Research Article

The Role of Leadership Competence and Organizational Culture in Enhancing Healthcare Service Quality

Hassan Vahedi [1], Samira Rahmani Shivyari [1], Soosan Soltanmohamadi [1], Fatemeh Babakhanian [1, *]

[1] Department of Business Management, Shahrood Branch, Islamic Azad University, Shahrood, Iran

*Corresponding Author: Department of Business Management, Shahrood Branch, Islamic Azad University, Shahrood, Iran. Email: fatemehbabakhanian@gmail.com

Abstract

Background: Hospital culture significantly influences healthcare delivery. Effective teamwork among healthcare professionals, along with strong leadership and management, is crucial for providing high-quality services. This study explores the impact of leadership competence and organizational culture on the quality of healthcare services.

Methods: We employed a rigorous methodology in this cross-sectional analytical study, conducted in 2024 at Velayat Hospital in Damghan. Data were collected from 100 randomly selected nurses using Denison's Organizational Culture Questionnaire, the Standard Leadership Competency Questionnaire based on the Stroud model (2009), and the SERVQUAL scale by Parasuraman et al. (1988). The analysis was conducted using advanced techniques such as structural equation modeling (SEM) and Pearson correlation, facilitated by SPSS 26 and EQS 6.2 software, ensuring the reliability and validity of our findings.

Results: Among the participants, 68% were women. The overall average scores were 115.56 ± 18.8 for organizational culture, 74.84 ± 23.12 for leadership competence, and 194 ± 16.17 for healthcare service quality. A significant positive correlation was found between organizational culture and leadership competence (P < 0.05, r = 0.633). The relationships between healthcare service quality and both organizational culture (r = 0.274, P > 0.05) and leadership competence (r = 0.304, P > 0.05) were positive, suggesting promising potential for future research. The structural equation model demonstrated a reasonably good fit (RMSEA = 0.24).

Conclusions: The findings of this study are significant for healthcare professionals and hospital managers. They emphasize the importance of leadership competence, supported by a strong organizational culture, in enhancing the quality of nursing services. The study also highlights the urgent need to foster leadership skills and cultivate a positive organizational culture, as these factors are essential for improving healthcare outcomes. This call to action should inspire and motivate all stakeholders to work toward creating a more effective and positive healthcare environment.

Keywords: Organizational Culture, Leadership Competence, Healthcare Quality, SERVQUAL, Structural Equations

1. Background

The performance of organizational members and the outcomes they achieve are among the most crucial objectives for organizations seeking to improve and advance in specific working conditions. Factors such as leadership styles and organizational culture significantly influence—and are influenced by—these outcomes (1). Organizational culture defines an organization's behavior, values, traditions, and norms. Business ethics, a set of values that determines the ethicality of an organization, shapes the ethical climate and organizational behaviors. A positive organizational culture can enhance employee performance by fostering a sense of identity and commitment, thus improving organizational stability (2).

Organizational culture boosts performance by strengthening internal employee cohesion and enabling the organization to adapt to external environmental changes. It functions as a cohesive force, holding organizational members together and helping the organization adjust to external changes, ultimately contributing to its survival. Organizational culture represents employees' collective personality, values, and behaviors (3).

In 2016, Johari and Yahya (4) argued that developing a leadership style model and understanding its relationship with organizational culture is vital for

effective management. Aligning the organization's environment with the desired leadership style maximizes leader effectiveness and enhances organizational performance. This principle is especially important in healthcare, where hospitals' unique mission, commitments, and technology require a distinct leadership approach (5).

Organizational culture is essential for successfully implementing changes in healthcare organizations and fostering learning through work practices (6). Due to their mission, commitments, matrix structure, and technology, hospitals possess a distinct culture that influences every aspect of their operations. A deep understanding of organizational culture by hospital managers leads to better leadership during managerial changes, and the success of a hospital's strategies is shaped by its cultural values. Ignoring organizational culture, beliefs, and values can lead to significant challenges and wasted energy in resolving problems that arise from aligning goals with the existing organizational culture (7).

