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Health Care Administration/Sağlık Hizmetleri Yönetimi

The Relationship Between Clinical Leadership Perceptions and Teamwork Attitudes: An Analysis in the Context of Emergency Healthcare Services

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ABSTRACT

Purpose: Clinical leadership is closely associated with teamwork effectiveness in emergency healthcare settings, where rapid decision-making, coordination, and communication are essential. The purpose of this study was to examine the relationship between clinical leadership perceptions and teamwork attitudes among healthcare professionals working in emergency healthcare services. Teamwork attitudes are examined within the framework of communication, mutual support, leadership, team structure and situation monitoring dimensions in this study.

Methods: This study was conducted with a quantitative research design on 290 healthcare professionals who work in private hospitals and ambulance services in Istanbul. Data were collected using a structured questionnaire consisting of three sections: demographic and work-related questions, the Clinical Leadership Scale, and the Teamwork Attitudes Questionnaire. Frequency distribution analysis, confirmatory factor analysis, correlation, and regression analyses were performed on the collected data by using SPSS and AMOS.

Results: Higher perceptions of clinical leadership were positively and significantly associated with all dimensions of teamwork attitudes, including communication, situation monitoring, mutual support, leadership, and team structure. Furthermore, the analysis revealed significant and positive results among these variables.

Conclusions: The findings suggest that clinical leadership is closely associated with positive teamwork attitudes in emergency healthcare services. Strengthening clinical leadership competencies and promoting a teamwork-oriented culture may contribute to improving teamwork processes, healthcare quality, and patient safety.

Keywords: Leadership, Patient Care Team, Emergency Medical Services, Emergency Medical Technicians, Attitude of Health Personnel

ÖZET

Amaç: Klinik liderlik, hızlı karar alma, koordinasyon ve iletişimin kritik olduğu acil sağlık hizmetlerinde ekip çalışmasının etkinliğini etkileyen önemli bir belirleyicidir. Bu çalışmanın amacı, acil sağlık hizmetlerinde çalışan sağlık çalışanlarının klinik liderlik algıları ile ekip çalışması tutumları arasındaki ilişkiyi incelemektir. Bu çalışmada ekip çalışması tutumları, iletişim, karşılıklı destek, liderlik, ekip yapısı ve durum izleme boyutları çerçevesinde ele alınmaktadır.

Yöntem: Bu çalışma, İstanbul'daki özel hastanelerde ve ambulans hizmetlerinde çalışan 290 sağlık çalışanı üzerinde nicel araştırma tasarımıyla gerçekleştirilmiştir. Veriler, anket kullanılarak toplanmıştır. Ankette demografik ve işle ilgili sorular, Klinik Liderlik Ölçeği ve Takım Çalışması Tutumları Ölçeği yer almıştır. Verilere SPSS ve AMOS kullanılarak frekans dağılım analizi, doğrulayıcı faktör analizi, korelasyon ve regresyon analizleri uygulanmıştır.

Bulgular: Bulgular, klinik liderlik algısının ekip çalışmasının tüm boyutları üzerinde anlamlı ve olumlu etkisi olduğunu göstermiştir ($p < 0.001$). Klinik liderlik; ekip yapısı, liderlik, durum izleme, karşılıklı destek ve iletişim boyutlarını anlamlı şekilde etkilemektedir. Ayrıca değişkenler arasında pozitif ilişkiler tespit edilmiştir.

Sonuç: Klinik liderlik, acil sağlık hizmetlerinde ekip çalışmasını güçlendiren önemli bir faktördür. Liderlik becerilerinin geliştirilmesi ve ekip temelli çalışma kültürünün desteklenmesi, sağlık hizmetlerinin kalitesine ve hasta güvenliğine katkılarda bulunabilir.

