

Management Issues in Healthcare System

2025(11)67–79

EUROKD

Humor, Leader-Member Exchange, and Work Engagement: A Mediation Analysis Among Nurses in Emergency Care Settings

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Received *7 September 2025* ***Accepted*** *18 December 2025*

ABSTRACT

This study investigates the relationship between leader-member exchange and work engagement among emergency care setting nurses, considering the mediating role of humor at work. Through a causal quantitative approach, 301 employees in Emergency care settings were chosen from five hospitals at random using a simple random procedure. Three validated scales were used in this study to measure the study variables and establish a structural equation model. The findings reveal that Leader-Member exchange positively affects nurses' work engagement and Humor at work. But the humor on work engagement is not significantly related to work engagement. Therefore, the effects of leader-member exchange and work engagement, while humor mediates them, were not significant. The study demonstrates that leader-member exchange has a significant, direct, positive impact on both nurses' work engagement and workplace humor. While workplace humor does not mediate this relationship, the findings highlight that direct relational leadership is the primary driver of nursing engagement. For hospital administrators in emergency care settings, this suggests a need to prioritize supervisors' relational behaviors. Cultivating high-quality leader-member exchange directly improves the work environment and boosts nurses' engagement, ultimately leading to more effective healthcare management and better patient outcomes.

Keywords: *Humor at work, LMX, Caring behavior, Work engagement, Hospital Emergency, Ardabil*

How to cite this article:
Ardabibli, F. S., & Aboutalebi Daryasari, G. (2025). Humor, Leader-Member Exchange, and work engagement: A mediation analysis among nurses in emergency care settings. *Management Issues in Healthcare System*, *11*, 67-79. https://doi.org/10.32038/mihs.2025.11.05

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Emergency Departments (EDs) represent one of the most dynamic, high-pressure environments in the healthcare system. Unlike units with more predictable workflows, EDs operate under conditions of uncertainty, rapid patient turnover, and life-threatening cases that require immediate attention. In these settings, nurses are not only expected to meet high professional standards but must also adapt in real time to variable caseloads, shifting priorities, and urgent decision-making demands. Such conditions inherently produce substantial psychological and physical strain (Adriaenssens et al., 2015), which shows the importance of work-related interventions. Moreover, the "content" of emergency nursing work is not rigid or routine; it is complex, situational, and highly dependent on interdisciplinary coordination, effective command structures, and swift, accurate communication.

Leadership in the ED plays a pivotal role in this ecosystem. Beyond technical competence, the quality of the nurse–leader relationship profoundly shapes team coordination, morale, and ultimately patient outcomes. Leader–Member Exchange (LMX) theory posits that high-quality relationships between leaders and subordinates, marked by trust, mutual respect, and open communication, yield greater individual and team performance (Graen & Uhl-Bien, 1995). In ED nursing, where rapid alignment of actions is critical, LMX dynamics may be particularly consequential. However, the style and tone of leadership that are most effective in this volatile environment remain an open question: should leaders emphasize strict discipline and control, or prioritize closer interpersonal relationships with staff?

Humor offers a potentially important but underexplored lens in this debate. In broader organizational research, humor—especially adaptive forms such as affiliative or self-enhancing humor—has been linked to reduced stress, improved team cohesion, and a better workplace climate (Mesmer-Magnus et al., 2012). Within ED teams, humor can serve as a coping tool, easing the emotional burden and fostering camaraderie among nurses and their leaders. Alternatively, in high-stakes settings, humor might be perceived as a distraction or incompatible with the urgency of clinical tasks. Whether humor strengthens LMX in ED nursing or whether its impact is overshadowed by the need for decisiveness and discipline remains empirically unclear.
Work engagement, the positive, fulfilling work-related state characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), is another critical construct. High levels of engagement have been associated with better performance, resilience, and reduced turnover among nurses (Keyko, 2014). Yet, research has rarely examined whether humor might indirectly promote work engagement by enhancing nurse–leader relationships in emergency settings. Understanding these interconnections is vital, as it may clarify whether ED teams benefit more from "jokier," optimistic nurses who foster relational warmth, or from leaders who maintain emotional distance in favor of operational control.