In their research, Sokhnavar and Mosdaghrad emphasized that organizational culture plays a crucial role in hospital productivity, attributing the success or failure of hospital strategies to culture (8). Hospitals are complex, multidisciplinary, bureaucratic organizations that provide public diagnostic, therapeutic, and rehabilitation services. They face high public expectations, demographic changes, diseases, health market fluctuations, advancements in medical science and technology, and changing government regulations, all while dealing with resource shortages. Over the past two decades, health systems in various countries have undergone significant changes. As a result, the World Health Organization has strongly emphasized the need for strong leadership in healthcare organizations, introducing governance and leadership as integral components of the health system's structure (9).

In recent decades, healthcare organizations have been challenged with improving the quality and safety of patient services. The demand for higher service quality comes from various stakeholders, including governments, insurers, healthcare professionals, patients, and their families (10). Optimal service delivery and the improvement of hospital processes are heavily dependent on the leadership style of managers. It is important to note that different leadership styles can significantly impact organizational effectiveness, efficiency, and productivity (11).

Furthermore, the type of culture prevailing in hospitals is crucial. Effective healthcare and medical service delivery to the community largely depend on the teamwork of healthcare professionals and the leadership and management style within these organizations. Therefore, to enhance productivity, improve service quality, and ultimately increase patient satisfaction, special attention must be given to organizational culture as a significant influencing factor (12).

Managers' and employees' beliefs in negative cultural values, such as self-interest, risk aversion, a lack of prioritization of patients, and acceptance of low standards, ultimately lead to significant scandals for hospitals (13). Health system policymakers, aware of these factors, create appropriate structures and cultures and implement competent leadership in healthcare organizations. They also provide training courses to ensure quality service delivery in the country's hospitals.

2. Objectives

Thus, this research aimed to examine the impact of leadership competence, considering the role of organizational culture, on improving the quality of healthcare services at Damghan Provincial Velayat Hospital.

3. Methods

3.1. Study Design

This cross-sectional study aimed to examine the impact of leadership competence, considering the role of organizational culture, on improving the quality of healthcare services in 2024. The study population consisted of all nurses working at Damghan Provincial Velayat Hospital, totaling 130 individuals. Sampling was done randomly using the Morgan table, considering a 95% confidence level, a 5% estimation error, and a maximum variance of approximately 100 individuals.

3.2. Inclusion Criteria

A minimum of one year of nursing experience. Those with less than one year of experience were excluded from the study.

3.3. Data Collection Tools

Data for this study were collected using questionnaires. The researchers distributed the questionnaires among the nurses at Damghan Provincial Velayat Hospital and gathered their responses. The data collection included: Demographic Information Questionnaire: Age, gender, and education;

Denison organizational culture survey (14): This questionnaire consists of 36 items and covers the following dimensions:

Involvement: Empowerment, team orientation, and capability development.

Consistency: Core values, agreement, coordination, and integration.

Adaptability: Creating change, customer focus, and organizational learning.

Mission: Strategic direction, goals and objectives, and vision.

The questionnaire uses a Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree). Mohammad Bagher and Bonyadi confirmed the reliability of this questionnaire in 2023, with a Cronbach's alpha of 0.8 (15). In the present study, face validity was confirmed by six management experts, and reliability was achieved with a Cronbach's alpha of 0.92.

Leadership Competence Questionnaire by Stroud (16): This standardized questionnaire consists of 25 closed-ended questions using a five-point Likert Scale. The dimensions assessed include integrity, strategic thinking, organizational development, collaboration, and self-awareness. The reliability coefficients, calculated using Cronbach's alpha, were as follows: Integrity (0.978), strategic thinking (0.938), organizational development (0.895), collaboration (0.896), and self-awareness (0.969). In the present study, face validity was confirmed by six management experts, and reliability was achieved with a Cronbach's alpha of 0.97.

SERVQUAL Service Quality Scale by Parasuraman et al. (17): This standardized questionnaire, initially comprising 44 items, was adjusted to 38 items for this study to measure service quality. The Likert scale ranges from 1 (Strongly disagree) to 7 (Strongly agree), with items 10, 11, 12, 13, 18, 19, 20, 21, and 22 being reverse scored. The questionnaire includes two factors: perceptions and expectations. In this study, face validity was confirmed by five health experts, and reliability was achieved with a Cronbach's alpha of 0.76.