Anahtar Kelimeler: Liderlik, Hasta Bakım Ekibi, Acil Sağlık Hizmetleri, Acil Tıp Teknisyenleri, Sağlık Personelinin Tutumu

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Healthcare services have a complex and dynamic structure which involves the simultaneous participation of multiple professionals. Particularly, emergency healthcare services require effective teamwork due to working environments characterized by time pressure, uncertainty, and high risk. Abilities of team members to make rapid decisions, communicate effectively, and act in a coordinated manner are critical for service quality and patient safety in these settings (1,2). According to Zel (2011), leadership is defined as the process of bringing team members together toward common goals and utilizing the necessary knowledge and skills to achieve these goals (3). In healthcare settings, leadership involves ensuring communication, coordination, and collaboration among team members (4). On the other hand, Mianda and Voice (2017) believe that clinical leadership is the ability of healthcare professionals to guide team members and actively participate in decision-making processes in order to improve the quality of patient care (5). VQC (2005) acknowledges that clinical leadership refers to healthcare professionals who take responsibility in patient care processes, guide team members, and actively contribute to improve the quality of care (6). In this context, the scale developed by the UK National Health Service (NHS) highlights that clinical leadership is a crucial component of leadership which enhances the quality of patient care, strengthens team performance, and supports patient-centered service. Furthermore, clinical leadership is considered as an influential factor not only in daily clinical practices but also in strategic decision-making processes. (7). This form of leadership is particularly important in emergency healthcare settings to ensure intra-team coordination and effective management of decision-making processes. Accordingly previous studies have revealed that clinical leadership is associated with improved team performance, collaboration, and patient safety (8). Teamwork refers to the collaboration of individuals from different areas of expertise working together toward a common goal (9). Especially in healthcare settings, teamwork is considered as an indispensable element due to the multidisciplinary nature of the environment which plays a critical role in improving patient safety and service quality. (10). Particularly in emergency healthcare services, teamwork occurs under conditions which require rapid decision-making, task distribution, and coordination and making interaction among team members highly important (10). Although there are various studies that have been conducted in this field, the relationship between clinical leadership and teamwork, this relationship has not been addressed within a comprehensive framework in healthcare settings (11). There is limited research for examining teamwork processes and leadership-related factors particularly in emergency medical services (12). This situation highlights the need for a more comprehensive evaluation of the relationship between clinical leadership and teamwork attitudes. Accordingly, the purpose of this study was to examine the relationship between clinical leadership perceptions and teamwork attitudes among healthcare professionals working in emergency healthcare services. Teamwork attitudes were examined across five dimensions: communication, mutual support, leadership, team structure, and situation monitoring. It is anticipated that the findings of this study will contribute to the development of clinical leadership competencies and promote a stronger teamwork-oriented culture in healthcare organizations.

Material and methods

Research Purpose, Hypotheses and Model

The purpose of this study was to examine the relationship between clinical leadership perceptions and teamwork attitudes of healthcare professionals who work in emergency healthcare services. Teamwork attitudes were examined across five dimensions: communication, mutual support, leadership, team structure, and situation monitoring.

• The research model was designed as follows in Figure 1 in line with the purpose of the study:

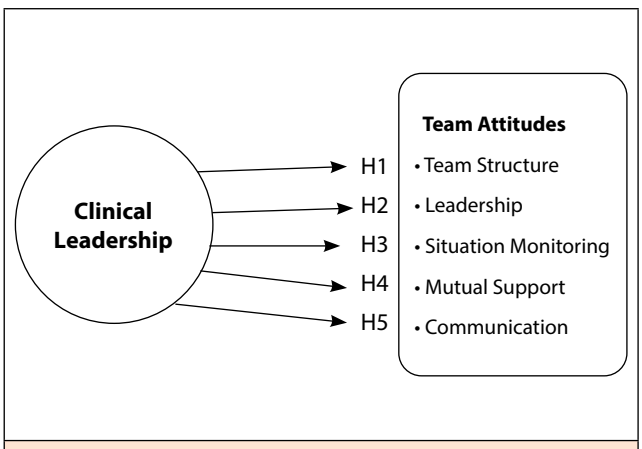

Figure 1. Conceptual Research Model and Hypothesized Relationships
Figure 1 presents the conceptual research model developed for this study. The model proposes that perceptions of clinical leadership are positively associated with the five dimensions of teamwork attitudes, namely team structure, leadership, situation monitoring, mutual support, and communication.

Hypotheses

H1: Higher perceptions of clinical leadership are positively associated with team structure.

H2: Higher perceptions of clinical leadership are positively associated with leadership.

H3: Higher perceptions of clinical leadership are positively associated with situation monitoring.

H4: Higher perceptions of clinical leadership are positively associated with mutual support.

H5: Higher perceptions of clinical leadership are positively associated with communication.

