

Original Article

# Leadership Effectiveness Among Healthcare Managers in Kazakhstan: A Cross-Sectional Study

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## ABSTRACT

**Background:** Leadership effectiveness is a key determinant of organizational performance in healthcare systems. Although leadership styles and emotional intelligence have been widely studied in high-income countries, limited empirical evidence exists within transitional healthcare systems such as Kazakhstan. This study assessed leadership effectiveness among healthcare managers in Kazakhstan and examined associations between leadership effectiveness, leadership styles, and emotional intelligence.

**Methods:** A cross-sectional study was conducted between November 2024 and March 2025 among 77 healthcare managers from medical organizations in Astana and Almaty. Participants were selected using stratified random sampling across managerial levels. Leadership styles were measured using the Multifactor Leadership Questionnaire, emotional intelligence using the Emotional Competency Profiler, and leadership effectiveness using the Management Research Group framework. Reliability and content validity were confirmed. Descriptive statistics and Pearson correlation analysis were performed to examine associations between leadership effectiveness and independent variables.

**Results:** Among the 63 respondents who completed the survey, most reported moderate levels of effectiveness across all dimensions (creating vision, implementing vision, developing followership). Around 62-68% of participants rated their effectiveness as moderate, while approximately 22-33% reported as high. Implementing vision showed the lowest mean score (2.13). Correlation analysis showed that leadership effectiveness was positively associated with transformational ( $r = 0.45$ ,  $p = 0.038$ ) and transactional leadership ( $r = 0.54$ ,  $p < 0.001$ ), as well as emotional intelligence ( $r = 0.57$ ,  $p < 0.001$ ), with emotional intelligence suggesting the strongest relationship. In contrast, no significant association was observed for laissez-faire leadership ( $r = 0.2617$ ,  $p = 0.1076$ ).

**Conclusion:** Leadership effectiveness among healthcare managers in Kazakhstan is positively associated with active leadership styles and emotional intelligence. Strengthening competencies related to vision implementation and emotional intelligence may support leadership development within ongoing healthcare reforms. Further research using larger and more diverse samples is warranted.

**Keywords:** Leadership; Emotional Intelligence; Health Management; Healthcare Systems; Kazakhstan

## Introduction

Leadership is a critical determinant of organizational performance, particularly in healthcare, where effective leadership can drive improvements in patient care, operational efficiency, and team cohesion (1). Research from high-income countries has established the significance of leadership styles such as transformational and transactional leadership in fostering innovation, enhancing motivation, and achieving strategic objectives within medical organizations (2). However, limited evidence exists on how these leadership styles influence outcomes in transitional economies like Kazakhstan, where healthcare systems are undergoing reform (3).

Kazakhstan's healthcare system is at a crossroads, with ongoing efforts to enhance service quality and efficiency (4). Medical organizations face challenges such as resource constraints, workforce shortages, and evolving policy landscapes, necessitating robust leadership to navigate these

complexities. Despite the recognition of leadership's importance, empirical studies assessing leadership effectiveness in Kazakhstan's healthcare context remain scarce, leaving gaps in understanding the associations between leadership styles, emotional intelligence, and leadership effectiveness.

This study aims to evaluate leadership effectiveness among healthcare managers in Kazakhstan's medical organizations. Drawing on existing literature, the research examines the associations between transformational, transactional, and laissez-faire leadership styles, as well as emotional intelligence.

It was hypothesized that transformational leadership, transactional leadership, and emotional intelligence would be positively associated with leadership effectiveness, whereas laissez-faire leadership would be negatively associated with leadership effectiveness.

## Methods

This cross-sectional study was conducted between November 2024 and March 2025 to evaluate leadership effectiveness among healthcare managers in Kazakhstan. Data were collected from medical organizations in Astana and Almaty, two major urban centers representing the country's healthcare leadership landscape. A survey was used to capture quantitative data on leadership styles, emotional intelligence, and leadership effectiveness.

### Sample and Sampling Strategy

The estimated target population consisted of approximately 865 healthcare managers working in medical organizations in Astana and Almaty. Participants were selected using a stratified sampling approach across managerial levels (operational/basic, mid-level, and senior management) to ensure representation across leadership hierarchies. A total of 77 healthcare managers who met the inclusion criteria and agreed to participate were included in the study. The source population comprised healthcare managers working in hospitals, clinics, and health centers in Astana and Almaty.

