



The Impact of Administrative Leadership on the Quality of Maternal and Child Care Services in Yemeni Health Institutions

Submitted in November 2025

Accepted in December 2025

Published Online in December 2025

<https://doi.org/10.64190/abj.1.2.2026.12>

<https://aradojournal.org/>

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Abstract

This study aims to analyze the effect of administrative leadership styles on the quality of maternal and child care services in the Yemeni context, through a case study of the Maternity and Childhood Hospital in Dhamar city. The study adopted a descriptive-analytical, cross-sectional design and used a questionnaire distributed to health workers and women attending maternal and child care services. Data were collected from a sample of both healthcare providers and service recipients. A total of 536 valid questionnaires were included in the statistical analysis. The tool covered four dimensions of administrative leadership (transformational, transactional, empowering, and ethical), in addition to a scale for the quality of maternal and child care services. The results showed that the mean scores of administrative leadership styles and the quality of maternal and child care services fell within the high agreement category. The regression models also indicated a statistically significant positive effect of leadership styles on the quality of maternal and child care services, with a relative advantage for transactional leadership, followed by transformational, ethical, and empowering leadership. The findings suggest that strengthening these leadership practices in hospitals similar to the Maternity and Childhood Hospital in Dhamar could contribute to improving the quality of maternal and child care services in the Yemeni context.

Keywords: Administrative Leadership; Maternal and Child Care Quality; Quality of Health Services; Hospital Management; Yemeni Hospitals.

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Citation: Alshabebi, Arwa Z. A.; Sharhan, Erfak M. M. & Al-hodi, Gamal A. (2026). The Impact of Administrative Leadership on the Quality of Maternal and Child Care Services in Yemeni Health Institutions. *ARADO Business Journal*, 1 (2), 1- 22. <https://doi.org/10.64190/abj.1.2.2026.12>.

Introduction

Effective administrative leadership is a critical factor in the successful functioning of any organization. A good leader plans, organizes, directs, and monitors the organization's work and motivates and commits staff to the organization's goals (Alsmawi & Alsyaghi, 2024; Al-Raimi & Al-Nushmi, 2024). Administrative leadership can be characterized as a leader's ability to influence employees and inspire enthusiasm to get their work done, while creating an environment to help improve employees' performance and improve the work outcomes for the organization (Al-Hamdi et al., 2025; Alrashidi et al., 2023; Liu et al., 2023). In the health sector, the quality of health services connects to people's lives and well-being, directly. Quality incorporates all activities that are preventive, curative, and caring to meet patients' needs, and these needs are prescribed by clear professional standards. Maternal and child care is significant, as it impacts both mothers' health and the future health of children. Maternal and child health encompasses care during pregnancy, child birth and postpartum care, protecting the child, and supporting healthy growth, based on international standards on care quality (Alraimi & Al-Nashmi, 2024; Bhati et al., 2023; Seljemo et al., 2023). The Yemeni Health System has been severely affected for over a decade due to the ongoing conflict in Yemen, causing damage to the health system, shortages of medical supplies and equipment, workers leaving the health system, and big problems in the essential maternal and child healthcare delivery system. The need for effective administrative leadership is imperative to support the provision of high-quality services despite limited resources.

Theoretical Framework and Literature Review

Administrative leadership is considered one of the pivotal elements in the management of health organizations; it is defined as a process of influence exercised by the leader on subordinates in order to direct their efforts voluntarily toward achieving organizational goals with the highest possible degree of efficiency and effectiveness, through clarifying the vision, mobilizing efforts (Alrashidi et al., 2023), and motivating employees to commit to the desired performance standards (Alghamdi & Taybah, 2023; Donabedian, 1988). In this framework, this study focused on four main leadership patterns that are common in the administrative literature, namely: transformational leadership, which is concerned with inspiring employees and building a shared vision for change; transactional leadership, which is based on the exchange of benefits and incentives and linking performance to rewards; empowering leadership, which focuses on delegation of authorities and strengthening employees' autonomy (Aiken et al., 2012); and ethical leadership, which is based on integrity, justice, and respect for professional values in dealing with employees and beneficiaries (World Health Organization, 2016).

