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The relationship of perceived nurse manager competence with job satisfaction and turnover intention among clinical nurses: an analytical cross-sectional study

Alireza Mirzaei^{1,2} , Reza Imashi³ , Roghayeh Yaghoobi Saghezchi³ , Mohammad Javad Jafari¹  and Reza Nemati-Vakilabad^{4,5*} 

Abstract

Background Nursing managers have the potential to significantly impact the outcomes of nurses, patients, and organizations. Their competencies for effective performance are crucial. The global nursing workforce is facing a severe shortage of nurses. Dissatisfaction with management is one of the most important reasons for nurses' inclination to leave their jobs. Therefore, this study examines the relationship between nursing managers' competencies, job satisfaction and intention to leave among clinical nurses.

Methods An analytical cross-sectional study was conducted on 354 nurses in five hospitals affiliated with Ardabil University of Medical Sciences from May to August 2023. This research used web-based software to design demographic information forms, nurse manager competency scale, turnover intention, and single-item job satisfaction questionnaires. The significance level for the study was set at $p < 0.05$.

Results This study revealed that participants had an average score of 3.06 out of 5 in perceived nurse manager competence. Only one-fourth of the participants (25.7%) were satisfied with their current job, and less than half (46.9%) intended to leave. Employee support and development, change and resource management, supervision and quality monitoring, and personal mastery positively influenced nurses' job satisfaction. These competencies hurt employees' intention to leave their jobs.

Conclusions The research findings indicate that nursing managers in Iran have lower competency than in previous studies. Developing and strengthening these competencies is very important, as it significantly improves job satisfaction and reduces nurses' tendency to leave their jobs. Additionally, the results show that nursing managers who excel in supporting and developing staff, resource management, quality supervision, and personal mastery positively impact nurses' job satisfaction. However, these competencies can also help reduce employees' intention to leave their jobs. Retaining and maintaining nurses in the healthcare field is of utmost importance.

Keywords Competence, Job satisfaction, Nursing management, Nurse, Turnover intention

*Correspondence:
Reza Nemati-Vakilabad
nematireza1998@gmail.com

Full list of author information is available at the end of the article



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Introduction

Nurse managers play a critical role in overseeing work units and directly supporting nursing staff to tackle various healthcare challenges [1, 2]. Their leadership styles can profoundly influence nurse, patient, and organizational outcomes, with positive and negative implications [2]. A systematic review by Akbiyik et al. highlighted that management approaches focused on building relationships can improve patient outcomes and higher care quality [3]. Furthermore, previous research has established a strong link between leadership styles and management practices, vital for employee satisfaction and retention [4, 5]. Effective perceived nurse manager competence—the specific skills, behaviors, and characteristics necessary for successful performance—are essential for fostering a productive work environment. These competencies encompass various elements, including communication, decision-making, and emotional intelligence, collectively enhance patient care quality [6]. Cummings et al. conducted a systematic review that revealed significant associations between different leadership styles and key nurse outcomes, such as productivity, job satisfaction, and employee retention; by understanding and enhancing the competencies of nurse managers, this study aims to address the pressing clinical and social issues related to workforce stability and patient care quality in healthcare settings [7]. In addition, the results of Shojaei et al.'s study in northwest Iran (Tabriz) showed a significant relationship between nursing managers' leadership and nurses' job satisfaction, even though nursing managers considered their leadership and management styles collaborative and consultative. However, the opinion of the nurses working in the therapeutic centers was not like this, and they described their leadership and management style as autocratic [8].

The current situation of the global nursing workforce is characterized by a critical shortage of nurses, an increasing number of nurses retiring in the next few years, and an increasing proportion of nurses leaving and planning to leave their organizations in the next few years [9, 10]. Evidence supports the relationship between the quality of the practice environment and nurse outcomes; management support is one of the dimensions underlying the structure of the practice environment [11, 12]. The nurses' work environment, which encompasses organizational and social elements, serves as the backdrop for the patient care provided by nurses. The work environment is regarded as a crucial factor for the success of any healthcare organization that aims to maintain good standing and compete effectively in achieving organizational and employee goals [13]. Researchers examined the impact of the work environment on nurses' turnover intention. They found that "dissatisfaction with management" was the top reason for nurses' intention to quit their jobs

and emphasized the need to explore the competencies of nurse managers further and how they impact the performance of nurses in clinical settings [6, 14]. Additionally, high turnover rates among new nurse graduates are a significant concern in healthcare [15]. This is due to the challenging transition from nursing school to clinical practice, lack of support, and emotional strain [16].

The global nursing workforce faces a critical shortage, exacerbated by an increasing number of retirements and a rising proportion of nurses planning to leave their organizations in the coming years [8, 9]. Research has demonstrated a strong relationship between the quality of the practice environment and nurse outcomes, with management support being a key dimension of this environment [10, 11]. A positive work environment, which includes both organizational and social elements, is essential for effective patient care and the overall success of healthcare organizations [12].

Dissatisfaction with management has emerged as the leading reason for nurses' intentions to quit, highlighting the urgent need to explore the competencies of nurse managers and their impact on nursing performance in clinical settings [6, 13]. Effective perceived nurse manager competence—such as communication, leadership, and emotional intelligence—is crucial for fostering a supportive work environment that can mitigate turnover intentions among nursing staff. Additionally, high turnover rates among newly graduated nurses pose a significant challenge, often stemming from difficulties in transitioning from academic settings to clinical practice, insufficient support, and emotional strain [14, 15]. Addressing these issues through enhanced perceived nurse manager competence may lead to improved retention and better patient care outcomes.