Inclusion criteria included holding a managerial position in a medical organization in Astana or Almaty and having a minimum of six months of leadership experience. Managers with less than six months of service were excluded from the study. Because not all respondents answered every survey item, analyses were conducted using available data for each variable.

### Data Collection

Data were collected using a survey comprising five sections with a total of 78 questions. The first section included five demographic questions covering age, gender, education, years of service, and current managerial position. The second section contained two general leadership-related questions.

Leadership styles were assessed using a modified 32-question version of the Multifactor Leadership Questionnaire (MLQ), measuring transformational, transactional, and laissez-faire leadership behaviors. Emotional intelligence was measured using a 24-question adapted version of the Emotional Competency Profiler (ECP), covering six domains: emotional literacy, self-esteem, self-management, self-motivation, change resilience, and interpersonal relations. Leadership effectiveness was evaluated using 15 questions adapted from the Management Research Group (MRG) framework, assessing three dimensions: creating vision, implementing vision, and developing followership.

Minor adaptations were made to the instruments to ensure relevance to the local healthcare context while preserving their core structure. The survey was administered in English, Russian, and Kazakh. Basic translation procedures were applied to ensure clarity and consistency across languages.

Responses in the leadership styles, emotional intelligence, and leadership effectiveness sections were measured using a five-point Likert scale ranging from 1 (not at all) to 5 (always), reflecting the frequency with which respondents demonstrated the described

behaviors. Based on the mean scores, effectiveness levels were categorized as low, medium, or high according to predefined scoring criteria.

These instruments were selected based on their established validity and reliability in leadership research and were reviewed prior to analysis. The survey was primarily administered online using the Qualtrics platform.

**Data Analysis**

Data analysis was performed using Stata software (version 18). Descriptive statistics were used to summarize demographic characteristics and overall scores for leadership styles, emotional intelligence, and leadership effectiveness. Pearson correlation analysis was conducted to examine associations between leadership effectiveness, leadership styles and

emotional intelligence. Statistical significance was set at  $p < 0.05$  using a two-tailed test.

As not all respondents completed every survey item, the analytical sample size varied across analyses.

**Ethical Considerations**

Ethical approval for the study was obtained from the Institutional Research Ethics Committee (Ref. Number: 2024Nov#11). Informed consent was obtained from all participants prior to their inclusion in the study. Participants were informed of their right to withdraw at any time without penalty. To ensure confidentiality, all data were anonymized using unique identification codes, and no personal identifiers were used during the data analysis phase. The authors declare no conflicts of interest regarding the publication of this manuscript.

**Results**

**Demographic Characteristics**

The study included 77 healthcare managers from medical organizations in Astana and Almaty. The majority of participants were female (80.52%), while males represented 19.48% of the sample. The age distribution of the participants was relatively even: the sample covered the range from 18 to 60 years and was

divided into four age groups. Regarding educational qualifications, the majority of the participants (36.36%) held a master’s degree, and 19.48% held a doctoral degree, while the remaining participants reported college diplomas, first degrees, or unspecified qualifications. Detailed demographic characteristics are presented in Table 1.

**Table 1. Demographic Characteristics of Healthcare Managers (n = 77)**

Characteristic	n	%
<b>Sex</b>		
Female	62	80.52
Male	15	19.48
<b>Age Group (years)</b>		
18–30	18	23.38
31–40	20	25.97
41–50	19	24.68
51–60	20	25.97
<b>Education Level</b>		
College diploma	9	11.69
Bachelor’s degree	17	22.08
Master’s degree	28	36.36
PhD	15	19.48
Unspecified	8	10.39
<b>Years of Managerial Experience</b>		
1–5 years	15	20.27
6–10 years	13	17.57

Characteristic	n	%
11–15 years	8	10.81
≥16 years	38	51.35
<b>Leadership Role</b>		
Top Leaders	17	22.97
Vice Leaders	6	8.11
Experts	12	16.22
Core Process Coordinators	4	5.41
Other leadership roles	35	47.30

\*Years of managerial experience and leadership role data were available for 74 participants due to missing responses.

Years of service were reported by 74 participants. More than half (51.35%) had 16 years or more of managerial experience, while 20.27% had 1–5 years of experience. Participants occupied various leadership roles, including Top Leaders (22.97%), Vice Leaders (8.11%), Experts (16.22%), Core Process Coordinators (5.41%), and other leadership-related roles (47.30%) (Table 1).