This study addresses these gaps by investigating the relationships between humor, leader–member exchange, and work engagement among nurses working in hospital emergency departments. By exploring how these factors interact, we aim to shed light on the leadership–team dynamic best suited to the demanding, unpredictable, and high-stakes nature of emergency care.

Review of Literature

The Effect of Leaders-Member exchange on Work Engagement

In hospital Emergency Departments (EDs), nurses operate under conditions where speed, uncertainty, and high emotional demand converge daily. In such environments, the relational quality between leaders and staff can be a decisive factor in maintaining energy and commitment to work. Leader–Member Exchange (LMX) theory frames this relationship as a continuum of trust, respect, and obligation, with higher-quality exchanges providing superior access to both tangible support and socioemotional resources (Graen & Uhl-Bien, 1995).

Recent evidence shows that well-developed leader–nurse relationships supply critical "relational capital" that can be deployed to meet both clinical and psychological demands. For instance, nurses experiencing high LMX reported greater team commitment (Hwang et al., 2020), engaging in pro-social rule-breaking (Irshad et al., 2022), and empowerment (Ardabili, 2020; Zhuang et al., 2025), which were attributed to increased autonomy, organizational identity, and performance (Dasgupta, 2024). These relational assets align with the Job Demands–Resources framework, which positions supportive leadership as a core resource capable of sustaining engagement under high strain (Bakker & Demerouti, 2017; Bakker et al., 2023).

Beyond material and informational aid, LMX can foster an interpersonal climate that supports candid communication and personal initiative. Weiss et al. (2023) found that high LMX enhanced psychological safety, and other studies revealed that nurses who form closer relationships with their superiors are more willing to voice suggestions or concerns (Lee & Dahinten, 2021; Parastar, 2025; Xue et al., 2020), behaviors closely tied to active engagement. Similarly, daily-level analyses by Elzeny et al. (2025) and Breevaart et al. (2015) observed that LMX quality can enhance moment-to-moment engagement by affirming employees' contributions and reinforcing their sense of professional purpose. LMX also fosters a more supportive and resourceful work environment. In such an environment nurses feel supported and empowered, so the result leads to enhanced care quality (Hashemian et al., 2025; Irshad et al., 2022).

In critical care contexts, such as EDs, these dynamics take on greater urgency: turnover costs are high, burnout risk is elevated, and sustained attention is vital to patient outcomes. Pereira et al., (2021) argue that relational resources—particularly leader support—may outweigh structural benefits in preserving engagement during peak demand. Without high-quality LMX, these relational buffers weaken, increasing vulnerability to exhaustion and disengagement (Breevaart et al., 2015).

Taken together, the evidence indicates that strong leader–member relationships can translate into higher work engagement by supplying targeted resources, fostering confidence in decision-making, and creating a climate where sustained effort feels worthwhile.

The Mediating Effects of Humor between LMX and Work Engagement

Leader–Member Exchange (LMX) theory remains a valuable framework for understanding how the quality of leader–member relationships shapes workplace outcomes, especially in high-stress clinical contexts such as emergency departments (EDs). Recent research emphasizes that

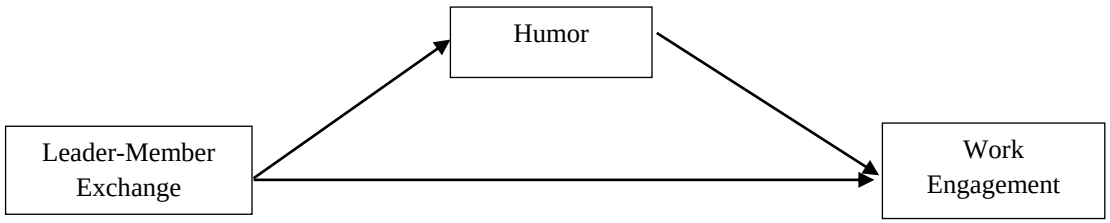
high-quality LMX relationships enhance not only role clarity and resource accessibility but also psychological safety and resilience among nurses facing acute care pressures (Zeng et al., 2022). In ED settings—where rapid decision-making, unpredictable patient inflow, and multidisciplinary coordination are daily realities—trust-based leader–nurse connections may serve as a foundation for sustaining performance and well-being under strain.