Service quality can be enhanced by transformational leadership through motivating healthcare staff, encouraging communication, and promoting a shared vision for mothers and children (Wong & Cummings, 2007; Puni & Hilton, 2020). By strengthening

compliance with clinical procedures, transactional leadership also improves service quality by establishing rewards and accountability and linking performance to outcomes (Puni & Hilton, 2020). Empowering leadership promotes staff participation and autonomy (Wong & Laschinger, 2013). Furthermore, ethical leadership contributes to improvements in service quality by establishing an environment of fairness, respect, and trust among service providers and their clients (Braun et al., 2013). The combination of these leadership styles creates the organizational environment and collectively influences the quality of maternal and child healthcare services. In this study, the administrative leadership styles were measured as perceived by health workers in the Maternity and Childhood Hospital in the city of Dhamar.

Previous Studies

Previous studies from the Yemeni context have highlighted the critical role of administrative leadership in sustaining and improving the quality of healthcare services within a system severely affected by conflict and resource shortages. Alsmawi and Alsyaghi (2024) demonstrated that strategic vigilance and effective administrative oversight significantly enhance service quality in Yemeni hospitals, while Al-Raimi and Al-Nushmi (2024) found that implementing accreditation and patient-centered quality standards depends on strong and accountable leadership capable of maintaining performance under fragile health system conditions. Evidence from Yemen during the conflict further emphasizes this need: Spiegel et al. (2020) showed that maternal, newborn, and child health services are highly vulnerable to systemic disruptions, underscoring the importance of leadership capacity in ensuring continuity of essential care. Complementing this, Mutale et al. (2022) argued that building leadership and managerial capacity is a prerequisite for improving maternal and newborn health services in low- and middle-income countries, a conclusion that aligns closely with Yemen's context of chronic shortages and structural instability.

At the broader Arab and regional level, leadership has also been shown to play a vital role in enhancing organizational performance and staff outcomes. Al-Hamdi et al. (2025) found that ethical leadership strengthens organizational excellence and supports positive employee behaviors in healthcare institutions. In nearby African settings, Adeyemi et al. (2024) reported that leadership style and change-management practices significantly affect job performance among health professionals, while Butt et al. (2023) demonstrated that transformational and transactional leadership positively influence organizational commitment and readiness for change. These studies confirm the importance of leadership in shaping work environments and improving service quality across healthcare systems in the region.

Research from other low-income countries further reinforces these conclusions. Gedif et al. (2018) showed that leadership and supportive organizational structures are associated with higher job satisfaction among healthcare workers in Ethiopia, which in

turn influences service delivery quality. This evidence is particularly relevant to Yemen, where similar constraints such as workforce shortages, heavy workloads, and limited resources characterize the healthcare system.

At the global level, foundational work by Bass and Avolio (1994) established the theoretical basis for transformational and transactional leadership as drivers of organizational effectiveness. Subsequent empirical studies have confirmed these relationships: Wong and Cummings (2007) demonstrated that transformational leadership improves patient outcomes and reduces clinical errors, while Godsey et al. (2020) and Vogel et al. (2015) highlighted the importance of leadership in strengthening communication, staff engagement, and respectful maternal care. Kruk et al. (2018) further emphasized that leadership and governance are essential components of high-quality health systems, especially in fragile contexts similar to Yemen.

Despite the breadth of this literature, few studies have specifically examined administrative leadership within maternal and child healthcare settings, and even fewer have integrated perspectives from both healthcare providers and service recipients. This gap is particularly significant in conflict-affected countries such as Yemen, where leadership practices may have heightened influence due to system fragility, resource scarcity, and the critical importance of maternal and child health services. These limitations highlight the necessity of the present study.

Research Gap

Most previous studies focused on general healthcare services rather than maternal and child health. The majority of empirical research; to date have not examined the combined perspectives of healthcare providers and service recipients in evaluating the impact of administrative leadership on the quality of maternal and child care services on the quality of maternal, and child health services.

Study Significance

This study is significant because it addresses a major gap in Yemen's health research by examining how administrative leadership styles influence the quality of maternal and child care services in Dhamar Governorate an area where no previous empirical work has been conducted under conditions of conflict and severe resource constraints. It is also the first study to integrate the perspectives of both healthcare providers and service recipients, offering a more comprehensive and realistic assessment of service quality than provider-only evaluations typically found in the literature.

By focusing on a major public maternity hospital operating within a fragile health system, the study provides evidence directly relevant to policymakers and administrators seeking to improve maternal and child health outcomes. The findings support the development of targeted leadership strategies that can enhance service delivery, staff performance, and patient experience even in resource-limited environments.