**Leadership Effectiveness**

Among the 63 respondents who completed the leadership effectiveness items, 61.90% rated creating

vision as “Moderate,” 33.33% as “High,” and 4.76% as “Low.” For implementing vision, 68.25% rated effectiveness as “Moderate,” 22.22% as “High,” and 9.52% as “Low.” For developing followership, 63.49% rated it as “Moderate,” 26.98% as “High,” and 9.52% as “Low.” Mean scores indicated a moderate level of effectiveness across all three dimensions, with implementing vision demonstrating the lowest mean score (Mean = 2.13). Detailed distribution of effectiveness levels across dimensions is presented in Table 2.

**Table 2. Leadership Effectiveness Scores by Dimension (n = 63)**

Dimension	Mean	Low n (%)	Medium n (%)	High n (%)
Creating Vision	2.28	3 (4.76)	39 (61.90)	21 (33.33)
Implementing Vision	2.13	6 (9.52)	43 (68.25)	14 (22.22)
Developing Followership	2.17	6 (9.52)	40 (63.49)	17 (26.98)

\*Leadership effectiveness scores were available for 63 participants due to incomplete responses.

Given the study’s primary focus on leadership effectiveness and the limited completeness of responses for the independent variables, the key findings for leadership styles and emotional intelligence are presented through their associations with leadership effectiveness in Table 3.

**Correlation Analysis**

Pearson correlation analysis revealed significant positive associations between leadership

effectiveness and transformational leadership ( $r = 0.4534, p = 0.038$ ), transactional leadership ( $r = 0.5424, p = 0.0004$ ), and emotional intelligence ( $r = 0.5696, p = 0.0002$ ). Emotional intelligence demonstrated the strongest association with leadership effectiveness. Laissez-faire leadership was not significantly correlated with leadership effectiveness ( $r = 0.2617, p = 0.1076$ ) (Table 3).

**Table 3. Pearson Correlation matrix of study variables (n=63)**

Variable	LE	TF	TS	LF	EI
Leadership Effectiveness (LE)	1				
Transformational Leadership (TF)	0.4534* 0.0038	1			
Transactional Leadership (TS)	0.5424*	0.3441*	1		

Variable	LE	TF	TS	LF	EI
	0.0004	0.0166			
Laissez-Faire Leadership (LF)	0.2617 0.1076	-0.0995 0.5056	0.2069 0.1630	1	
Emotional Intelligence (EI)	0.5696* 0.0002	0.2361 0.1275	0.3792* 0.0122	0.0625 0.6904	1

## Discussion

This study provides empirical insights into leadership effectiveness among healthcare managers in Kazakhstan's medical organizations. The findings contribute to the limited body of evidence examining leadership styles and emotional intelligence within transitional healthcare systems and generally align with international research on healthcare leadership.

### Demographic Insights and Gender Disparity

The demographic analysis highlights a predominantly female leadership cohort with high educational attainment and significant professional experience. This aligns with global trends indicating the growing representation of women in healthcare leadership roles (5). A similar pattern is observed in Kazakhstan's healthcare sector, where women represent a substantial proportion of the workforce. According to gender statistics from the Bureau of National Statistics of Kazakhstan, women account for approximately 73% of employees in the health and social services sector, reflecting the strong feminization of healthcare professions in the country (6). However, the underrepresentation of males suggests a need for targeted initiatives to ensure gender balance. Global evidence indicates that healthcare is predominantly female-run but executive-level roles heavily favor men because of structural challenges and cultural norms at work (7). Another study shows that work environments achieve multiple benefits from mentorship programs combined with leadership development programs alongside gender-equity-promoting organizational policies (8).

### Leadership Effectiveness Dimensions

The moderate ratings across leadership dimensions, particularly the relatively lower score for "implementing vision," suggest a need for targeted leadership development interventions. These findings are consistent with previous research among healthcare managers. For example, Teame et al. reported lower performance across key leadership effectiveness domains, including vision creation, implementation of vision, and followership (8). Furthermore, evidence from systematic reviews indicates that leadership effectiveness in healthcare settings is associated with

modest effects and varies depending on healthcare context and leadership characteristics (10). Together, these findings highlight the importance of strengthening leaders' ability to translate strategic objectives into operational practice. Leadership development programs tailored to healthcare organizations may benefit from enhancing competencies in resource allocation, performance monitoring, and the implementation of organizational priorities.

### Leadership Styles and Emotional Intelligence

The observed correlations between leadership effectiveness and transformational (TFL) and transactional (TSL) leadership styles suggest that these leadership approaches are associated with organizational performance.