The current body of research presents compelling evidence that nurse managers with strong management skills can greatly empower their nursing staff. This empowerment is associated with various positive outcomes, such as increased job satisfaction [17, 18], heightened professional commitment [19], greater work participation [20], improved safety performance [21], and the encouragement of innovative work behaviors [22]. However, there hasn't been sufficient exploration of how Dissatisfaction with management has emerged as the leading reason for nurses' intentions to quit, highlighting the urgent need to explore the competencies of nurse managers and their impact on nursing performance in clinical settings [6, 13]. Effective perceived nurse manager competence—such as communication, leadership, and emotional intelligence—are crucial for fostering a supportive work environment that can mitigate turnover intentions among nursing staff. Additionally, high turnover rates among newly graduated nurses pose a significant challenge, often stemming from difficulties

in transitioning from academic settings to clinical practice, insufficient support, and emotional strain [14, 15]. Addressing these issues through enhanced perceived nurse manager competence may lead to improved retention and better patient care outcomes.

impact the work outcomes of clinical nurses in the specific context of Iran. This knowledge gap is especially significant considering the challenges currently facing the nursing workforce in Iran. With a critical shortage of nurses, an aging nursing population, and a growing number of nurses expressing intentions to leave their organizations and the profession, it is more important than ever to understand the factors contributing to job satisfaction and turnover intention. Existing literature indicates that factors such as management support, workplace culture, and professional development opportunities play crucial roles in influencing nurses' job satisfaction and retention rates.

Our study explores how perceived nurse manager competence relate to job satisfaction and turnover intention among clinical nurses in Iran. By addressing this gap in the literature, we seek to underscore the necessity of effective nurse management in promoting workforce stability and enhancing patient care outcomes within the Iranian healthcare system. This research has the potential to significantly improve nurses' working conditions and the quality of patient care in Iran.

Methods

Design

An analytical cross-sectional study was conducted in Ardabil, northwest of Iran, following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines [23].

Setting and sample

Data was collected from May to August 2023 using a simple random sampling technique. The study involved clinical nurses from five educational-therapeutic hospitals affiliated with Ardabil University of Medical Sciences. The inclusion and exclusion criteria were carefully considered, ensuring a comprehensive and well-planned study. Inclusion criteria included a willingness to participate, a minimum of six months of work experience, and no history of hearing disorders, neurological conditions, or psychiatric diseases. Additionally, participants must not hold chief or head nurse positions, as the dynamics and relationships of staff in leadership roles may differ significantly from those of general staff nurses, potentially influencing the study's outcomes. Exclusion criteria included individuals with leadership responsibilities that could affect their perspectives on job satisfaction and turnover intention. Sample size calculation was done by the formula: $n = 1.96^2 \times p \times (1-p) / d^2$, where $p = 0.5$ and $d = 0.05$ indicated the acceptable margin of error (5.0%); this formula required 382 participants. Considering a 10% non-response rate, the final sample size was determined to be 420 participants. The sample attrition rate in this study was 15.7%, where 66 incomplete questionnaires were removed due to data deficiency. Finally, data from 354 samples were analyzed (Fig. 1).

Data collection

The researchers used a demographic information form and the Nurse Manager Competency Scale to collect data. Additionally, two single-item measures were used to assess job satisfaction and turnover intention. The questionnaires were designed using web-based software and sent to clinical nurses through email and virtual messengers (WhatsApp, Telegram, e.g.). The nurses then

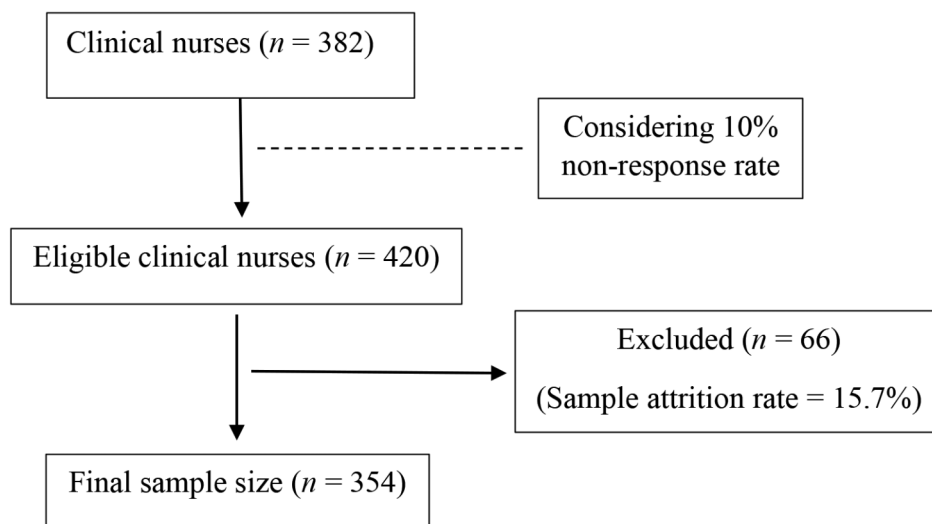


Fig. 1 Flow chart of the study sample selection

completed the questionnaires through a self-administered form.

Demographic information form

The study collected demographic information from clinical nurses using a structured form that included six closed-ended questions: age, working experience, gender, education level, marital status, and unit.

All the participants involved full-time clinical nurses whose employment status could affect their commitment to professional development and innovative practices. Participants had diverse educational levels, with many holding advanced degrees such as BSN or MSN, which could indicate a greater familiarity with innovative practices and a proactive approach to professional development. Their varied working experiences may influence their perspectives on innovation in clinical settings, with more experienced nurses likely bringing different insights than newly qualified ones. Additionally, participants were assigned to various clinical units (e.g., intensive care, emergency, pediatrics), potentially shaping their experiences and exposure to innovative practices based on the unit's culture and support for new ideas. These factors highlight the possible influence of demographic characteristics on the attitudes and engagement of clinical nurses in their professional roles.

Nurse manager competency scale

The *Nurse Manager Competency Scale* used in the study was developed by Choi et al. [6]. This scale includes 60 items that capture five domains of perceived nurse manager competence, which are: (1) Staff advocacy and development (12 items), which evaluated the competencies of advocating for the interests of staff and nurturing their potential for development; (2) Team communication and collaboration (15 items), which evaluated the competencies necessary to create united teams by promoting effective communication and cooperation among team members; (3) Change and resource management (10 items), which evaluated the competencies involved in effectively managing and adapting to changes, as well as optimizing resource allocation; (4) Quality monitoring and pursuance (11 items), which evaluated the competencies for safeguarding the quality of care and cultivating a quality culture in the work unit; (5) Personal mastery (12 items), which evaluated the competencies related to self-knowledge, internal attributes, purpose, and vision. Participants rated their nurse managers' competencies using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Average scores were calculated for each subscale and overall scale. Higher scores indicate a more positive perceived nurse manager competence and vice versa. The instrument had a scale-level content validity index (S-CVI) of 0.94, indicating high relevance

and clarity. Internal consistency coefficients were calculated using Cronbach's alpha to assess the extent to which the items measure the same construct. An internal consistency coefficient of 0.96 was obtained for the overall scale, indicating that the instrument is reliable.