The sample consisted of 290 healthcare professionals, and data were collected using a structured questionnaire. SPSS version 24 and AMOS version 22 were used for all statistical analyses. Frequency analyses were performed to summarize the demographic and work-related characteristics of the participants. The validity of the measurement model was evaluated using confirmatory factor analysis (CFA). Subsequently, convergent and discriminant validity analyses were performed using Composite Reliability (CR), Average Variance Extracted (AVE), and the Heterotrait–Monotrait Ratio (HTMT). Pearson correlation analysis was conducted to examine the relationships between the variables, and simple linear regression analysis was performed to test the proposed hypotheses. Statistical significance was accepted at $p < 0.01$ and $p < 0.001$.

Design

This quantitative cross-sectional study was conducted to examine the relationship between perceived clinical leadership and teamwork attitudes among emergency medical service professionals.

Sampling

The sample of the study consisted of 290 healthcare professionals who work in private hospitals and ambulance services. Participants were selected by using a convenience sampling method. All participants voluntarily agreed to participate to the study.

Data Collection Tools

Data were collected using a structured questionnaire consisting of three sections and a total of 80 items. The first section included 12 demographic and work-related questions developed by the researcher to obtain information regarding participants' age, gender, education level, marital status, occupation, institution, department, and professional experience.

The second section included the Clinical Leadership Scale developed by the National Health Services Leadership Academy (2012) and adapted into Turkish by Budak (2016). The scale consists of two sections. The first section contains socio-demographic and organizational questions, while the second section includes 40 items designed to assess clinical leadership characteristics. The items are rated on a three-point Likert scale ranging from 1 ("Almost Never") to 3 ("Almost Always"). The total score is obtained by averaging the item scores, with higher scores indicating stronger perceptions of clinical leadership. The Clinical Leadership Scale demonstrated excellent internal consistency with a Cronbach's alpha coefficient of 0.920 in this study.

The third section included the Teamwork Attitudes Questionnaire (T-TAQ), originally developed by Baker, Krokos, and Amodeo (2008) and adapted into Turkish by Yardımcı, Başbakkal, Beytut, Muslu, and Ersun (2012). The scale was used to assess attitudes of healthcare professionals toward teamwork and consists of 28 items rated on a five-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). The questionnaire comprises five dimensions: team structure (6 items), leadership (6 items), situation monitoring (6 items), mutual support (5 items), and communication (5 items). Total scores range from 28 to 140, with higher scores indicating more positive attitudes toward teamwork. In the Turkish adaptation study, split-half reliability coefficients were reported as 0.86 and 0.87. In the present study, the Cronbach's alpha coefficient of the overall scale was 0.860, while the alpha coefficients of the sub-dimensions ranged between 0.875 and 0.894.

Data Collection Procedures

The questionnaire was distributed to healthcare professionals and completed on a voluntary basis. Before participation, participants were informed about the purpose of the study, the study procedures, and the voluntary nature of their participation. All responses were collected anonymously to ensure participant confidentiality.

Data Analysis

Analyses were conducted by using SPSS 24 and AMOS 22 software. Confirmatory factor analysis (CFA) based on the Maximum Likelihood method was conducted to explore the validity of the measurement model. Model fit was evaluated by using χ^2/df, CFI, TLI, RMSEA, SRMR, and GFI indices. Convergent and discriminant validity analyses were performed to assess construct validity. Convergent validity was assessed using Composite Reliability (CR) and Average Variance Extracted (AVE), while discriminant validity was assessed by using the Heterotrait–Monotrait Ratio (HTMT). Pearson correlation analysis was conducted to explore the relationships between variables. Simple linear regression analyses were conducted with clinical leadership as the independent variable and teamwork as the dependent variable to test the research hypotheses. Statistical significance levels were accepted as $p < 0.01$ and $p < 0.001$.

Ethical Considerations

Ethical approval for this study was obtained from the Istanbul Kent University Health Sciences Research Ethics Committee. The study protocol was reviewed and approved at the committee meeting held on January 14, 2026 (Protocol/Decision No: 2026-01). Prior to participation, all healthcare professionals were informed about the purpose of the study, the voluntary nature of participation, confidentiality of the collected data, and their right to withdraw from the study at any stage without any consequences. Electronic informed consent was obtained from all participants before completion of the questionnaire. All responses were collected anonymously and used solely for scientific research purposes. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki.

Results

Demographic Characteristics

The demographic and work-related characteristics of the healthcare professionals who participated in this study are presented in Table 1.

