience. Significant positive correlations were observed between mindfulness and resilience ($r=0.374$, $P< 0.001$), mindfulness and clinical self-efficacy ($r=0.331$, $P< 0.001$), and resilience and clinical self-efficacy ($r=0.452$, $P=0.001$), with all correlations being statistically significant. Regression analysis further revealed that each one-unit increase in mindfulness was associated with a 0.374-unit rise in resilience. Similarly, every one-unit increase in mindfulness corresponded to a 0.386-unit increase in clinical self-efficacy. In contrast, a one-unit increase in resilience was linked to a 0.498-unit increase in clinical self-efficacy. Higher levels of mindfulness were found to positively influence nurses' resilience and clinical self-efficacy. To enhance these competencies training should be incorporated into continuing education programs for hospital nurses. Furthermore, nursing students should receive targeted preparation in these areas during their clinical training to better equip them for professional practice.

Keywords: Resilience; Self-efficacy; Mindfulness; Nurses

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Introduction

Nurses play a vital role in healthcare, and their clinical performance (CP) directly influences patient outcomes and overall care quality. Effective nursing practice ensures safer, more efficient healthcare environments and enhances patient experiences. Maintaining high clinical performance is essential for delivering excellent patient care and optimizing healthcare effectiveness [1].

Clinical performance encompasses nurses' methods and processes in patient care, including executing duties and responsibilities that directly impact treatment efficacy, patient recovery, and satisfaction. Nurse performance decline can compromise healthcare systems' ability to achieve primary objectives [2], resulting in reduced productivity, diminished patient satisfaction, and increased demand for nursing staff [3].

Understanding factors influencing CP is critical for improving nursing care. Work-related stressors—including overwork, role conflict, time constraints, inadequate self-care, poor workplace relationships, perceived inability to deliver quality care, exposure to patient mortality, conflicts with physicians and supervisors, and emotional unpreparedness—represent significant challenges that can negatively impact nurses' well-being and performance [4]. Addressing these stressors requires empowering nurses through psychological strategies such as enhancing professional commitment, resilience, and self-efficacy [5].

Resilience, a critical adaptive trait enabling nurses to withstand and recover from adversity, is shaped by multiple factors and can be enhanced through targeted interventions [6]. This construct, studied across disciplines including psychotherapy, social psychology, and healthcare management, encompasses personal characteristics such as self-efficacy, goal orientation, coping history, and social support networks [7,8]. In healthcare, resilience equips nurses to manage stressors like irregular work-rest cycles, excessive responsibilities, limited vacation time, and challenging patient interactions [9]. Clinical self-efficacy refers to nurses' confidence to execute clinical tasks and effectively achieve patient care objectives. Research links self-efficacy to critical clinical skills such as patient assessment, care planning, and outcome evaluation. Furthermore, self-regulation in clinical settings enhances professional knowledge, adaptability, and evidence-based practice [10].

Emerging evidence highlights resilience as a catalyst for both self-efficacy and mental health. Karolyi and Sagun [11] demonstrated that higher resilience correlates with elevated self-efficacy, while Sharma [12] identified positive associations between resilience, psychological well-being, and self-efficacy.

Mindfulness-based interventions show promise in mitigating occupational challenges. Studies report reduced mental distress, anxiety, burnout, and fatigue, alongside improved job satisfaction, attention, and sleep quality among nurses [13–19]. Jenry and Baranowski [20] emphasize mindfulness as a tool for reframing stress responses, while Reiss et al. [21] position it as a key adaptive process in workplace resilience models.

Given the critical role of resilience and clinical self-efficacy in nursing practice and limited research on their interrelationships, this study examines the associations between mindfulness, resilience, and clinical self-efficacy among nurses at Lorestan educational hospitals.

Materials and Methods

Study Design

This descriptive-analytical cross-sectional study was conducted among nurses in educational hospitals affiliated with Lorestan University of Medical Sciences.

Sampling, Setting, and Participants:

A stratified random sampling method was employed. Five hospitals were categorized as strata: Shohadei Ashayir, Shahid Rahimi, Shahid Madani, Mehr Psychiatry Hospital, and other educational treatment centers under Lorestan University of Medical Sciences. From these strata, 540 nurses meeting the inclusion criteria were randomly selected. The researcher conducted sampling over four months.

Inclusion Criteria

Nurses with ≥2 years of clinical experience.