Transformational leadership enables vision creation and team engagement, while transactional leadership is associated with structured supervision, adherence to organizational procedures, and contingent reward-based management (10). Emotional intelligence (EI), showing the strongest correlation with leadership effectiveness, underscores its importance in decision-making, team cohesion, and conflict resolution. Medical organizations worldwide show that leaders demonstrating emotional intelligence tend to achieve better results with their teams by connecting with various members while handling stakeholder requirements (11).

### Laissez-Faire Leadership

The lack of a significant correlation between laissez-faire leadership and effectiveness reinforces critiques of passive leadership approaches. Previous studies describe laissez-faire leadership as a passive and non-interventionist leadership style that may negatively affect workplace well-being and organizational outcomes (12). In healthcare settings, where timely decision-making, coordination, and accountability are important, such leadership approaches may be less suitable.

### Implications for Kazakhstan's Healthcare System

The study findings have several implications for policy and practice. Leadership training programs, developed in collaboration with key stakeholders like the Ministry of Health and professional associations, are vital. These programs may benefit from transformational and transactional leadership, along with emotional intelligence, to equip leaders with the skills required for modern healthcare challenges. Addressing gender imbalances and workload management through policy reforms might further improve leadership effectiveness.

#### **Comparative International Context**

Globally, countries with robust healthcare systems emphasize leadership development as a cornerstone of healthcare reform. For instance, Finland and the Netherlands have successfully integrated leadership training into broader healthcare strategies to address both operational and strategic challenges (13). Evidence from low- and middle-income settings indicates that structured healthcare leadership training programs strengthen decision-making, resource management, and overall service delivery, contributing to improved health system performance (14). These findings suggest that Kazakhstan may benefit from strengthening structured leadership training programs, enhancing emotional intelligence competencies, and improving the implementation of strategic goals in healthcare organizations.

#### **Strengths and Limitations**

This study offers a comprehensive analysis of leadership effectiveness using a robust cross-sectional design. However, its findings are limited by the relatively small sample size and the focus on two urban centers. The restricted geographical scope prevents complete representation of leadership dynamics in less urban areas of Kazakhstan because they have potentially unique challenges compared to major urban centers. The study collects data from participants who report their perceived abilities in leadership, but these

self-reported assessments might include possible distortions from social desirability bias and common method bias. The low response rate from potentially busy healthcare managers negatively affected sample representativeness.

In addition, the reported sample size varies between 63 and 74 respondents across different tables and analyses due to varying response rates for specific questions in the survey. While the total number of distributed surveys yielded 77 initial responses, not all participants answered every question. The findings may reflect the specific organizational cultures or social structures of these two cities and may not be generalizable to rural areas or other regions of the country. Non-response to particular questions introduces potential bias, as it reflects the challenges of obtaining comprehensive data from potentially busy professionals in leadership roles. This non-response may also skew the results if the characteristics of those who skipped certain questions differ significantly from those who completed them. The findings of this research face challenges due to non-response bias because it reduces study generalization to the population.

Additionally, a cross-sectional study cannot capture how these perceived abilities evolve or whether they translate into long-term behavioral changes. To enhance the robustness of the findings, future studies should use a mixed-method approach such as 360-degree evaluations to mitigate self-reporting bias.

The study hypotheses were partially supported. Transformational leadership, transactional leadership, and emotional intelligence were positively associated with leadership effectiveness. However, the hypothesized negative association with laissez-faire leadership was not supported, as the relationship was not statistically significant and did not demonstrate the expected negative direction.

## **Conclusion**

This study provides critical insights into healthcare managers' leadership effectiveness in Kazakhstan's medical organizations. By assessing leadership dimensions, styles, and emotional intelligence, it identifies areas requiring development. The demographic analysis reveals a predominantly female leadership cohort with advanced educational qualifications and significant experience, highlighting gender distribution patterns within the sampled population. The findings also highlight moderate effectiveness in leadership dimensions, with the "implementing vision" domain requiring targeted interventions.

While this study provides valuable findings, its limitations - including a small sample size and a focus on urban centers - indicate the need for further research. Future studies should expand the sample size, employ longitudinal designs, and include more geographically and demographically diverse populations. Evaluating the impact of leadership development interventions on organizational outcomes would further strengthen the evidence base.

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## Supplementary Files

Supplementary files available from: <https://www.journalehdi.com/supfile/748/EHDI042-Supplementary-Materials-.pdf>

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