3.4. Data Analysis

Data analysis was conducted using descriptive statistics (frequency and percentage) and the Kolmogorov-Smirnov test in SPSS version 26 and EQS version 6.2.

3.5. Study Design

This cross-sectional study was conducted at Damghan Provincial Velayat Hospital in 2024, following the receipt of ethical approval from the Ethics Committee of the Islamic Azad University of Shahroud (ethics code: IR.IAU.SHAHROOD.REC.1402.066) on January 10, 2024. Questionnaires were completed with full confidentiality, and informed consent was obtained from all participants.

4. Results

The results of this study showed that out of 100 nurses, 68 were female (68%) and 32 were male (32%). Of these, 42 nurses (42%) were under 30 years old, and 58 nurses (58%) were over 30 years old. Additionally, 59 nurses (59%) held a bachelor's degree, while 41 nurses (41%) had a master's degree or higher.

Table 1 shows the mean, standard deviation, minimum, and maximum scores for the organizational culture, leadership competence, and service quality variables. Based on the results in Table 1, organizational culture, leadership competence, and service quality among the research sample are generally in the average to high range, as indicated by the mean, minimum, and maximum values.

Table 2 presents the correlation results between organizational culture, leadership competence, and service quality variables using the Pearson correlation coefficient, considering statistical assumptions (normality). The correlation coefficients in Table 2 reveal a significant and positive correlation between organizational culture and leadership competence ($P < 0.05$). Additionally, there is a positive correlation between service quality and both organizational culture and leadership competence (since the correlation coefficient is between ± 1). However, this relationship is not significant ($P > 0.05$) and cannot be generalized to the entire population; it applies only to a portion of the sample.

Furthermore, the research model was examined using the structural equation modeling (SEM) approach. Various tests and indices for evaluating structural equation models, known as fit indices, are shown in Table 3.

Model fit refers to how well a theoretical or conceptual model aligns with the observed data from the population. To evaluate the adequacy of the model fit, the following indices were examined:

Chi-square/df (χ^2/df): This index considers the number of free parameters in calculating the fit. Acceptable values typically range from 1 to 3, indicating a good fit. In this study, the χ^2/df value was 6.5, suggesting a moderate relative fit.

Table 1. Descriptive Findings of Variables of Organizational Culture, Leadership Competence, and Service Quality (N = 100)

Scales and Subscales	Mean ± SD	Minimum - Maximum
Leadership competence	74.84 ± 23.12	29 - 105
Integrity	18.16 ± 6.16	8 - 28
Strategic thinking	15.56 ± 4.71	6 - 22
Organizational development	11.64 ± 3.91	4 - 17
Collaboration	11.84 ± 4.03	4 - 19
Self-awareness	17.64 ± 5.24	10 - 25
Organizational culture	115.56 ± 18.18	80 - 151
Involvement	28.03 ± 5.07	18 - 38
Consistency	28.59 ± 4.45	20 - 37
Adaptability	28.4 ± 5.88	11 - 38
Mission	30.56 ± 6.01	14 - 41
Service quality	194 ± 16.76	162 - 229
Expectations	117.84 ± 11.77	99 - 137
Perceptions	76.16 ± 12.65	50 - 102

Table 2. Correlation of Organizational Culture, Leadership Competence, and Service Quality Variables [a]

Variables	Organizational Culture	Leadership Competence	Service Quality
Organizational culture	1		
Leadership competence	0.633	1	
Service quality	0.274	0.0304	1

[a] Pearson correlation coefficient; P < 0.01.

Root mean square error of approximation (RMSEA): This index reports the error of approximation in the population and is expressed as a decimal. Acceptable values are below 0.08, while values above 0.1 indicate a moderate to poor fit. The RMSEA value for this model was 0.236, suggesting a nearly moderate fit.

Comparative Fit Index (CFI): This index compares the improvement of the proposed model against a baseline model with no relationships among variables. Values greater than 0.9 are considered acceptable. In this model, the CFI was 0.799, indicating a nearly moderate fit.

Goodness of Fit Index (GFI): This index measures the proportion of variance explained by the model, ranging from 0 to 1. Values greater than 0.9 are deemed acceptable. The GFI for this model was 0.725, indicating a nearly moderate fit.