Validation of the nurse manager competency scale

In the study, the Nurse Manager Competency Scale was translated using the Forward-Backward method, and its psychometric properties were tested among 180 clinical nurses. Content validity was evaluated using a qualitative approach based on the opinions of a panel of experts, including ten nursing faculty members. The experts stated that the questionnaire was suitable regarding wording, item allocation, and scaling. Necessary corrections were made based on brief grammatical suggestions at this stage. Confirmatory factor analysis (CFA) was used to measure and determine construct validity. The sample size at this stage was estimated based on the ratio of participants to items 3:1 [24]. Maximum likelihood estimation (MLE) was used to estimate the parameters. The fit indices of the model were evaluated using the following parameters: $\chi^2/df \leq 3$, Root Mean Square Error of Approximation (RMSEA) ≤ 0.08 [25], Goodness of Fit Index (GFI) ≥ 0.90 , Comparative Fit Index (CFI) ≥ 0.90 , Tucker-Lewis Index (TLI) ≥ 0.90 , Normal Fit Index (NFI) ≥ 0.90 [26].

The factor loading of all items was more than 0.3 ($p < 0.001$), and CFA results for the 5-factor model showed that all latent factors have acceptable correlation coefficients with related items. Additionally, all relationships between dimensions and their items were significant, and no heterogeneity existed. The goodness of fit indices in confirmatory factor analysis showed acceptable values: $\chi^2/df = 2.112$, RMSEA = 0.061, GFI = 0.953, CFI = 0.947, TLI = 0.969, and NFI = 0.917. These results suggest that the desired model and its constituent concepts are acceptable and confirmed by five dimensions in clinical nurses.

In the study, the internal consistency of the Nurse Manager Competency Scale was evaluated using Cronbach's alpha coefficient (α). A value greater than 0.7 was considered acceptable [27], and the overall Cronbach's alpha was 0.98. The five dimensions of the scale varied between 0.92 and 0.98. To assess the test-retest reliability of the questionnaire, data were collected from 30 clinical nurses over a two-week period, and the Intraclass Correlation Coefficient (ICC) was calculated. In this study, the minimum ICC value was considered to be 0.75 [28], and the ICC over two weeks was 0.87. These results suggest that the Nurse Manager Competency Scale is a reliable and valid tool for assessing the perceived nurse manager competence.

Job satisfaction and turnover intention

The study asked participants to rate their job satisfaction and intention to leave their current workplace using a 5-point Likert scale. The scale ranged from 1 (most dissatisfied/least intended to leave) to 5 (most satisfied/most intended to leave). A higher score on the job satisfaction measure indicated a higher level of job satisfaction, and vice versa. It was postulated that job satisfaction positively relates to perceived nurse manager competence. On the other hand, a higher score on the turnover intention measure indicated a higher level of intention to leave the current workplace, and vice versa. It was postulated that turnover intention is negatively related to the nurse manager competencies.

Data analysis

The researchers used IBM SPSS Statistics for Windows, version 26.0 (IBM Corp., Armonk, NY, USA) to analyze the data in the study. They used descriptive statistics (frequency, percentage, mean, and standard deviation) to summarize demographic and work-related data, perceived nurse manager competencies, and nurse outcome variables (job satisfaction and turnover intention). Pearson's correlation coefficient was used to investigate the relationship between perceived nurse manager competence, job satisfaction, and turnover intention. Before performing the statistical tests, the normality of the data distribution was checked using the Kolmogorov-Smirnov one-sample test [29]. Multiple linear regression analysis were conducted to examine the predictors of job satisfaction and turnover intention while the demographic characteristics of the participants were controlled. Before using multiple linear regression, we checked for multicollinearity using the variance inflation factor (VIF) and tolerance. Generally, if the tolerance value is less than 0.1 and the VIF value is greater than five, it indicates an issue with multicollinearity. None of the variables in this study exhibited significant multicollinearity based on these measures [30]. Confirmatory factor analysis was performed using AMOS software, version 24.0 (IBM Corp., Armonk, NY, USA). The significance level for statistical analysis was $p < 0.05$.

Ethical considerations

The Research Ethics Committee of Ardabil University of Medical Sciences has approved this study proposal with the ethics code IR.ARUMS.REC.1402.063. Before participating, participants were informed about the study's objectives and methods, and written informed consent was obtained from them. We want to highlight that the Declaration of Helsinki, an internationally recognized set of ethical principles, guided all procedures. Participation in this study was voluntary, and participants were told that they could withdraw from the study at any stage.

Table 1 Demographic characteristics of the participants ($n = 354$)

Variable	Categories	Mean \pm SD	Percentage	No.
Age (year)		31.36 \pm 4.03		
Working experience (year)		8.09 \pm 4.04		
Gender	Male	52.5		186
	Female	47.5		168
Education level	Bachelor's degree	85.0		301
	Master's degree	15.0		53
Marital status	Single	50.6		179
	Married	49.4		175
Unit	Medical	30.6		130
	Surgical	20.3		72
	Emergency	7.1		25
	ICU	13.6		48
	Pediatric	11.9		42
	Other	10.5		37

Table 2 The level of nurse manager competencies, job satisfaction and turnover intention ($n = 354$)

Variable	Subscales	Mean	SD
Nurse manager competencies	Staff advocacy and development	3.07	1.23
	Team communication and collaboration	3.08	1.29
	Change and resource management	3.09	1.32
	Quality monitoring and pursuance	3.03	1.28
	Personal mastery	3.02	1.23
	Total	3.06	1.24
Job satisfaction		3.05	1.57
Turnover intention		2.82	1.44

We implemented strict data management protocols to protect personal information, including email addresses. Email addresses were collected solely for survey communication and stored securely. Access to this information was limited to authorized personnel only, and all data was anonymized to prevent identification of participants. Ethical considerations, such as confidentiality, anonymity, and information privacy, were strictly observed throughout the study.