Exclusion Criteria

History of drug addiction, prior participation in mindfulness training programs (to avoid confounding effects on the "raw" baseline mindfulness levels under investigation), receiving concurrent psychological or counseling interventions and incomplete questionnaire responses

Sample Size Calculation

The sample size was determined using the formula for estimating population means based on data from Yousefi et al. [22], which reported a resilience score

standard deviation of 7.11. With a 95% confidence level (α = 0.05) and precision of d = 0.6, the calculated sample size was 540 participants. of which 216 were allocated to the Shohada Ashayer educational and medical centers, 194 to Shahid Rahimi, 93 to Madani, and 35 to Mehr Psychiatry Hospital. Z 1-α/2=1.96, σ= 7.11, d=0.6.

Data collection

Information was collected using a demographic information form, mindful attention awareness scale (MAAS), resilience scale (CD-RIS), and clinical self-efficacy scale. Demographic data included age, sexuality, marital status, educational level, employment status, ward, work experience, and spouse's education.

MAAS questionnaire is a mindfulness questionnaire developed in 2003 by Brown and Ryan. It measures an individual's level of mindfulness by assessing their attention and awareness of the present moment. The questionnaire consists of 15 items rated on a 6-point Likert scale, with higher scores indicating higher levels of mindfulness [23]. The Brown and Ryan questionnaire has been used in various studies to investigate the relationship between mindfulness and different outcomes, such as burnout, job stress, and psychological flexibility [24, 25]. In Iran, Razmposh et al. calculated its reliability coefficient by Cronbach's alpha method to be 89% and its validity by factor analysis to be 87% [26].

The resilience Scale (CD-RIS) consists of 25 items. The scoring procedure is a 5-degree Likert scale from a completely false (score 0) to a perfectly correct (score 4) item. Its total points are in the range of 0-100, with a cutoff point of 50. A score above 50 represents a high resilience rate and vice versa [27]. Li et al., using the internal consistency method, reported Cronbach's alpha of 0.91 for this questionnaire [28].

The clinical self-efficacy scale has 37 items and is an instrument based on nursing processes. It has four parts: patient assessment (12 items), nursing diagnosis and planning of care (9 items), implementation of care plan (10 items), and care plan evaluation (6 items). Cheraghi and colleagues made it. This scale has a maximum score of 148 and a minimum score of 37. They obtained the reliability of this Scale using Cronbach's alpha coefficient of 0.96 [29].

Data analysis

After entering the data into SPSS software version 25, descriptive statistics were used to describe the data, including central and dispersion indices for quantitative variables and frequency and percentage for qualitative variables. Since the data distribution by the Kolmogorov-Smirnov test was normal, T-tests) Independent t-tests analyzed the data), one-way analyses of variance, Pearson's correlation coefficient, and Multiple linear regression analysis (MLR). The significance level of all tests was considered P<0.05.

Results

No samples were excluded from the study during data analysis. Based on the data, the average age of the people was 33.55±5.83 years. Among the 540 participants in the study, 74.60% were women, and 63.9% were married. About 96.70 percent of them had a bachelor's degree, and the average work experience of people was 9.20±5.59. About 63.5% of nurses were from no intensive care units, and 36.50% were from intensive care units. About 88.7% of their wives had a bachelor's degree (Table 1).

Table 1. Frequency distribution of nurses studied based on demographic data

Variables		Frequency(%)
Sex	Male	137(25.40)
	Female	403(74.60)
Marital Status	Single	195(36.10)
	Married	345(63.90)
Level of Education	Bachelor	522(96.70)
	Master	18(3.30)
Employment Status	permanent	349(64.60)
	Temporary-to-permanent	25(4.60)
	Contractual	21(3.90)
	Corporative	18(3.30)
	Conscription law's conscripts	127(23.50)
WARD	Non-Intensive care	343(63.50)
	Intensive care	197(36.50)
Spouse's education	Diploma	10(1.90)
	Associate Degree	14(2.60)
	Bachelor	306(56.70)
	Master	15(2.80)

The mean scores for nurses were as follows: mindfulness (64.47 ±11.82), resilience (54.10 ±16.12), and clinical performance self-efficacy (116.55 ±18.18). The results indicated that nurses employed in Lorestan Educational Hospitals demonstrated high clinical self-efficacy, moderate-to-high mindfulness, and moderate resilience. Pearson's correlation coefficient was used to assess relationships between variables. The findings revealed significant positive correlations between mindfulness and resilience (r = 0.37, p< 0.001), mindfulness and clinical self-efficacy (r =0.33, p =0.001), as well as mindfulness and the following clinical self-efficacy subscales: patient assessment (r =0.33, p<0.001), nursing diagnosis/care planning (r=0.30, p<0.001), care program implementation (r= 0.268, p =0.001), care program evaluation (r= 0.21, p<0.001).