Standardized root mean square residual (SRMR): This index evaluates the average of the standardized residuals. Lower values, ideally closer to zero, reflect a better fit (19). For this model, the SRMR was 0.166, indicating a nearly moderate fit.

The findings summarized in Table 3 suggest that the overall model fit is moderate.

P-values were used to evaluate the model's significance. A P-value less than 0.05 indicates that the model is statistically significant at a 95% confidence level. In this model, the P-value = 0.000, confirming the model's significance.
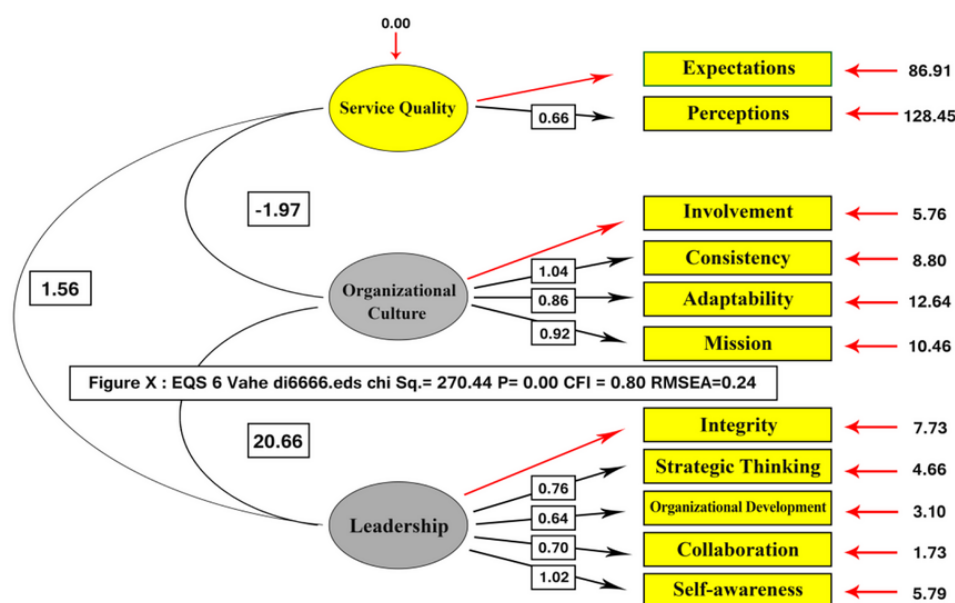
Figures 1 and 2 illustrate the results of the goodness-of-fit indices for the research model in both standardized and significance states. The RMSEA value of 0.24 was employed to assess the model's fit and parsimony. Generally, RMSEA values of 0.05 or less indicate a good fit, while values above 0.1 suggest a moderate to poor fit. Therefore, the findings indicate that the research model has a nearly moderate fit.

5. Discussion

The findings reveal that the average score for organizational culture was 115.56 ± 18.18. According to the questionnaire interpretation, scores between 36 and 63 indicate weak organizational culture, 63 to 90 indicate a moderate level, and scores above 90 reflect an excellent organizational culture. These results suggest

Table 3. Research Model Fit Indices

Index	IFI	CFI	GFI	SRMR	Chi-Square/df	RMSEA	Ideal Value ([18])
Desired Value	> 0.9	> 0.9	> 0.9	< 0.08	1 - 3	< 0.08	
Current Value	0.801	0.799	0.725	0.166	6.5	0.236	

Figure 1. Structural equation model in standardized form

that the nurses exhibit a desirable and robust organizational culture, as supported by the mean and standard deviation values. Similar studies corroborate these findings ([18], [20]).

The average score for leadership competence was 74.84 ± 23.12. Based on the questionnaire, scores between 25 and 58 indicate weak leadership competence, 59 to 91 represent a moderate level, and scores above 91 signify excellent leadership competence. Therefore, considering the mean and standard deviation, nurses demonstrate a desirable and moderate level of leadership competence. This conclusion aligns with findings from a similar study conducted in the social security hospitals of Isfahan province ([21]).