Humor has gained recognition in recent years as a strategic interpersonal behavior that can buffer stress, promote cohesion, and improve communication in healthcare teams (Bartzik et al., 2021; Mesmer-Magnus et al., 2012). In high-pressure environments, leaders and team members who use affiliative humor appropriately can defuse tension, make emotionally charged interactions more manageable, and reinforce group solidarity (Cooper et al., 2018; Kong et al., 2019). When embedded in an established high-quality LMX relationship, humor may signal mutual trust and openness, fostering a climate of emotional comfort that facilitates the translation of relational quality into greater energy and commitment at work.

Work engagement has consistently been linked to patient safety, job satisfaction, and reduced turnover in nursing (Pereira et al., 2021; Zhang et al., 2018). More recently, scholars have called for examining its antecedents in acute-care settings, noting that interpersonal and affective resources may be as important as structural supports in sustaining engagement (Bock et al., 2021). Integrating these perspectives suggests that humor could serve as a key interpersonal mechanism linking LMX to work engagement in the ED. Figure 1 shows the conceptual model with regard to the mediating role of humor at work.

Figure 1

Conceptual Model of Research



Hypotheses

H1: Leader–member exchange is positively related to work engagement among nurses in emergency departments.

H2: Leader–member exchange is positively related to humor among nurses in emergency departments.

H3: Humor is positively related to work engagement among nurses in emergency departments.

Method

Sample and Procedure

This research is applied in terms of purpose and descriptive survey in terms of research method. The statistical population of the research includes all nurses working in emergency departments in the hospitals in Iran during 2023-2024. The questionnaires were sent to 476 people through random sampling. Among them, 301 questionnaires were entered for analysis. Based on the

distribution of the statistical sample, 28.1% are men, and 71.9% are women. Eighty nurses are under 30 years old (26.8%), 148 people are 30 to 40 years old (49.2%), and 73 people are over 40 years old (24.1%). In terms of service experience, 78 people have less than 5 years of experience (26.4 percent), 106 people have 5 to 10 years of experience (35.8 percent), and 66 people have 15 years or more of experience (22.3 %).

Instrument

Leader–Member Exchange. Leader–member exchange was measured using the 7-item LMX-7 scale developed by Graen and Uhl-Bien (1995). The instrument evaluates the perceived quality of the working relationship between leaders and subordinates, covering dimensions such as mutual trust, respect, and obligation. Items are rated on a Likert-type scale, commonly ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores reflecting a higher-quality exchange relationship. The LMX-7 has shown excellent reliability, predictive validity, and applicability across diverse occupational settings, including health care (Graen & Uhl-Bien, 1995). The results show that the structural validity of the Leader-Member Exchange is good and the fitting indexes are $\chi 2/df = 5.79$, CFI = .94, TLI = .90, RMSEA = .10 and SRMR = .04, which are in a good range

Humor. Humor was assessed using the Humor Styles Questionnaire developed by Saroglou and Scariot (2002). The scale measures individuals' tendencies to use humor as a coping strategy and as a means of social interaction, encompassing both affiliative and self-enhancing dimensions. Items are rated on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater endorsement of adaptive humor styles. The instrument has demonstrated satisfactory internal consistency and construct validity across cultural contexts (Saroglou & Scariot, 2002). The fitness indexes achieved in ood rane included four dimensions: $\chi 2/df = 4.69$, CFI = .90, TLI = .89, RMSEA = .11, and SRMR = .07.

Work Engagement. Work engagement was measured using the Utrecht Work Engagement Scale. The UWES comprises 17 items distributed across three subscales: Vigor, Dedication, and Absorption. Participants respond on a 7-point Likert scale ranging from 0 (*never*) to 6 (*always/every day*). Higher scores indicate greater levels of work engagement. The UWES has been widely validated in occupational settings, demonstrating robust reliability and factorial validity (Schaufeli et al., 2002). We used the UWES-9, which maintains the same factor structure and response scale but comprises nine of the original 17 items (Appendix A). Item nine, "*I get carried away when I am working," was excluded from analysis because its factor loading was* less than 0.4. The resulted indexes for 8 retained items are $\chi 2/df = 3.79$, CFI = .92, TLI = .88, RMSEA = .09 and SRMR = .05.