The majority of participants were female (61.4%), and more than half were 25 years or younger (54.4%). Most participants were single (73.9%) and held an associate degree (62.8%). Paramedics constituted the largest professional group (54.2%), followed by emergency medical technicians (28.6%) and paramedic drivers (17.2%) in terms of profession. Almost half of the participants (53.3%) worked for private ambulance companies and (53.1%) for ambulance units. The majority had 0–5 years of work experience (68.6%) and professional experience (53.6%). Additionally, most participants had not received management (62.5%), leadership (64.2%), or clinical leadership training (70.8%).

Table 1. Demographic Characteristics of Emergency Healthcare Workers

Variable	Category	f	%
Gender	Female	178	61.4
	Male	112	38.6
Age	25 years and under	158	54.4
	26–35 years	105	36.4
	36–45 years	25	8.6
	46 years and above	2	0.6
Marital Status	Married	76	26.1
	Single	214	73.9
Education Level	High School	68	23.3
	Associate Degree	182	62.8
	Bachelor's Degree	36	12.5
	Postgraduate	4	1.4
Profession	EMT	83	28.6
	Paramedic	157	54.2
	Paramedic Driver	50	17.2
Institution	Private Ambulance Company	155	53.3
	Private Hospital	135	46.7
Unit	Ambulance	154	53.1
	Emergency Medical Services	129	44.4
	Inpatient Services	7	2.5
Length of Service in the Institution	0–5 years	199	68.6
	6–10 years	68	23.6
	11–15 years	22	7.5
	16 years or more	1	0.3
Years of Professional Experience	0–5 years	156	53.6
	6–10 years	81	28.1
	11–15 years	51	17.5
	16 years or more	2	0.8
Management Training	Yes	109	37.5
	No	181	62.5
Leadership Training	Yes	104	35.8
	No	186	64.2
Clinical Leadership Training	Yes	85	29.2
	No	205	70.8
Sample (n = 290)			

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was conducted to explore the suitability of the measurement model. The results showed that the measurement model demonstrated an acceptable level of fit (χ^2/df = 2.278; CFI = 0.912; TLI = 0.904; RMSEA = 0.072; SRMR = 0.061; GFI = 0.901). These results indicate that the model has a generally acceptable and good fit.

When the confirmatory factor analysis (CFA) fit indices were explored, it was revealed that the model showed a generally acceptable and good fit level. The chi-square/degrees of freedom ratio (χ^2/df = 2.278) lower than 3 indicates that the model has a good fit (13). The Comparative Fit Index (CFI = 0.912) and Tucker-Lewis Index (TLI = 0.904) values being above the 0.90 threshold reveal that the model has a suitable and good fit (14). The Root Mean Square Error of Approximation (RMSEA = 0.072) and Standardized Root Mean Square Error (SRMR = 0.061) values being below 0.08 reveal that the model's errors are acceptable and it shows a good fit, especially in terms of SRMR. In addition, a Goodness-of-Fit Index (GFI = 0.901) above 0.90 supports the idea that the overall model fit is adequate (13,15).

When the comprehensive confirmatory factor analysis (CFA) results presented in Table 3 are examined, it is determined that the majority of the items in the measurement model represent their respective latent constructs at a significant and acceptable level. The factor loadings of the Clinical Leadership dimension range between 0.495 and 0.682, and being generally close to or above the threshold value of 0.50 indicates that this dimension has adequate measurement strength. Furthermore, the high factor loadings of the items in the Team Structure, Leadership, Communication, and Situation Monitoring dimensions suggest that these constructs are well validated within the model (15).

Table 2. Confirmatory Factor Analysis (CFA) Fit Indices

Indices	Calculated Value	Accepted Range	Interpretation
χ^2/df (CMIN/DF)	2.278	≤ 3	Good fit
CFI	0.912	≥ 0.90	Acceptable
TLI	0.904	≥ 0.90	Acceptable
RMSEA	0.072	≤ 0.08	Acceptable
SRMR	0.061	≤ 0.08	Good fit
GFI	0.901	≥ 0.90	Acceptable