The average score for the quality of healthcare services was 194.00 ± 16.76. Based on the questionnaire interpretation, scores between 38 and 114 indicate poor service quality, scores between 114 and 190 indicate a moderate level, and scores above 190 indicate excellent

service quality. Thus, considering the mean and standard deviation, nurses in this study provide a desirable and robust quality of healthcare services. This finding is consistent with a study on nurses in Tabriz province, which reported similar outcomes regarding service quality ([22]).

The Pearson correlation results indicate a significant and direct relationship between leadership competence and the organizational culture of nurses. A study conducted in Norwegian MipAC units similarly found a strong relationship between team culture and leadership competence, emphasizing the importance of leadership in shaping and sustaining organizational culture ([23]). Changes in transformational and transactional leadership styles are closely tied to shifts in the learning organization culture. For instance, a 2017 study on 176 nurses in a Nigerian hospital reported a clear correlation between organizational culture and the leadership behaviors of nurses ([24]).
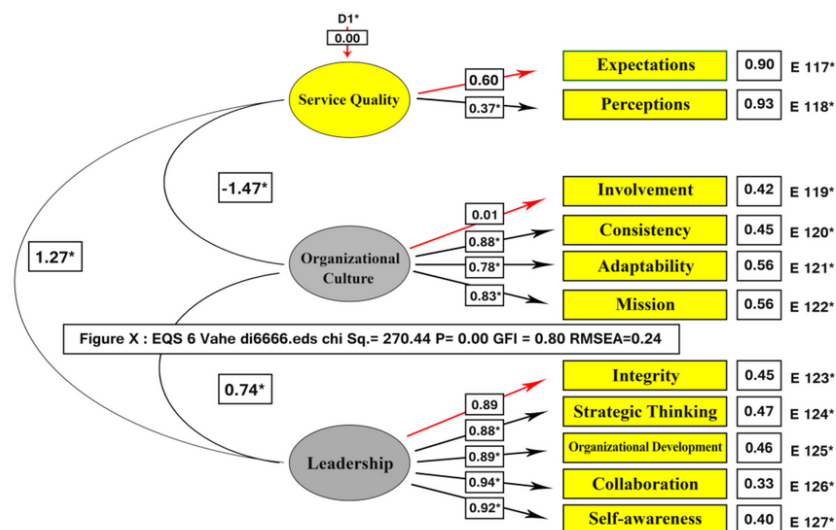
Figure 2. Structural model of the research in significance state

Organizational culture, characterized by shared values, beliefs, and perceptions maintained by employees, is essential for creating a cohesive organizational model. It advances organizational goals by efficiently utilizing resources and fostering a supportive cultural environment, thereby improving performance. Supporting this, a study conducted in Canadian hospitals demonstrated that authentic leadership, combined with a well-developed group-oriented hospital culture, significantly improved healthcare service quality and patient satisfaction (25).

Moreover, a 2022 study in Odisha, India, examining the integration of organizational culture and subcultures to enhance hospital service quality, revealed that cultivating a superior organizational culture positively impacted service quality and maximized patient satisfaction across three major regions (26).

According to Pearson's correlation, there was a positive but non-significant relationship between the quality of healthcare services, organizational culture, and leadership competence among nurses at Damghan Provincial Velayat Hospital. This finding suggests that while these factors are interrelated, their direct impact on service quality may be less pronounced in this specific context. Organizational culture is a complex construct, and achieving fundamental organizational success requires all personnel to understand and align with both the core operational culture and the inherent subcultures. At Damghan Provincial Velayat Hospital,

the institutionalized organizational culture among nurses, combined with their high sense of professional responsibility, likely ensures the delivery of quality services regardless of the influence of organizational culture and leadership competence.

To further examine these relationships, SEM was employed to evaluate the impact of leadership competence on the quality of healthcare services, with organizational culture as a mediating variable. The SEM results indicated a moderate model fit, as assessed by the goodness-of-fit indices. The critical RMSEA value of 0.24 reflects a moderate-to-poor fit, suggesting room for improvement in the model's explanatory power. Notably, RMSEA values below 0.05 are indicative of excellent fit, while those exceeding 0.1 typically denote less acceptable models. Despite this, the findings highlight the importance of leadership competence in fostering a work ethic and instilling shared values, norms, and ethics through organizational culture, which in turn shapes employees' work behavior.