Methodologically, the study contributes a replicable framework for evaluating leadership effects in fragile and conflict-affected settings, thereby supporting future efforts to strengthen resilience in maternal and child health services.

Conceptual Model

Based on the reviewed literature, the conceptual model of the study proposes that the four administrative leadership styles (transactional, transformational, ethical, and empowering) influence the quality of maternal and child care services. Figure 1 illustrates the hypothesized relationships between independent and dependent variables.



Figure 1. Conceptual Model of the Relationship Between Administrative Leadership Styles

Research Problem

Yemen's healthcare system has been severely weakened by more than a decade of conflict, resulting in damaged facilities, shortages of medical supplies and staff, and disruptions to essential maternal and child care services. In Dhamar Governorate, these challenges are particularly evident in the Maternity and Childhood Hospital, the main referral facility for maternal and child health, where limited resources and high service demand place pressure on care quality and operational performance. Despite these conditions, no empirical studies have examined how administrative leadership styles influence the quality of maternal and child care services in this context. This gap raises the central research question: Is there a statistically significant effect of administrative leadership styles on the quality of maternal and child care services at the Maternity and Childhood Hospital in Dhamar?

Study Objectives

This study aims to:

- 1- Assess the perceived levels of administrative leadership styles (transformational, transactional, empowering, ethical) and maternal/child care quality at the Maternity and Childhood Hospital in Dhamar, based on responses from providers and recipients.
- 2- Examine the statistical association between administrative leadership styles and the quality of maternal and child care services based on evaluations from healthcare providers and service recipients.
- 3- Identify the leadership style with the strongest predictive influence on care quality in Yemen's conflict-affected, resource-limited context.
- 4- Provide evidence-based recommendations to improve leadership practices and strengthen maternal and child healthcare delivery in similar fragile settings.

Research Hypotheses

Main Hypothesis

H₁: Administrative leadership styles have a statistically significant positive effect on the quality of maternal and child care services.

Sub-Hypotheses

- **H_{1a}:** Transformational leadership positively affects maternal and child care service quality.
- **H_{1b}:** Transactional leadership positively affects maternal and child care service quality.
- **H_{1c}:** Empowering leadership positively affects maternal and child care service quality.
- **H_{1d}:** Ethical leadership positively affects maternal and child care service quality.

Study Procedures

This study adopted the descriptive analytical method with a cross-sectional design (Cross-sectional), in order to describe and analyze the effect of administrative leadership styles on the quality of maternal and child care services in Yemeni health institutions, through an applied study on the Maternity and Childhood Hospital in the city of Dhamar. This design is appropriate for assessing associations rather than causality, particularly in fragile health contexts such as Yemen.

Study Population and Sample

The study population consists of all workers in the Maternity and Childhood Hospital in the city of Dhamar from among physicians, nurses, and midwives, and all women who attend maternal and child care services in the same hospital during the period of conducting the study. The total study population amounts to 584 individuals, of whom 32 are health workers and 552 are women attending maternal and child care services.

In view of the limited number of workers and the possibility of reaching all members of the population during the data collection period, the entire study population was targeted by distributing the questionnaire to all its members in the Maternity and Childhood Hospital in the city of Dhamar, in an attempt to achieve as complete coverage as possible. The study included two distinct groups healthcare providers and service recipients and service recipients whose responses were later combined in the analytical models to provide a more comprehensive and integrated evaluation of service quality.

It is noted that there is a numerical disparity between the category of health workers and the women attending maternal and child care services, a disparity that reflects the actual reality of health institutions in Yemen, which suffer from limited human and material capabilities and low numbers of health personnel compared to the volume of demand for services, and is not the result of bias in the selection of

the study population or its sample. This numerical disparity reflects the natural structure of maternal and child healthcare services, where the number of beneficiaries is typically much larger than the number of healthcare providers.

As shown in Table No. (1) the distribution of the study population in the Maternity and Childhood Hospital in the city of Dhamar:

Table No. (1): Distribution of the Study Population and Number of Distributed Questionnaires

Name of Hospital	Health sector workers (physicians, nurses, midwives)	Attendees of maternal and child care services	Total distributed questionnaires
Maternity and Childhood Hospital in Dhamar City	32	552	584

Distributed Questionnaires and Response Rate

A total of (584) questionnaires were distributed to the members of the study population at the Maternity and Childhood Hospital in the city of Dhamar. A number of (536) questionnaires valid for statistical analysis were retrieved, so that the number of questionnaires actually used in the analysis became (536) questionnaires, and thus the response rate reached about (91.8%) of the total distributed questionnaires, which is a high response rate that reflects a good level of cooperation of the members of the population with the researchers.