Analytic Approach

Data analysis was conducted using SPSS 20 and AMOS 20, and the measurement model was evaluated through Confirmatory Factor Analysis (CFA) to ensure discriminant validity, as shown in Table 1. Model fit was assessed using Structural Equation Modeling (SEM) goodness-of-fit indices, including χ^2/df (< 3), RFI, NFI, CFI, and TLI (> .90), and RMSEA (≤ .05 optimal, ≤ 0.08 acceptable) (Kline, 2023). Harman's single-factor test (Podsakoff et al., 2003) indicated no

significant common method variance, with six factors emerging and the largest accounting for 29.07% of variance.

Data integrity was ensured through double data entry verification (Barchard & Christensen, 2007). Missing data ($M = 1.52\%$, $SD = 1.75$) were imputed using the Expectation-Maximization (EM) algorithm (Schafer & Graham, 2002), following Little's (1988) MCAR test, which supported the appropriateness of EM imputation. The mean, variance, and correlations for the study variables are summarized in Table 2.

Table 1

Reliability and Validity of Constructs for Model Building

Items		Standard loading
LMX	*Leader Member Exchange (Alpha = .90)*	
LMX1	Do you know where you stand with your leader and do you usually know how satisfied your leader is with what you do?	.76
LMX2	How well does your leader understand your job problems and needs?	.89
LMX3	How well does your leader recognize your potential?	.90
LMX4	Regardless of how much formal authority your leader has, what are the chances that they would use their power to help you solve problems in your work?	.81
LMX5	Again, regardless of the amount of formal authority your leader has, what are the chances that they would "bail you out" at their expense?	.80
LMX6	I have enough confidence in my leader that I would defend and justify their decision if they were not present to do so	.56
LMX7	How would you characterize your working relationship with your leader?	n.a
WE	*Work Engagement (Alpha=0.794)*	
WE1	At my work, I feel bursting with energy. (UWES-9)	.79
WE2	At my job, I feel strong and vigorous. (UWES-9)	.84
WE3	When I get up in the morning, I feel like going to work. (UWES-9)	.82
WE4	I am enthusiastic about my job. (UWES-9)	.87
WE5	My job inspires me. (UWES-9)	.87
WE6	I am proud of the work that I do. (UWES-9)	.78
WE7	I feel happy when I am working intensely. (UWES-9)	.84
WE8	I am immersed in my work. (UWES-9)	.61
WE9	I get carried away when I am working. (UWES-9)	n.a
HUM	*Humor (Alpha= 0.837)*	
	Affiliative humor	
HUM1	I don´t have to work very hard at making my colleagues laugh – I seem to be a naturally humorous person.	
HUM2	I enjoy making my colleagues laugh	.80
HUM3	I can usually think of witty things to say when I´m with my colleagues.	.65
	Self-Enhancing humor	.52
HUM4	If I am feeling depressed at work, I can usually cheer myself up with humor.	
HUM5	If I am feeling upset or unhappy at work, I usually try to think of something funny about the situation to make myself feel better	.82 .89
HUM6	If I´m at work and I´m feeling unhappy, I make an effort to think of something funny to cheer myself up.	
	Aggressive humor	.87
HUM7	If someone makes a mistake at work, I will often tease them about it.	
HUM8	If I don´t like someone at work, I often use humor or teasing to put them down.	.75
HUM9	If something is really funny to me at work, I will laugh or joke about it even if someone will be offended.	.79
	Self-defeating humor	n.a
HUM10	I will often get carried away in putting myself down if it makes my colleagues laugh.	
HUM11	I often try to make my colleagues like or accept me more by saying something funny about my own weaknesses, blunders, or faults.	.86 .90
HUM12	Letting others laugh at me is my way of keeping my colleagues in good spirits	.87