Results

In total, 354 nurses participated in this study, of whom more than half were male ($n = 186$, 52.5%). The participants' mean (SD) age was 31.36 (4.03) years. Almost half of the participants were single ($n = 179$, 50.6%), and most had a bachelor's degree ($n = 301$, 85.0%). The demographic characteristics of the participants in this study are summarized in Table 1.

The mean scores of perceived nurse manager competence, job satisfaction, and turnover intention are presented in Table 2. The participants' average (SD) perceived nurse manager competence score was 3.06 (1.24) out of 5. Among the five dimensions, Change and

resource management scored the highest at 3.09 (1.32), and Personal mastery scored the lowest at 3.02 (1.23). Additionally, the mean (SD) job satisfaction was 3.05 (1.57) out of 5, and turnover intention was 2.82 (1.44) out of 5. Approximately one-fourth of the participants ($n=91$, 25.7%) were satisfied with their current job, while less than half were dissatisfied with their current job ($n=170$, 48.0%) and intended to leave their current job ($n=165$, 46.9%).

A Pearson correlation coefficient was calculated to examine the relationship between The mean scores of perceived nurse manager competence, job satisfaction, and turnover intention are presented in Table 2. The participants' average (SD) perceived nurse manager competence score was 3.06 (1.24) out of 5. Among the five dimensions, Change and resource management scored the highest at 3.09 (1.32), and Personal mastery scored the lowest at 3.02 (1.23). Additionally, the mean (SD) job satisfaction was 3.05 (1.57) out of 5, and turnover intention was 2.82 (1.44) out of 5. Approximately one-fourth of the participants ($n=91$, 25.7%) were satisfied with their current job, while less than half were dissatisfied with their current job ($n=170$, 48.0%) and intended to leave their current job ($n=165$, 46.9%).

, job satisfaction, and turnover intention. The results indicated a significant positive relationship between job satisfaction and perceived nurse manager competence ($r=0.933$, $p<0.001$) and its dimensions. Additionally, there was a significant negative correlation between turnover intention and nurse manager competencies ($r = -0.901$, $p<0.001$) and its dimensions. As a result, the research findings led to the confirmation of the research hypothesis. It is worth mentioning that the power of the evaluated relationships was above 0.6, indicating a strong relationship between perceived nurse manager competence, job satisfaction, and turnover intention. The correlation between perceived nurse manager competence, job satisfaction, and turnover intention is shown in the correlation matrix (Table 3).

We used multiple linear regression to explain the impact of perceived nurse manager competence on job satisfaction and turnover intention. The results showed

that job satisfaction is determined by all dimensions of perceived nurse manager competence, except for "Team communication and collaboration" ($F=217.940$, $p<0.001$), and turnover intention is determined by all dimensions of perceived nurse manager competence, except for "Team communication and collaboration" ($F=140.037$, $p<0.001$). Regression coefficients (B) showed that job satisfaction increases by 0.014 to 0.036 units for one-unit increase in each dimension of nursing managers' competencies. In contrast, the intention to leave the service decreases by 0.007 to 0.022 units. These results showed that nursing managers' competencies play an important role in increasing job satisfaction and reducing nurses' intention to leave the service. The dimensions of perceived nurse manager competence predicted 87.3% and 81.3% of the variance in job satisfaction and turnover intention, respectively (Table 4).

Discussion

The role of nursing in providing high-quality patient care is crucial. It's essential to understand the factors that affect job satisfaction and turnover intention among nurses, especially in areas facing staff shortages. Nursing manager competencies are vital for coordinating medical activities and meeting patient needs [31]. A study examined the relationship between nursing manager competencies, job satisfaction, and nurse turnover in the Ardabil region of Iran. The study found that nurse managers had an average competency score of 3.06 out of 5, indicating a significant potential for improvement. Only 25.7% of nurses reported job satisfaction, while 46.9% expressed intentions to leave their current positions. The study revealed that all perceived nurse manager competence, except "team communication and collaboration," influence job satisfaction. Additionally, turnover intention is affected by all competencies except "team communication and collaboration." The competencies predicted 87.3% of the variance in job satisfaction and 81.3% in turnover intention. The study highlighted the potential for enhancing nursing managers' competencies to improve job satisfaction and reduce turnover, ultimately benefiting patient care and organizational stability.

Table 3 Correlation matrix of perceived nurse manager competence, job satisfaction and turnover intention ($n=354$)

Variable	1	2	3	4	5	6	7	8
1. Staff advocacy and development	1.000							
2. Team communication and collaboration	0.938*	1.000						
3. Change and resource management	0.943*	0.925*	1.000					
4. Quality monitoring and pursuance	0.921*	0.934*	0.907*	1.000				
5. Personal mastery	0.945*	0.935*	0.918*	0.926*	1.000			
6. Perceived nurse manager competence	0.977*	0.978*	0.964*	0.965*	0.973*	1.000		
7. Job satisfaction	0.920*	0.904*	0.904*	0.899*	0.906*	0.933*	1.000	
8. Turnover intention	-0.883*	-0.873*	-0.868*	-0.873*	-0.881*	-0.901*	-0.875*	1.000

*Correlation is significant at the 0.01 level (2-tailed)

Table 4 Linear regression analysis coefficients to examine predictors of job satisfaction and turnover intention (n = 354)

Predictor variables	Job satisfaction		Turnover intention		Collinearity	
	B	p	B	p	Tolerance	VIF
Age	0.002	0.815	-0.012	0.237	0.640	1.562
Working experience	-0.002	0.866	0.015	0.144	0.661	1.513
Gender (Male=0 [†])	-0.066	0.280	0.057	0.395	0.978	1.022
Education level (Bachelor's=0 [†])	0.092	0.282	0.023	0.807	0.984	1.017
Marital status (Single=0 [†])	-0.050	0.416	0.103	0.127	0.976	1.024
Unit (Medical=0 [†])	-0.003	0.857	-0.039	0.052	0.953	1.049
Staff advocacy and development	0.036	<0.001	-0.022	0.013	0.163	4.872
Team communication and collaboration	0.009	0.090	-0.007	0.227	0.177	4.899
Change and resource management	0.021	0.004	-0.007	0.027	0.194	4.902
Quality monitoring and pursuance	0.021	0.002	-0.018	0.001	0.119	4.897
Personal mastery	0.014	0.048	-0.021	0.009	0.179	4.952
Model characteristics	R=0.935, R ² =0.874, F=217.940		R=0.905, R ² =0.818, F=140.037			