Time Period for Data Collection

The data of this study were collected in the field during the period from January 2023 to April 2023, which is a period that reflects the usual situation of the provision of maternal and child care services at the Maternity and Childhood Hospital in the city of Dhamar, without any fundamental organizational changes occurring that might affect the administrative leadership styles or the level of quality of services during the period of implementation. No major administrative or organizational disruptions occurred during the data collection period that could have significantly affected leadership practices or service quality levels.

Study Instrument

This study relied on a questionnaire prepared by the researchers, based on the literature and previous studies related to administrative leadership styles and the quality of maternal and child care services. Two separate questionnaires were used in this study: one designed for healthcare providers to assess leadership styles and perceived service quality from the provider perspective, and another designed for service recipients (mothers) to evaluate the quality of maternal and child care services from the beneficiary perspective. Although both instruments measured the quality of maternal and

child care services, the wording of the quality items was adapted to suit each group. The questionnaire in its final form consisted of (30) items distributed over two main axes:

Independent variable: administrative leadership styles, and it includes four sub-dimensions, with (5) items for each dimension, as follows:

- First dimension: transformational leadership (5 items)
- Second dimension: transactional leadership (5 items)
- Third dimension: empowering leadership (5 items)
- Fourth dimension: ethical leadership (5 items) Thus, the total number of items for administrative leadership styles is (20) items.

Dependent variable: quality of maternal and child care services, and it consists of (10) items that measure the dimensions of the quality of maternal and child care services as perceived by the beneficiaries and health workers.

A five-point Likert scale was used to measure the responses of the sample members, where the answer alternatives were coded as follows:

(1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

To verify the validity and reliability of the instrument, the questionnaire in its preliminary form was presented to a number of referees specialized in health administration, nursing, and statistics, in order to ensure the suitability of the items, the soundness of their linguistic formulation, and the extent of their relation to the axes of the study, and the amendments proposed by them were incorporated. Providers evaluated clinical and administrative aspects of care, whereas mothers evaluated interpersonal communication, responsiveness, privacy, and overall service experience. Construct validity and reliability were also verified using correlation coefficients and Cronbach's alpha coefficient.

Validity of the Questionnaire

After verifying the results of the pilot sample by examining internal consistency, construct validity was used for all items of the instrument, by checking the extent of the correlation of each sub-dimension with the total score of the axis to which it belongs, and then the extent of the correlation of each sub-dimension and each axis (the independent variable and the dependent variable) with the total score of the scale. The statistical results showed the presence of correlation coefficients that are statistically significant at the significance level ($\alpha \leq 0.05$), and most of them are significant at a more stringent level ($\alpha \leq 0.01$), As shown in Table No (2).

Table No. (2) shows that the correlation coefficients between the sub-dimensions of the administrative leadership axis and the total score of the axis, as well as between these dimensions and the total score of the study scale, were all statistically significant at the significance level ($\alpha \leq 0.05$), and most of them were significant at the level ($\alpha \leq 0.01$). It is noted that the correlation of the first dimension (transformational leadership) with the total score of the scale reached ($r = 0.383$, Sig = 0.031), which is

significant at the level ($\alpha \leq 0.05$), whereas the remaining correlation coefficients were at the level ($\alpha \leq 0.01$). Accordingly, the sub-dimensions and the two axes of the independent variable and the dependent variable can be considered to have acceptable construct validity for the purposes of this study. It is important to note that validity was assessed separately for the two questionnaires because the constructs were measured from different perspectives (providers vs. recipients), which helps minimize bias resulting from combining distinct response groups.

Table No. (2): Construct Validity of the Study Variables

Study Variables	Correlation coefficients between the score of each sub-dimension and the total score of the axis		Correlation coefficients between the score of each sub-dimension and overall and the total score of the scale	
	Pearson correlation coefficient	Probability value (Sig.)	Pearson correlation coefficient	Probability value (Sig.)
Independent variable: administrative leadership styles			0.951**	0.000
First dimension: transformational leadership	0.649**	0.000	0.383*	0.031
Second dimension: transactional leadership	0.698**	0.000	0.731**	0.000
Third dimension: empowering leadership	0.541**	0.001	0.682**	0.000
Fourth dimension: ethical leadership	0.770**	0.000	0.745**	0.000
Dependent variable: quality of maternal and child care services			0.493**	0.000

Table prepared by the researchers based on (SPSS) outputs.