Table 2

The Summary of Descriptive Statistics & Correlations

		M	*SD*	1	2	3	Cronbach's Alpha
1.	Leader Member Exchange	3.20	.69	.06	--		.90
2.	Humor	2.62	.88	-.21*	.33**	--	.83
3.	Work Engagement	2.32	.66	-.05	.25**	-.09	.79

Results

Measurement Model

Prior to testing the structural relationships, a Confirmatory Factor Analysis (CFA) was conducted using AMOS to evaluate the measurement model and ensure construct validity. The goodness-of-fit statistics indicated that the measurement model yielded an acceptable fit to the data: $\chi 2(df) = 3.47$, CFI = .90, TLI = .90, and RMSEA = .09. These indices demonstrate adequate and strong item–construct relationships, allowing progression to structural model testing.

Structural Model and Direct Effects

To investigate the hypothesized relationships and the mediating role of Humor between Leader–Member Exchange (LMX) and Work Engagement (WE), the structural paths were analyzed and presented in Table 3.

First, the direct effect of LMX on the proposed mediator was examined. The results revealed that LMX had a significant positive effect on Humor (*B* = .34, *SE* = .11, C.R. = 4.62, *p* < .001), providing strong support for Hypothesis 1.

Next, the direct effect of Humor on Work Engagement was assessed. Humor negatively predicted Work Engagement (*B* = −.12, *SE* = .09, C.R =− 1.90, *p* = .05). While this relationship was marginally significant at the standard 0.05 alpha level, it provided support for the directionality proposed in Hypothesis 2.

Additionally, the direct effect of the independent variable on the dependent variable was tested. The results indicated that LMX directly and positively predicted Work Engagement (*B* = .43, *SE* = .13, C.R = 5.24, *p* = .001), thereby supporting Hypothesis 3.

Table 3

Hypothesis Analysis Results

Path	*B*	*SE*	*C.R*	*p*
LMX → Humor	0.342	0.119	4.626	0.001
Humor → WE	-0.127	0.096	-1.901	.057
LMX → WE	0.432	0.131	5.242	0.001

Note. WE = Work Engagement; LMX= Leader-Member Exchange.

Finally, the indirect effect of LMX on Work Engagement through Humor was evaluated to test the mediation hypothesis. The analysis revealed that the indirect effect of LMX on Work Engagement via Humor was not statistically significant (B = −.04, *p* < .001). Therefore, while

LMX directly affects both Humor and Work Engagement, Humor does not mediate the relationship between LMX and Work Engagement.

Discussion

The present study investigated the effect of the leader-member relationship on emergency department nurses' work engagement, as well as the mediating role of humor in the workplace. The results showed that leader-member exchange is a significant predictor of nurses' work engagement and had a positive effect on humor at work; however, humor did not have a significant effect on work engagement and did not mediate this relationship.

Similar to the research by Kim et al. (2025) and Gkorezis et al. (2014), the results of the present study showed that a high-quality LMX relationship can contribute to humor among nurses, but it does not necessarily lead to improved work engagement through this mechanism. Rather, the direct role of the supervisor's relationship with nurses can have a positive and significant impact on job performance (Dasgupta, 2024; Hashemian et al., 2025).

Many factors affect nurses' work engagement, but among the behavioral predictor variables of work engagement related to superiors, one key factor is trust in the supervisor. Trust in the supervisor helps nurses to feel supported and work together under pressure. The trust is directly affected by the quality of the relationship between nurses and their supervisors. Another reason, which can be related to the nature of the job, is the level of stress in the emergency department. Under high workloads and highly stressful conditions, nurses require greater psychological support, and they can be psychologically empowered through a high-quality relationship with their supervisor (Ardabili, 2020).

Although humor showed a significant relationship with both the leader-member exchange and work engagement variables, it was not a predictor of work engagement in this study. This result is not consistent with studies such as Graves et al. (2012) and Bartzik et al. (2021) that confirm the relationship between workplace humor and work performance. One possible explanation for this finding is that prior research may have paid insufficient attention to occupational differences between nurses across departments, particularly in the Emergency Department (ED). In the ED work environment, although humor may increase marginally due to the quality of interactions with supervisors, the inherent nature of ED nursing demands strict seriousness, speed, and adherence to established protocols. Consequently, these nurses have limited time for non-task-related communication while on duty. Thus, humor does not necessarily enhance their work engagement; rather, it might inadvertently exacerbate job-related stress and the fear of clinical errors.