VIF, Variance inflation factor

[†]Reference groups

The findings of our study revealed that the average competency score of nurse managers among participants was 3.06 out of 5. In comparison, Choi’s study showed an overall perceived nurse manager competence level of 3.15 out of 5 [6]. In our research, Change and resource management received the highest score (3.09), while Personal mastery received the lowest score (3.02). In Choi et al.’s study, “Quality Monitoring and Pursuance” received the highest score with an average of 3.20, while “Team Communication and Collaboration” scored the lowest with an average of 3.05 [6]. Therefore, our study suggests that perceived nurse manager competence is relatively lower than Choi’s study’s findings. It is important to allocate more effort to develop and enhance these competencies. Additionally, change and resource management are crucial in developing the abilities of nurse managers. This emphasizes the substantial importance of implementing effective change and resource management strategies to improve the skills and capabilities of nurse managers in the ever-changing healthcare environment.

In our research, about 25.7% of the participants expressed satisfaction with their current job. In a study by Choi et al., more than a third of the respondents stated they were satisfied with their current job. It’s worth noting that Choi et al.’s study was conducted during the COVID-19 pandemic [6]. According to the study by Smith et al., the majority of nurses reported average (1.38%) or high (9.27%) job satisfaction [32]. The results of the systematic review study by Dilig-Ruiz et al. indicated that the average job satisfaction score for nurses across all studies was 56%, showing fluctuations over time [33]. Previous research also suggests that job satisfaction has decreased in developing countries [34, 35]. Due to the impact of different job aspects on nurses’ job satisfaction and the variation of these dimensions in other countries, cities, and hospitals, differences in job satisfaction scores

are also expected and explainable. These differences may be attributed to dissimilar working conditions and professional status in research environments.

Based on our study results, less than half of the participants were considering leaving their current job (46.9%). Choi’s study findings showed that one-third of respondents are thinking about leaving their current workplace. The prevalence of combined turnover intention rates for Asia, North America, and Europe were 20%, 15%, and 7% [36]. In Maaitah’s study, nurses had a strong inclination to leave. This may be due to multiple factors affecting the work environment and workload, contributing to high turnover intentions [37]. The most common reasons for job turnover are poor management, low wages, and insufficient staff [38]. The lack of necessary competencies for nursing managers may reduce job satisfaction and increase turnover intentions among nursing staff, potentially leading to decreased quality of care and patient satisfaction and threatening patient health outcomes [39].

In our research, we discovered that nursing managers possessing high competencies in “change and resource management” have a positive impact on nursing job satisfaction and turnover intention. This is achieved through effective change management, optimal resource allocation, budget management, prioritizing employee needs, and enhancing quality improvement initiatives. In today’s healthcare systems, challenges such as bed shortages, staff shortages, and equipment shortages are common. To tackle these challenges, nursing managers have worked together to create and implement new care systems and protocols. These are specifically designed to deal with the issues that nursing team encounter. These systems improve patient care overall and ensure that patients and healthcare professionals are well taken care of [40]. Nursing managers have a crucial role in ensuring high-quality patient care by embracing new tools, staying

updated on healthcare advancements, and addressing patients' evolving needs while optimizing the organizational framework [31]. Recent studies have reported that the daily work of nursing managers often involves organizing, planning work, and managing resources [2, 41]. It should be noted that the decision of the nurse manager to allocate resources to nursing processes, along with staff training and orientation, may reduce resources for nursing at the bedside and, therefore, may impact nursing staff [2]. Organizational factors such as staff adequacy can increase nurse job satisfaction [7]. The effective interventions identified in the Niskala study were the first step in developing human resource strategies for healthcare organizations. These findings suggest that external factors (such as pay and rewards) are less effective than internal factors (such as spiritual intelligence, professional identity, and awareness) in maintaining job satisfaction [42]. Improving management decisions and increasing human resources in crisis conditions can impact nurses' performance and job satisfaction [43]. Nurse managers can increase job satisfaction by demonstrating practical change and resource management competencies, ensuring adequate staffing, and making sound management decisions.

Our findings indicate that the quality monitoring and pursuit competencies of nurse managers positively impact nurses' job satisfaction and intention to leave their jobs. Competent nurse managers play a crucial role in upholding high care standards, fostering a supportive environment, and acknowledging the efforts of staff to reduce turnover. Quality management also helps lighten nurses' workloads and optimize resource allocation, ultimately leading to increased satisfaction. Effective management is essential for ensuring that patients receive care that is effective, efficient, and of high quality [31]. Leading quality improvement in the complex daily environment of a healthcare organization poses a challenge for nursing managers [44]. The day-to-day responsibilities of nursing managers involve caring for patients and overseeing the quality of care, which can be viewed as entirely logical [45]. Nursing managers can influence the quality of care by ensuring adequate staff [45, 46]. Nursing management fosters commitment, coherence, consistency, and direction in service provision. Strategic leadership aligns the skills of nursing staff with healthcare goals, empowers nurses to deliver high-quality care, and ensures adherence to quality and safety standards [31]. To enhance the quality of care and cultivate a culture of quality in the nursing sector, nursing managers should strive to encourage staff to improve efficiency and comprehensiveness in achieving nursing goals and objectives. By implementing these approaches, nursing managers can elevate the quality of care and establish

a quality culture, leading to further development and achievements in the nursing unit.