Similarly, resilience and clinical self-efficacy were positively correlated (r = 0.45, p<0.001), as were resilience and the following clinical self-efficacy subscales: patient assessment (r =0.45, p=0.001), Nursing diagnosis/care planning (r =0.39, p<0.001), Care program implementation (r = 0.37, p< 0.001), and Care program evaluation (r = 0.312, p< 0.001).

After controlling for age, education level, marital status, work experience, gender, ward, employment status, and spouse's education, MLR demonstrated a significant positive relationship between mindfulness and resilience (p<0.001). Specifically, a one-unit increase in mindfulness was associated with a 0.374-unit increase in resilience (see Table 2). Also, after controlling these variables, mindfulness and clinical self-efficacy have a positive and significant correlation (P<0.001), so that for every 1 unit of increase in mindfulness, 0.38 units of self-efficacy increase (Table 3). The fourth table indicates a significant positive relationship between resilience and clinical self-efficacy (P<0.001). Specifically, for each unit increase in resilience, there is a corresponding 0.49-unit increase in self-efficacy. (Table 4).

Table 2: Multiple linear regression results of mindfulness and resilience relationship

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	34.86	33.11		1.05	0.29
Mindfulness	0.49	0.06	0.37	7.38	0.000
Age	0.64	0.49	0.21	1.30	0.192
Level of Education	5.84	4.15	0.07	1.40	0.160
Marriage status	-21.58	14.74	-0.07	-1.46	0.144
Work experience	-0.45	0.50	-0.14	-0.89	0.371
Gender	1.74	2.17	0.04	0.80	0.424
Ward	3.19	1.66	0.09	1.91	0.056
Conscription law's conscripts	7.08	3.97	0.09	1.78	0.076
Corporative	-6.45	4.47	-0.07	-1.44	0.150
Contractual	-5.22	3.50	-0.07	-1.49	0.137
Temporary-to-permanent	2.14	4.25	0.02	0.50	0.615
Spouse's education /Diploma	4.79	5.10	0.05	0.93	0.349
Spouse's education /Associate Degree	-2.27	4.32	-0.02	-0.52	0.59
Spouse's education /Master	-3.78	3.97	-0.04	-0.95	0.34

Dependent Variable: Resilience; R Square =0.224

Table 3. Multiple linear regression results of mindfulness and self-efficacy relationship

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	29.38	36.53		0.80	0.422
Mindfulness	0.57	0.07	0.38	7.81	0.000
Age	1.08	0.54	0.32	1.99	0.047
Level of Education	-0.49	4.57	-0.00	-0.10	0.914
Marriage status	-4.77	16.27	-0.01	-0.29	0.769
Work experience	-0.67	0.55	-0.19	-1.20	0.228
Gender	13.67	2.40	0.28	5.69	0.000
Ward	4.08	1.83	0.10	2.22	0.027
Conscription law's conscripts	6.25	4.38	0.07	1.42	0.155
Corporative	-3.25	4.93	-0.03	-0.65	0.511
Contractual	2.58	3.86	0.03	0.66	0.504
Temporary-to-permanent	-1.35	4.68	-0.01	-0.28	0.773
Spouse's education /Diploma	6.12	5.63	0.05	1.08	0.278
Spouse's education /Associate degree	-0.69	4.76	-0.00	-0.14	0.884
Spouse's education /Master	-2.01	4.38	-0.02	-0.45	0.647

Dependent Variable: self-efficacy; R Square =0.262

Table 4: Multiple linear regression results of Resilience and self-efficacy relationship

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	42.288	30.89		1.369	0.172
Self-efficacy	0.44	0.04	0.49	10.18	0.000
Age	0.28	0.46	0.09	0.62	0.535
Level of Education	6.36	3.90	0.07	1.63	0.104
Marriage status	-23.57	13.85	-0.07	-1.70	0.090
Work experience	-0.23	0.47	-0.07	-0.50	0.617
Gender	-4.63	2.11	-0.10	-2.18	0.029
Ward	1.65	1.58	0.04	1.04	0.297
Conscription law's conscripts	5.86	3.74	0.07	1.56	0.118
Corporative	-4.13	4.20	-0.04	-0.98	0.326
Contractual	-8.95	3.23	-0.12	-2.76	0.006
Temporary-to-permanent	3.39	3.99	0.04	0.84	0.397
Spouse's education /Diploma	1.09	4.80	0.01	0.22	0.821
Spouse's education /Associate Degree	-2.50	4.06	-0.03	-0.61	0.539
Spouse's education /Master	-4.16	3.73	-0.05	-1.11	0.265