Furthermore, when investigating the variable of humor, increasing importance must be accorded to the specific cultural context under study. In certain cultures, humor is not considered a behavioral trait appropriate for a manager or for work. Particularly among female nurses, expressing humor may elicit adverse socio-cultural reactions from colleagues. From a religious perspective, joking with the opposite sex is generally frowned upon among Muslims. Given the mixed-gender composition of emergency staff, this likely serves as a significant social deterrent to engaging in workplace humor.

The findings of this study can assist managers in placing special emphasis on the behavioral and communication skills of individuals when making appointments in Emergency Departments (EDs). Supervisors must possess the necessary interpersonal qualities, in addition to technical proficiency, to effectively communicate with ED nurses. Simultaneously, they should refrain from exhibiting high levels of humor.

Furthermore, it is recommended that managers avoid employing a uniform management style or model across various hospital wards. Different departments within a single hospital can present entirely distinct behavioral and psychological environments.

Although the effect of the gender variable was controlled in this study, it is important to note that in cultures such as Iran, gender differences between supervisors and nurses can influence both the quality of communication and the prevalence of humor. From a religious standpoint, interactions between men and women are expected to remain within a defined and restricted framework. Consequently, future research should investigate how outcomes might vary when the supervisor and the nurse share the same gender, and explore whether humor could foster greater work engagement under such circumstances.

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APPENDIX A

HUMOR STYLES QUESTIONNAIRE (HSQ)

Affiliative humor

I don´t have to work very hard at making my colleagues laugh – I seem to be a naturally humorous person.

I enjoy making my colleagues laugh

I can usually think of witty things to say when I´m with my colleagues.

Self-Enhancing humor

If I am feeling depressed at work, I can usually cheer myself up with humor.

If I am feeling upset or unhappy at work, I usually try to think of something funny about the situation to make myself feel better

If I´m at work and I´m feeling unhappy, I make an effort to think of something funny to cheer myself up.

Aggressive humor

If someone makes a mistake at work, I will often tease them about it.

If I don´t like someone at work, I often use humor or teasing to put them down.

If something is really funny to me at work, I will laugh or joke about it even if someone will be offended.

Self-defeating humor I will often get carried away in putting myself down if it makes my colleagues laugh.

I often try to make my colleagues like or accept me more by saying something funny about my own weaknesses, blunders, or faults.

Letting others laugh at me is my way of keeping my colleagues in good spirits

Letting others laugh at me is my way of keeping my colleagues in good spirits

Utrecht Work Engagement Scale (Shortened version- UWES-9)

Vigor

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. When I get up in the morning, I feel like going to work.

Dedication

4. I am enthusiastic about my job.
5. My job inspires me.
6. I am proud of the work that I do.

Absorption

7. I feel happy when I am working intensely.
8. I am immersed in my work.
9. I get carried away when I am working.

Leader–Member Exchange (LMX-7)

1. Do you know where you stand with your leader and do you usually know how satisfied your leader is with what you do?
2. How well does your leader understand your job problems and needs?
3. How well does your leader recognize your potential?
4. Regardless of how much formal authority your leader has, what are the chances that they would use their power to help you solve problems in your work?
5. Again, regardless of the amount of formal authority your leader has, what are the chances that they would "bail you out" at their expense?
6. I have enough confidence in my leader that I would defend and justify their decision if they were not present to do so.
7. How would you characterize your working relationship with your leader?

Acknowledgments
The authors want to express special gratitude to the nurses in emergency departments who have voluntarily completed the survey under time pressure and hardworking.

Funding
Not applicable.

Conflict of Interests
No, there are no conflicting interests.

Data Availability
The datasets generated during and analyzed in the study are available from the corresponding author upon reasonable request.

Declaration of use of AI in Scientific Writing
The authors used Gemini 3.5 to assist with grammer checking.

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