The results show that supportive nursing managers significantly impact job satisfaction and retention among nurses. They create a positive work environment, offer professional development, communicate effectively, and promote work-life balance as a priority, which reduces turnover rates and boosts morale. This support leads to increased job satisfaction and lower intention to leave among nurses [6]. Therefore, managerial support is crucial in predicting job satisfaction and turnover intention [47]. Smokrović et al. found that of all the factors in the practice environment scales of the nursing work index (PES-NWI), only nurse manager ability, leadership, and nurse support reliably predict nurse job satisfaction. The nursing management structure refers to nurses' abilities, leadership, and support, as well as the ability of nurse leaders to manage and lead nursing managers effectively, support other nurses, and involve them in decision-making [48]. Nursing managers play a crucial role in creating a healthy work environment for nurses by fostering a positive culture and ensuring effective communication, high-quality nursing care, and teamwork. They are responsible for providing guidance and support to nursing staff, promoting a safe and supportive space that values open communication, collaboration, and mutual respect [49–51]. Previous research has shown that managerial support can help reduce employees' intention to leave their jobs [52]. Tuckett et al. study introduced nurses' rights and administrative support as essential predictors of intention to leave their jobs. It stated that a lack of managerial support can impact turnover intention among healthcare staff [53]. Nursing managers play a crucial role in providing vital support to their staff. By ensuring the job satisfaction of their team, they significantly increase the likelihood of retaining talented professionals in the nursing profession [54].

Our study highlights the paramount importance of personal mastery in nursing managers, a skill that is a strong predictor of job satisfaction and turnover intention. Managers with high personal mastery are adept at managing stress and challenges, thereby fostering a stable work environment that bolsters job satisfaction among their staff. Effective communication and conflict resolution are crucial to building trust and positive relationships within the team, thereby increasing job satisfaction and reducing turnover intention. It is imperative for nursing managers to create a supportive workplace and communicate effectively to motivate their team, thereby leading to higher job satisfaction and reduced intention to leave the job [55]. The journey to becoming a nurse manager begins with developing an awareness of the role, knowledge, and fundamental theories of healthcare management. The index serves as a roadmap for the managerial position,

guiding future nurse managers in their next management role [39]. Previous studies have underscored the importance of nurse managers in upholding the quality of care, including their ability to demonstrate personal mastery, address potential issues, and build trust, calmness, and control [56, 57]. Nurse managers play a crucial role in improving nursing services by demonstrating their structural capacity through results management [58]. Furthermore, nurse managers should be proficient in critical thinking, team management, conflict resolution, and collaborative decision-making to enhance pre-action nursing thinking [59].

Limitations

Our research is dedicated to exploring the significant role of nursing managers' competencies in creating a positive work environment for nurses in Iran. This focus is crucial as it directly affects this group's job satisfaction and turnover intentions. However, it's essential to recognize the limitations of the study. For example, our research's geographical scope may restrict our findings' applicability to specific segments of the population. Additionally, while innovative, using WhatsApp for data collection may limit the representation of certain nurses, especially those who are less tech-savvy. Furthermore, the cross-sectional nature of the study design makes it challenging to establish a causal relationship between nursing managers' competencies and job satisfaction or turnover intentions. Due to the specific characteristics of the participating hospitals, there is also a potential for selection bias, which may influence the nurses' responses and perceptions. This bias could be due to [specific reasons for potential bias in the participating hospitals]. These limitations underscore the need for further research and development in this area.

Furthermore, relying on the same individuals to evaluate nursing managers' competencies, job satisfaction, and turnover intentions may lead to bias. Participants' subjective views, influenced by their experiences, could distort the results. While using nurses' assessments to gauge nurse managers' competencies provides direct perceptions, it may need to capture their objective competencies fully. Future research would benefit from a multi-method approach, such as performance evaluations or peer assessments, to enhance the validity of the findings. Moreover, additional research is needed to explore other variables affecting perceived competency levels, job satisfaction, and turnover. Variables such as leadership styles, organizational culture, career development opportunities, work-life balance strategies, employee recognition programs, job security measures, and competitive salary and benefits packages warrant further investigation to gain insights into the complex dynamics of nursing management and job satisfaction.

Conclusion

The research findings indicate that nursing managers in Iran have lower competencies than in previous studies. It is essential to strengthen these competencies as they significantly improve job satisfaction and reduce nurse turnover intentions. Effective leadership, mainly, plays a crucial role in this process. Managers who effectively support staff, manage resources, and demonstrate strong leadership not only positively impact nurses' job satisfaction and retention but also have the power to inspire and motivate their teams. To enhance nurse job satisfaction and reduce turnover rates, healthcare organizations should conduct unit-level assessments to identify areas for improvement. Promoting professional development, recognizing staff efforts, and creating supportive work environments are essential. In conclusion, enhancing nursing managers' competencies and prioritizing job satisfaction is crucial for retaining a qualified nursing workforce and improving healthcare quality. These findings provide valuable insights into effective nursing management practices.

Abbreviations

CVR	Content Validity Ratio
CVI	Content Validity Index
RMSEA	Root Mean Square Error of Approximation
CFA	Confirmatory Factor Analysis
GFI	Goodness of Fit Index
CFI	Comparative Fit Index
TLI	Tucker-Lewis Index
TLI	Tucker-Lewis Index
IFI	Incremental Fit Index
ICC	Intraclass Correlation Coefficient

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Author contributions

All the authors were involved in designing the study. MJJ carried out the data collection and data entry, AM performed the statistical analyses and interpretations, RI and RYS wrote the revised version, which was reviewed and edited, and RNV wrote the final report and manuscript. All the authors read and approved the final manuscript.

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Data availability

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

The Ethics Committee of Ardabil University of Medical Sciences has approved this study proposal with ethics code IR.ARUMS.REC.1402.063. Before participation, participants were informed about the study's objectives and methods, and written informed consent was obtained from them. All procedures were performed following the Declaration of Helsinki.