Table 3. Factor Loadings Table

Item	→	Dimension	Factor Loading
kl30	→	Clinical Leadership	0.682
kl40	→		0.658
kl34	→		0.636
kl29	→		0.631
kl35	→		0.614
kl38	→		0.611
kl31	→		0.605
kl32	→		0.597
kl37	→		0.589
kl28	→		0.582
kl24	→		0.578
kl39	→		0.561
kl33	→		0.558
kl36	→		0.552
kl18	→		0.541
kl22	→		0.537
kl14	→		0.534
kl20	→		0.528
kl23	→		0.522
kl13	→		0.520
kl27	→		0.518
kl9	→		0.514
kl19	→		0.512
kl8	→		0.509
kl6	→		0.495
ey2	→	Team Structure	0.762
ey1	→		0.741
ey5	→		0.732
ey6	→		0.728
ey3	→		0.720
ey4	→		0.701
el1	→	Leadership	0.812
el4	→		0.793
el2	→		0.784
el5	→		0.772
el3	→		0.711
el6	→		0.499
ile3	→	Communication	0.782
ile5	→		0.776
ile4	→		0.768
ile2	→		0.759
ile1	→		0.701
di4	→	Situation Monitoring	0.724
di2	→		0.701
di1	→		0.690
di5	→		0.663
di3	→		0.651
di6	→		0.647
kd5	→	Mutual Support	0.768
kd1	→		0.602
kd4	→		0.598

Examination of Convergent and Discriminant Validity of the Scales

Convergent and discriminant validity analyses were conducted within the scope of CFA to evaluate the construct validity of the measurement model. Convergent validity was assessed using Composite Reliability (CR) and Average Variance Extracted (AVE). According to the literature, CR values above 0.70 and AVE values above 0.50 indicate adequate convergent validity (13,15). Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT) and HTMT values below 0.85 were considered indicative of adequate discriminant validity (14).

As presented in Table 4, all Composite Reliability (CR) values ranged from 0.86 to 0.91, exceeding the recommended threshold of 0.70 and indicating satisfactory internal consistency across all constructs. The Average Variance Extracted (AVE) values ranged between 0.51 and 0.55 for Team Structure, Leadership, Situation Monitoring, Mutual Support, and Communication, thereby supporting convergent validity. Although the AVE value for Clinical Leadership (0.48) was slightly below the recommended threshold of 0.50, its Composite Reliability value was considerably high (CR = 0.91). According to Fornell and Larcker (1981), convergent validity can still be considered adequate when AVE is below 0.50 but CR exceeds 0.60. Therefore, the findings suggest that the measurement model shows acceptable convergent validity and satisfactory construct reliability (13).

Table 4. Assessment of Construct Validity

Variables	CR	AVE
Clinical Leadership	0.91	0.48
Team Structure	0.89	0.55
Leadership	0.88	0.54
Situation Monitoring	0.87	0.53
Mutual Support	0.86	0.51
Communication	0.88	0.54

In terms of discriminant validity, all HTMT values ranged between 0.66 and 0.74 and remained below the recommended threshold of 0.85 (14). These findings indicate that the constructs are conceptually distinct from one another and support the discriminant validity of the measurement model.

Overall, the findings demonstrate that the measurement model provides satisfactory construct validity. The CR values indicate strong internal consistency, the AVE values support convergent validity, and the HTMT results confirm discriminant validity. Therefore, the scales used in this study can be considered valid and reliable measurement instruments (13–15).

Correlation Analysis

The correlation analysis results presented in Table 5 reveal that all variables have a positive and significant relationship with each other (at the $p < 0.01$ level). Clinical Leadership shows weak to moderate positive correlations with the other variables, ranging from 0.268 to 0.365, revealing that higher perceptions of clinical leadership are associated with more positive teamwork attitudes. In contrast, stronger relationships are observed among the teamwork attitude dimensions themselves. Notably, Situation Monitoring demonstrates strong correlations with Communication ($r = 0.690$) and Mutual Support ($r = 0.640$), while Leadership is also strongly associated with Situation Monitoring ($r = 0.650$). Similarly, Team Structure exhibits moderate to strong relationships with Leadership ($r = 0.620$) and Situation Monitoring ($r = 0.610$).

Table 5. Discriminant Validity Results (HTMT)

Variables	HTMT
Clinical Leadership – Teamwork	0.72
Clinical Leadership – Leadership	0.69
Clinical Leadership – Situation Monitoring	0.74
Clinical Leadership – Communication	0.68
Clinical Leadership – Mutual Support	0.66

Table 6. Correlation Analysis Results

Variables	1	2	3	4	5	6
1. Clinical Leadership	1					
2. Team Structure	0.325**	1				
3. Leadership	0.301**	0.620**	1			
4. Situation Monitoring	0.365**	0.610**	0.650**	1		
5. Mutual Support	0.271**	0.460**	0.520**	0.640**	1	
6. Communication	0.268**	0.480**	0.550**	0.690**	0.610**	1

Note: Significant at the p < 0.01 level.