Supporting this, a 2022 study conducted on 255 staff members across two hospitals in Madiun, Indonesia, demonstrated that authentic leadership practices significantly influence the development of a positive organizational culture, which subsequently enhances employee work quality (27). These findings align with the premise that leadership competence indirectly contributes to service quality by reinforcing internal organizational values and behaviors.

The present study faced certain limitations, including partial non-cooperation from some nurses at Damghan Provincial Velayat Hospital and a limited sample size, which may have constrained the generalizability of the findings.

Based on the study results, leadership competence can enhance and sustain internal values like organizational culture, which plays a pivotal role in maintaining and improving service quality. Hospital managers are encouraged to prioritize institutionalizing a strong and cohesive organizational culture among staff to ensure consistently high-quality healthcare services.

Acknowledgements

Footnotes

Authors' Contribution: S. R. and S. S. M.: Data collection; F. B. and H. V.: Data analysis; F. B. and H. V.: Writing the final version of the draft. All authors approved the final version of the draft.

Conflict of Interests Statement: The authors reported no conflicts of interest.

Data Availability: The dataset presented in the study is available upon request from the corresponding author during submission or after publication.

Ethical Approval: This study was approved by the Ethics Committee of the Islamic Azad University of Shahroud with the ethics code IR.IAU.SHAHROOD.REC.1402.066 .

Funding/Support: This study was supported by the Islamic Azad University of Shahroud.

Informed Consent: Informed consent was obtained from the participants.

References

1. Ogbonna E, Harris LC. Leadership style, organizational culture and performance: empirical evidence from UK companies. *Int J Hum Resource Management.* 2000;**11**(4):766-88. https://doi.org/10.1080/09585190050075114.

2. Cheung SO, Wong PS, Wu AW. Towards an organizational culture framework in construction. *Int J Project Management.* 2011;**29**(1):33-44. https://doi.org/10.1016/j.ijproman.2010.01.014.

3. Hanum F, Lubis FR. Organizational Culture. *Proceedings of the 2nd Yogyakarta International Conference on Educational Management/Administration and Pedagogy (YICEMAP 2019).* 2020.

4. Johari J, Yahya KK. Job characteristics, work involvement, and job performance of public servants. *Europ J Training Dev.* 2016;**40**(7):554-75. https://doi.org/10.1108/ejtd-07-2015-0051.

5. Little LM, Gooty J, Williams M. The role of leader emotion management in leader–member exchange and follower outcomes. *Leadership Quarterly.* 2016;**27**(1):85-97. https://doi.org/10.1016/j.leaqua.2015.08.007.

6. Johnson A, Nguyen H, Groth M, Wang K, Ng JL. Time to change: a review of organisational culture change in health care organisations. *J Organ Effectiveness: People Performance.* 2016;**3**(3):265-88. https://doi.org/10.1108/joepp-06-2016-0040.

7. Ahmady GA, Nikooravesh A, Mehrpour M. Effect of Organizational Culture on knowledge Management Based on Denison Model. *Procedia-Soc Behav Sci.* 2016;**230**:387-95. https://doi.org/10.1016/j.sbspro.2016.09.049.

8. Sokhanvar M, Mosadeghrad A. [Organizational culture of selected hospitals of Tehran city]. *Hospital.* 2017;**16**(2):46-57. FA.

9. World Health Organization. *Everybody's business--strengthening health systems to improve health outcomes: WHO's framework for action.* Geneva, Switzerland: World Health Organization; 2007. Available from: https://www.who.int/publications/i/item/everybody-s-business---strengthening-health-systems-to-improve-health-outcomes.

10. Jovanovic B. Hospital accreditation as method for assessing quality in health care. *Arch Oncol.* 2005;**13**(3/4):156.

11. Rigii GP. Leadership qualities and service delivery: a critical review of literature. *Saudi J Business Management Stud.* 2017;**2**:643-53.

12. Gunawan H, Betan A, Hanafi A, Yusriadi Y, Bugis M. Implementation of Organizational Culture and Work Discipline to Patient Satisfaction through Quality of Health Services in Indonesia. *Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management.* Singapore. 2021.