Participation in this study was voluntary, and participants were informed that they could withdraw from the study at any stage. Ethical considerations, such as confidentiality, anonymity, and information privacy, were strictly observed during the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Students Research Committee, School of Nursing and Midwifery, Ardabil University of Medical Sciences, Ardabil, Iran

²Department of Emergency Nursing, School of Nursing and Midwifery, Ardabil University of Medical Sciences, Ardabil, Iran

³Department of Emergency Medicine, School of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

⁴Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Ardabil University of Medical Sciences, Ardabil, Iran

⁵Student Research Committee, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran

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References

- Roche MA, Duffield C, Dimitrelis S, Frew B. Leadership skills for nursing unit managers to decrease intention to leave. *Nursing: Res Reviews* 2015;57–64.
- Nurmeksela A, Mikkonen S, Kinnunen J, Kvist T. Relationships between nurse managers' work activities, nurses' job satisfaction, patient satisfaction, and medication errors at the unit level: a correlational study. *BMC Health Serv Res.* 2021;21:1–13.
- Akbiyik A, Korhan EA, Kiray S, Kirsan M. The effect of nurses' Leadership Behavior on the quality of nursing care and patient outcomes. *Creat Nurs.* 2020;26(1):8–18.
- Ngabonzima A, Asingizwe D, Kouveliotis K. Influence of nurse and midwife managerial leadership styles on job satisfaction, intention to stay, and services provision in selected hospitals of Rwanda. *BMC Nurs.* 2020;19:1–11.
- Schwendimann R, Dhaini S, Ausserhofer D, Engberg S, Zúñiga F. Factors associated with high job satisfaction among care workers in Swiss nursing homes—a cross sectional survey study. *BMC Nurs.* 2016;15:1–10.
- Choi P-P, Lee W-M, Wong S-S, Tiu M-H. Competencies of nurse managers as predictors of staff nurses' job satisfaction and turnover intention. *Int J Environ Res Public Health.* 2022;19(18):11461.
- Cummings GG, Tate K, Lee S, Wong CA, Paananen T, Micaroni SP, Chatterjee GE. Leadership styles and outcome patterns for the nursing workforce and work environment: a systematic review. *Int J Nurs Stud.* 2018;85:19–60.
- Akhtary Shojaei E, Nazari A, Vahidi R. Leadership styles of managers and job satisfaction among nurses in Tabriz hospitals. *Hakim Res J.* 2005;7(4):20–4.
- Labrague LJ, Gloe D, McEnroe DM, Konstantinos K, Colet P. Factors influencing turnover intention among registered nurses in Samar Philippines. *Appl Nurs Res.* 2018;39:200–6.
- Labrague L, De Los Santos J, Falguera C, Nwafor C, Galabay J, Rosales R, Firmo C. Predictors of nurses' turnover intention at one and five years' time. *Int Nurs Rev.* 2020;67(2):191–8.
- Al Sabei SD, Al-Rawafah O, AbuAlRub R, Labrague LJ, Burney IA. Nurses' job burnout and its association with work environment, empowerment and psychological stress during COVID-19 pandemic. *Int J Nurs Pract.* 2022;28(5):e13077.
- Gurková E, Mikšová Z, Šátěková L. Missed nursing care in hospital environments during the COVID-19 pandemic. *Int Nurs Rev.* 2022;69(2):175–84.
- AL-Ghwayr AA, AL-Weidat IA, Al-Qudimat AR, Abu Shosha GM, Khalifeh AH, ALBashtawy M. The impact of work environment on structural empowerment among nurses in Governmental hospitals. *Nurs Rep.* 2024;14(1):482–93.
- Taylor-Clark TM, Swiger PA, Anusiewicz CV, Loan LA, Olds DM, Breckenridge-Sproat ST, Raju D, Patrician PA. Identifying potentially preventable reasons nurses intend to leave a job. *JONA: J Nurs Adm.* 2022;52(2):73–80.
- Mohamed Z, Al-Hmamat N. The effectiveness of nurse residency programs on new graduate nurses' retention: systematic review. *Heliyon.* 2024;10(5):e26272.
- Kaihlanen A-M, Elovainio M, Haavisto E, Salminen L, Sinervo T. Final clinical practicum, transition experience and turnover intentions among newly graduated nurses: a cross sectional study. *Nurse Educ Today.* 2020;84:104245.
- Boamah SA, Laschinger HKS, Wong C, Clarke S. Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nurs Outlook.* 2018;66(2):180–9.
- Ofei AMA, Poku CA, Paarima Y, Barnes T, Kwashie AA. Toxic leadership behaviour of nurse managers and turnover intentions: the mediating role of job satisfaction. *BMC Nurs.* 2023;22(1):374.
- Brewer CS, Kovner CT, Djukic M, Fatehi F, Greene W, Chacko TP, Yang Y. Impact of transformational leadership on nurse work outcomes. *J Adv Nurs.* 2016;72(11):2879–93.
- García-Sierra R, Fernández-Castro J. Relationships between leadership, structural empowerment, and engagement in nurses. *J Adv Nurs.* 2018;74(12):2809–19.
- Lievens I, Vlerick P. Transformational leadership and safety performance among nurses: the mediating role of knowledge-related job characteristics. *J Adv Nurs.* 2014;70(3):651–61.
- Masood M, Afsar B. Transformational leadership and innovative work behavior among nursing staff. *Nurs Inq.* 2017;24(4):e12188.
- Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, Initiative S. The strengthening of reporting of Observational studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *Int J Surg.* 2014;12(12):1495–9.
- Anderson JC, Gerbing DW. The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika.* 1984;49:155–73.
- Byrne BM. *Structural equation modeling with Mplus: basic concepts, applications, and programming.* routledge; 2013.
- Floyd FJ, Widaman KF. Factor analysis in the development and refinement of clinical assessment instruments. *Psychol Assess.* 1995;7(3):286.
- DeVellis RF, Thorpe CT. *Scale development: theory and applications.* Sage; 2021.
- Koo TK, Li MY. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *J Chiropr Med.* 2016;15(2):155–63.
- Das KR, Imon A. A brief review of tests for normality. *Am J Theoretical Appl Stat.* 2016;5(1):5–12.
- Draper NR, Smith H. *Applied regression analysis.* Volume 326. Wiley; 1998.
- Ofei AMA, Barnes T, Paarima Y. *Strategic Leadership in nursing.* Nursing: New insights for Clinical Care. edn.: IntechOpen; 2022.
- Smith S, Lapkin S, Halcomb E, Sim J. Job satisfaction among small rural hospital nurses: a cross-sectional study. *J Nurs Scholarsh.* 2023;55(1):378–87.
- Dilig-Ruiz A, MacDonald I, Demery Varin M, Vandyk A, Graham ID, Squires JE. Job satisfaction among critical care nurses: a systematic review. *Int J Nurs Stud.* 2018;88:123–34.
- Akbari M, Bagheri A, Fathollahi A, Darvish M. Job satisfaction among nurses in Iran: does gender matter? *J Multidisciplinary Healthc* 2020;71–8.
- Huaman N, Morales-García WC, Castillo-Blanco R, Saintila J, Huancahuire-Vega S, Morales-García SB, Calizaya-Milla YE, Palacios-Fonseca A. An explanatory model of work-family conflict and resilience as predictors of job satisfaction in nurses: the mediating role of work engagement and communication skills. *J Prim care Community Health.* 2023;14:21501319231151380.
- Wu F, Lao Y, Feng Y, Zhu J, Zhang Y, Li L. Worldwide prevalence and associated factors of nursing staff turnover: a systematic review and meta-analysis. *Nurs Open.* 2024;11(1):e2097.
- Maaitah AM. The role of leadership style on turnover intention. *Int Rev Manage Mark.* 2018;8(5):24.
- Magbity J, Ofei A, Wilson D. Leadership styles of nurse managers and turnover intention. *Hosp Top.* 2020;98(2):45–50.
- Xu X, Zhang Y, Zhou P, Lin Y, Pan W. A modified Delphi study on establishing a curriculum content structure for the leadership and management competency cultivation for future nurse managers in China. *Heliyon* 2022, 8(12).
- Yu X, Li M, Du M, Wang Y, Liu Y, Wang H. Exploring factors that affect nurse staffing: a descriptive qualitative study from nurse managers' perspective. *BMC Nurs.* 2024;23(1):80.
- Warshawsky N, Cramer E. Describing nurse manager role preparation and competency: findings from a national study. *JONA: J Nurs Adm.* 2019;49(5):249–55.