Table 7. Regression Analysis Results

Model	Dependent Variable	β	t	p	R	R^2
1	Team Structure	0.325	5.83	<0.001	0.325	0.106
2	Leadership	0.301	5.36	<0.001	0.301	0.091
3	Situation Monitoring	0.365	6.48	<0.001	0.365	0.133
4	Mutual Support	0.271	4.80	<0.001	0.271	0.073
5	Communication	0.268	4.72	<0.001	0.268	0.072

Independent variable: *Clinical Leadership*
All models are significant at the p < 0.001 level.

Testing Hypotheses with Regression Analysis

Within the scope of the analysis, simple linear regression analyses were conducted in which the Clinical Leadership scale was considered as the independent variable and the dimensions related to teamwork attitudes were considered as dependent variables. The regression models were tested by using SPSS software, and the significance of the coefficients was evaluated by using t-statistics.

The results of the regression analyses indicated that perceptions of Clinical Leadership had a positive and statistically significant effect on all dimensions of teamwork attitudes ($p < .001$). In the first model, Clinical Leadership positively predicted Team Structure ($\beta = 0.325$, $t = 5.83$, $R^2 = 0.106$), supporting H1. In the second model, Clinical Leadership also demonstrated a significant positive predictive relationship on the Leadership dimension ($\beta = 0.301$, $t = 5.36$, $R^2 = 0.091$), thereby supporting H2. The strongest predictive relationship was observed in the third model, where Clinical Leadership significantly predicted Situation Monitoring ($\beta = 0.365$, $t = 6.48$, $R^2 = 0.133$), supporting H3. Similarly, Clinical Leadership had a positive and significant effect on Mutual Support ($\beta = 0.271$, $t = 4.80$, $R^2 = 0.073$), confirming H4, and on Communication ($\beta = 0.268$, $t = 4.72$, $R^2 = 0.072$), supporting H5. Overall, the findings indicate that higher levels of perceived Clinical Leadership are associated with more positive teamwork attitudes across all dimensions, although the explained variance remains at low-to-moderate levels.

Overall, the findings indicate that the perception of Clinical Leadership has a significant and positive predictive relationship on all dimensions of teamwork attitudes; however, the explained variance levels are at low to moderate levels.

General Conclusion

The findings of the study reveal that perception of Clinical Leadership has positive and significant effect on all dimensions of teamwork attitudes. The CFA results indicate that the model has acceptable fit indices and the measurement model is valid. In addition, convergent and discriminant validity analyses support that the scales are reliable and conceptually distinct. While correlation analysis demonstrates significant and positive relationships among the variables, regression analyses confirm that all hypotheses (H1–H5) are supported. Overall, it is concluded that Clinical Leadership is an important factor which strengthens teamwork attitudes such as, communication, situation monitoring, mutual support, team structure and leadership.

Discussion

This study examined the relationship between perceptions of clinical leadership and teamwork attitudes among emergency healthcare professionals. The findings indicate that higher perceptions of clinical leadership were positively and significantly associated with all dimensions of teamwork attitudes, including team structure, leadership, situation monitoring, mutual support, and communication. These findings are generally consistent with previous studies suggesting that effective clinical leadership is closely associated with teamwork, interdisciplinary collaboration, and patient safety in healthcare settings (1,2,8).

Recent evidence further strengthens this interpretation. Sayyed et al. (18) emphasized that effective leadership in healthcare extends beyond administrative responsibilities and requires adaptive leadership strategies which promote communication, teamwork, professional development, and patient-centred care in increasingly complex healthcare systems. Their review also highlights that leaders who encourage collaboration and team building contribute to more effective healthcare delivery, supporting the associations observed in the present study.

Among the dimensions of teamwork attitudes, the strongest predictive relationship was observed for situation monitoring. This finding may reflect the characteristics of emergency healthcare services, where patient conditions change rapidly and healthcare professionals are required to maintain continuous situational awareness while coordinating care with multiple team members. Similar observations have been reported by Fernandez et al. (12), who emphasized that coordinated teamwork processes are essential in emergency medical services. Likewise, Razavi et al. (19) reported that effective clinical leadership behaviours included supporting communication, coordinating team activities, encouraging mutual monitoring, and facilitating collaborative decision-making, all of which contribute to safer patient care.