Dependent Variable: Resilience; R Square =0.312

Discussion

This study investigated the relationship between mindfulness and resilience and nurses' clinical self-efficacy. The results showed that mindfulness, resilience, and clinical self-efficacy had a positive and significant correlation, and resilience and clinical self-efficacy also had a positive and significant correlation. Mindfulness and resilience were related to clinical self-efficacy on all subscales. In addition, the results showed that nurses employed in Lorestan educational hospitals had high clinical performance self-efficacy, moderate to high mindfulness, and moderate resilience. The nursing literature highlights the significance of self-efficacy and resilience in nursing, particularly in managing work-related challenges and providing quality care to patients. The results of Ghawadra et al., in a systematic review, showed that strengthening self-efficacy and resilience can improve work engagement and personal satisfaction of nurses [30]. In another study in Gorgan, Shamooshaki M T et al. also showed that mindfulness could predict job stress, and nurses with more mindfulness experience less stress [31]. Another study conducted on nurses in Taiwan by Chen SH et al. found that perceived stress mediates the relationship between mindfulness and resilience [32]. In addition, the study of Zarei et al. showed that mindfulness in nurses is related to psychological resilience [33]. These results are consistent with the present study because stress mediates the relationship between mindfulness and resilience.

A study that investigated the impact of art therapy based on mindfulness in clinical nurses showed that after 12 therapy sessions, the experimental group had significantly higher self-efficacy scores than the control group [34]. An experimental study on the effect of self-care training based on mindfulness on the quality of life of female nurses showed that the experimental group had higher grades in the psychological dimension of quality of life, which can be related to self-efficacy [35]. A study found that mindfulness is a factor that affects nurses' resilience, which can be related to self-efficacy [36]. This result is in line with the results of the present study. One study also showed that teaching techniques based on mindfulness do not exert any significant effect on the self-efficacy of female nurses. This result is not consistent with the results of the aforementioned studies and the present research [37]. The unisexuality of the population may explain this difference studied in their research and the small number of research samples.

The relationship between mindfulness and resilience can be understood as the mediating effects of stress and other factors. Mindfulness is a quality of awareness characterized by the clarity of present experiences and actions, which can help people break free of automatic thoughts, habits, and unhealthy behavior patterns. Quality of consciousness is associated with various structures of well-being and increased self-awareness. Mindfulness can increase a person's flexibility and ability to cope with stress, improving well-being and adaptability in different situations [38]. Additionally, mindfulness practices were associated with improved self-concept clarity and coping self-efficacy. These factors can contribute to a person's overall self-efficacy by promoting a clear understanding of oneself and increasing their ability to deal with stress and challenges [39]. Creating a strategy (for example, enhancing mindfulness)to develop nurses' self-efficacy and reduce workplace stress can increase nurses' resilience. In addition, this study's findings showed a positive and significant correlation between resilience and clinical self-efficacy. Sagun et al. also showed that high resilience in individuals is usually associated with high self-efficacy [40].

A potential limitation of this study is the cross-sectional design precludes establishing temporal associations or causal inferences between mindfulness, resilience, and clinical self-efficacy. Another limitation of this study was the lack of sufficient accuracy in filling out the questionnaire, and the importance of the study was explained to the nurses.

The results of this study provide a valuable framework for guiding future research in this field. These updated findings in nursing will enable a more coherent understanding to guide research and care for nurses' mental health in practice. Mindfulness is a psychological concept that means paying conscious attention to our internal and external experiences without being black and white. Future research should investigate the effects of mindfulness-based training and exercises on nurses' resilience and self-efficacy through interventional and multi-group studies.

Conclusion

This research can help nursing managers identify the factors affecting resilience and clinical self-efficacy of nurses, which can support mindfulness as an effective method in this field. It can also help them take

appropriate measures to improve the urgently needed working conditions of nurses.

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Ethical Consideration

This study was approved by the Ethics Committee of LUMS (IR.LUMS.REC.1401.254). Conscious consent was obtained from all the participants. After obtaining written permission from LUMS, the researcher referred to Lorestan educational hospitals in Khorramabad, and stratified sampling was performed among the nurses based on the entry and exit criteria. The researcher then introduced herself and briefly described the research objectives. Then, the researcher presented the (printed) questionnaire to the nurses, and after completing the questionnaire, it was checked for any defects. In case of defects, they were asked to complete it again.

Data Availability

The corresponding author can provide the data sets used and analyzed through this study upon reasonable request.

Conflict of interest

The authors state that they have no competing interests.

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Authorship contribution statement

Z.K., T.T., A.B., R.M., M.T. and H.N. contributed to the study aim, research design, and overall structure of the paper. R.M. performed all statistical analyses and drafted the paper. All authors have read and agreed to the published version of the paper.

Declaration of Generative AI

The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of tables, or their corresponding captions.

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