42. Niskala J, Kanste O, Tomietto M, Miettunen J, Tuomikoski AM, Kyngäs H, Mikkonen K. Interventions to improve nurses' job satisfaction: a systematic review and meta-analysis. *J Adv Nurs*. 2020;76(7):1498–508.
43. Fereidouni A, Teymoori E, Maleki Z, Ghanavati M, Vizehfar F. Relationships between Job satisfaction of operating Room nurses and Hospital's Compliance with Protective guidelines during the Covid-19 pandemic: a cross-sectional study, Iran. *J Perianesthesia Nurs*. 2023;38(1):51–7.
44. Sjølie BM, Hartviksen TA, Bondas T. Navigation to prioritizing the patient—first-line nurse managers' experiences of participating in a quality improvement collaborative. *BMC Health Serv Res*. 2020;20:1–13.
45. Van Bogaert P, Peremans L, Van Heusden D, Verspuy M, Kureckova V, Van de Cruys Z, Franck E. Predictors of burnout, work engagement and nurse reported job outcomes and quality of care: a mixed method study. *BMC Nurs*. 2017;16:1–14.
46. Arakelian E, Rudolfsson G. Managerial challenges faced by Swedish nurse managers in perioperative settings—a qualitative study. *BMC Nurs*. 2021;20(1):117.
47. Smokrović E, Gusar I, Hnatešen D, Bačkov K, Bajan A, Gvozdanović Z, Placento H, Žvanut B. Influence of work motivation, work environment and job satisfaction on turnover intention of Croatian nurses: a qualitative study. *Southeast Eur Med Journal: SEEMEDJ*. 2019;3(2):33–44.
48. Smokrović E, Kizivat T, Bajan A, Šolić K, Gvozdanović Z, Farčić N, Žvanut B. A conceptual model of nurses' turnover intention. *Int J Environ Res Public Health*. 2022;19(13):8205.
49. Eltaybani S, Yamamoto-Mitani N, Ninomiya A, Igarashi A. The association between nurses' burnout and objective care quality indicators: a cross-sectional survey in long-term care wards. *BMC Nurs*. 2021;20:1–10.
50. Ljungbeck B, Sjögren Forss K. Advanced nurse practitioners in municipal healthcare as a way to meet the growing healthcare needs of the frail elderly: a qualitative interview study with managers, doctors and specialist nurses. *BMC Nurs*. 2017;16:1–9.
51. Lucas P, Jesus É, Almeida S, Araújo B. Relationship of the nursing practice environment with the quality of care and patients' safety in primary health care. *BMC Nurs*. 2023;22(1):413.
52. Ahlstedt C, Eriksson Lindvall C, Holmström IK, Muntlin Å. Flourishing at work: nurses' motivation through daily communication—An ethnographic approach. *Nurs Health Sci*. 2020;22(4):1169–76.
53. Tuckett A, Winters-Chang P, Bogossian F, Wood M. Why nurses are leaving the profession... lack of support from managers: what nurses from an e-cohort study said. *Int J Nurs Pract*. 2015;21(4):359–66.
54. Andrews MC, Woolum A, Mesmer-Magnus J, Viswesvaran C, Deshpande S. Reducing turnover intentions among first-year nurses: the importance of work centrality and coworker support. *Health Serv Manage Res*. 2023;09514848231165891.
55. Asamani JA, Naab F, Ofei AMA. Leadership styles in nursing management: implications for staff outcomes. *J Health Sci*. 2016;6(1):23–36.
56. Zaghini F, Fiorini J, Piredda M, Fida R, Sili A. The relationship between nurse managers' leadership style and patients' perception of the quality of the care provided by nurses: Cross sectional survey. *Int J Nurs Stud*. 2020;101:103446.
57. Van Bogaert P, Peremans L, Franck E, Timmermans O, Havens DS. Nurse managers' perceptions and experiences regarding staff nurse empowerment: a qualitative study. *Front Psychol*. 2015;6:151183.
58. Aqtash S, Alnusair H, Brownie S, Alnjadat R, Fonbuena M, Perinchery S. Evaluation of the impact of an education program on self-reported leadership and management competence among nurse managers. *SAGE Open Nurs*. 2022;8:23779608221106450.
59. González García A, Pinto-Carral A, Sanz Villorojo J, Marqués-Sánchez P. Nurse manager core competencies: a proposal in the Spanish health system. *Int J Environ Res Public Health*. 2020;17(9):3173.

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