Positive predictive relationships were also identified between clinical leadership and team structure, leadership, communication, and mutual support. These findings support previous studies which reveal that clinical leadership is associated with clearer role clarification, collaborative decision-making, effective communication, and stronger professional cooperation within healthcare teams (8,11). Similarly, Braam et al. (20) found that healthcare professionals who showed stronger clinical leadership behaviours also reported higher levels of interdisciplinary collaborative behaviours. Interestingly, although nurses perceived themselves less frequently as leaders than physicians, both professional groups demonstrated comparable clinical leadership behaviours. These findings suggest that clinical leadership should be considered a behavioural competency rather than a formal managerial position.

The significant positive correlations observed among all teamwork dimensions indicate that teamwork attitudes represent interconnected rather than isolated competencies. Particularly strong relationships between communication, situation monitoring, and mutual support are consistent with the theoretical framework of TeamSTEPPS, in which these competencies function together to enhance team performance and patient safety (2). In addition, Beiboer et al. (21) pointed out that teamwork, informal clinical leadership, and continuous learning among nursing staff contribute to stronger collaboration and improved awareness of patient care processes. Their findings further suggest that experienced healthcare professionals often function as informal leaders who facilitate communication and coordination within clinical teams.

Although statistically significant predictive relationships were identified, the regression models explained only a modest proportion of the variance in teamwork attitudes ($R^2 = 0.072–0.133$). These findings suggest that perceptions of clinical leadership represent only one component that influences teamwork attitudes. Organizational culture, staffing adequacy, workload, institutional support, professional experience, psychological safety, and opportunities for leadership development may also influence teamwork within emergency healthcare settings. The fact that approximately 70% of participants in this study had not received formal clinical leadership training may also partially explain the relatively modest explanatory power of the regression models. This interpretation is consistent with recent literature emphasizing that leadership competencies should be systematically developed through education, mentoring, and organizational support rather than relying solely on professional experience.

Several limitations should be considered when interpreting these findings. First, because the study employed a cross-sectional design, the findings should be interpreted as statistical associations rather than causal relationships. Second, the use of convenience sampling may limit the generalizability of the findings to all emergency healthcare professionals. Finally, participants were recruited exclusively from private hospitals and private ambulance services, and therefore the findings may not fully represent other healthcare settings. Future longitudinal and multicentre studies which involve more diverse healthcare professionals would provide a more comprehensive understanding of the relationship between clinical leadership and teamwork attitudes.

Overall, the findings suggest that clinical leadership is closely associated with more positive teamwork attitudes among emergency healthcare professionals. Developing clinical leadership competencies through structured educational programmes, simulation-based training, and supportive organizational environments may contribute to strengthening teamwork processes and, ultimately, support safer and higher-quality healthcare delivery.

Conclusion

This study examined the relationship between perceptions of clinical leadership and teamwork attitudes among emergency healthcare professionals. The findings indicate that higher perceptions of clinical leadership were consistently associated with more positive teamwork attitudes across all dimensions, including communication, situation monitoring, mutual support, leadership, and team structure. These findings support the proposed research hypotheses and suggest that clinical leadership represents an important organizational factor associated with effective teamwork in emergency healthcare settings.

The measurement model demonstrated satisfactory psychometric properties, with confirmatory factor analysis, convergent validity, discriminant validity, and reliability analyses supporting the validity and reliability of the study instruments. Furthermore, the positive relationships identified among the teamwork dimensions reinforce the multidimensional and interconnected nature of teamwork within healthcare organizations.

Although statistically significant associations were identified, the relatively modest explained variance indicates that teamwork attitudes are also likely influenced by additional organizational and individual factors beyond clinical leadership. Therefore, future studies should consider examining variables such as organizational culture, psychological safety, workload, and leadership training by using longitudinal or experimental research designs to provide stronger evidence regarding these relationships.

Overall, the findings suggest that strengthening clinical leadership competencies through structured education, simulation-based training, and organizational support may contribute to improving teamwork processes in emergency healthcare settings. Investing in clinical leadership development may therefore support safer, more coordinated, and higher-quality healthcare delivery.

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