13. Krejcie RV, Morgan DW. Determining Sample Size for Research Activities. *Educ Psychol Measurement.* 1970;**30**(3):607-10. https://doi.org/10.1177/001316447003000308.

14. Denison DR, Neale W. Denison organizational culture survey. *Ann Arbor, MI: Aviat.* 1996;**10**.

15. Mohammad Bagheri R, Bonyadi L. [Examining the relationship between organizational culture and kartim and job performance of employees of University. Applied Educational Leadership]. *Sci Publications Management Syst.* 2023;**In press**. FA.

16. Stroud RN. *The relationship between leadership competence and employee engagement [dissertation].* New Jersey, USA: The State University of New Jersey; 2009.

17. Parasuraman A, Zeithaml VA, Berry LL. Servqual: A multiple-item scale for measuring consumer perc. *J Retailing.* 1988;**64**(1):12.

18. Foley BJ, Kee CC, Minick P, Harvey SS, Jennings BM. Characteristics of nurses and hospital work environments that foster satisfaction and clinical expertise. *J Nurs Adm.* 2002;**32**(5):273-82. [PubMed ID: 12021568]. https://doi.org/10.1097/00005110-200205000-00007.

19. Homan AH. [structural equation modeling using laserl softwar]. Tehran, Iran: Position organization; 2014. FA.

20. Liou SR, Cheng CY. Organisational climate, organisational commitment and intention to leave amongst hospital nurses in

Taiwan. *J Clin Nurs*. 2010;**19**(11-12):1635-44. [PubMed ID: 20579203]. https://doi.org/10.1111/j.1365-2702.2009.03080.x.

21. Labrague LJ, Al Sabei S, Al Rawajfah O, AbuAlRub R, Burney I. Authentic leadership and nurses' motivation to engage in leadership roles: The mediating effects of nurse work environment and leadership self-efficacy. *J Nurs Manag*. 2021;**29**(8):2444-52. [PubMed ID: 34369036]. https://doi.org/10.1111/jonm.13448.

22. Ghahramanian A, Rezaei T, Abdullahzadeh F, Sheikhalipour Z, Dianat I. Quality of healthcare services and its relationship with patient safety culture and nurse-physician professional communication. *Health Promot Perspect*. 2017;**7**(3):168-74. [PubMed ID: 28695106]. [PubMed Central ID: PMC5497369]. https://doi.org/10.15171/hpp.2017.30.

23. Vatnoy TK, Dale B, Sundlisaeter Skinner M, Karlsen TI. Associations between nurse managers' leadership styles, team culture and competence planning in Norwegian municipal in-patient acute care services: A cross-sectional study. *Scand J Caring Sci*. 2022;**36**(2):482-92. [PubMed ID: 34997785]. [PubMed Central ID: PMC9306531]. https://doi.org/10.1111/scs.13064.

24. Abiodun O, Olu-Abiodun O. The Correlation between Organizational Culture, Leadership Behavior, and Job Satisfaction: A Cross-sectional Study of General Hospital Nurses in Nigeria. *Asian J Med Health*. 2017;**2**(2):1-13. https://doi.org/10.9734/AJMAH/2017/30450.

25. Tate K, Penconek T, Dias BM, Cummings GG, Bernardes A. Authentic leadership, organizational culture and the effects of hospital quality management practices on quality of care and patient satisfaction. *J Adv Nurs*. 2023;**79**(8):3102-14. [PubMed ID: 37002558]. https://doi.org/10.1111/jan.15663.

26. Sen L, Kumar A, Hota S, Kanta Biswal S, Panda K. A Profile View of Healthcare Service Sector Organizations through Integration with Organizational Culture and Subculture. *Asia Pacific J Health Management*. 2022. https://doi.org/10.24083/apjhm.v17i2.1823.

27. Srimulyani VA, Hermanto YB. Organizational culture as a mediator of credible leadership influence on work engagement: empirical studies in private hospitals in East Java, Indonesia. *Humanit Soc Sci Commun*. 2022;**9**(1):274. [PubMed ID: 35990765]. [PubMed Central ID: PMC9381403]. https://doi.org/10.1057/s41599-022-01289-z.