*Correlation is significant at the 0.05 level (2-tailed).

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

Reliability of the Questionnaire

Table No. (3): Cronbach's Alpha Reliability Coefficient for the Study Variables.

Study Variables	N of Items	Cronbach's Alpha
Independent variable: administrative leadership styles	20	0.871
First dimension: transformational leadership	5	0.902
Second dimension: transactional leadership	5	0.896
Third dimension: empowering leadership	5	0.903
Fourth dimension: ethical leadership	5	0.905
Dependent variable: quality of maternal and child care services	10	0.876
Total variables	6	0.915

Table: prepared by the researchers based on (SPSS) outputs.

To measure the reliability of the instrument, Cronbach's Alpha coefficient was used for the study variables and their dimensions. The results showed that the values of the reliability coefficient for the independent variable and its four dimensions were at a high level, and the reliability coefficient for the scale of the quality of maternal and

child care services reached (0.876), which is considered an indicator of good internal consistency for the items of the scale and supports the reliability of the results obtained in this study. The high reliability values across both questionnaires support the decision to include responses from both groups in the subsequent analytical models. As shown in Table No (3).

Statistical Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics (frequencies, percentages, means, standard deviations, and relative importance) were used to identify the general levels of administrative leadership patterns and the quality of maternal and child care services. Preliminary descriptive and reliability analyses were conducted separately for healthcare providers and service recipients to account for the differences between the two groups. Construct validity was examined by calculating Pearson correlation coefficients between the sub-dimensions and their corresponding axes, as well as between the main variables and the total scale score, while the internal consistency reliability of the instrument and its dimensions was assessed using Cronbach's Alpha coefficient. Before the sentence: However, for hypothesis testing and regression modeling, the data from both groups were combined to obtain a comprehensive assessment of service quality.

For hypothesis testing, simple linear regression models were employed to estimate the effect of the overall index of administrative leadership patterns and each of its four sub-dimensions (transformational, transactional, empowering, and ethical leadership) on the quality of maternal and child care services. The general form of the regression model used in this study can be expressed as:

Four sub-hypotheses were derived from the main hypothesis, representing the dimensions of administrative leadership (transformational, transactional, empowering, and ethical). For the purpose of testing these hypotheses, simple linear regression was used, according to the following general form of the regression model:

$$Y_i = \beta_0 + \beta_1 X_i + u_i \quad (1)$$

Where:

- Y_i represents the total score of the quality of maternal and child care services for individual i .
- X_i represents the total score of the independent variable (or one of its sub-dimensions, such as transformational, transactional, empowering, or ethical leadership).
- β_0 is the intercept of the regression model.
- β_1 expresses the effect of administrative leadership on the quality of maternal and child care services.
- u_i is the random error term.

The total score of maternal and child health service quality for the individual, x_i represents the total score of the independent variable (or one of its sub-dimensions), β_0 represents the intercept, β_1 represents the independent variable coefficient, and u_i represents the random error term. The level of statistical significance was measured at the .05 level (the null hypothesis was rejected when the p-value was $\leq .05$), while the stronger associations were deemed significant at the .01 level (the null hypothesis was rejected when the p-value was $\leq .01$) when relevant. In the regression models, overall model significance was assessed through the F-test, regression coefficient significance through t-tests, and model fit through the coefficient of determination (R^2 and adjusted R^2 measures). The Durbin–Watson statistic was also used to test the independence of residuals, and ensure that the assumptions of the regression models were reasonably met. Combining responses from two distinct groups introduces a methodological limitation, as providers and recipients may differ in their perceptions of service quality; this limitation is acknowledged and discussed in the study’s discussion section.

Results and their Discussion

Descriptive Results (Determining the General Level)

The two researchers carried out a number of descriptive statistical analyses of the data collected from the study sample, using the Statistical Package for the Social Sciences (SPSS), where frequencies, percentages, arithmetic means, and standard deviations were calculated, in addition to the relative importance and degree of agreement for each axis of the questionnaire. This part aims to identify the general level of administrative leadership styles leadership with their different dimensions, and the level of quality of maternal and child care services in the Maternity and Childhood Hospital in the city of Dhamar.

Table No. (4): Arithmetic means, standard deviations, relative importance, and degree of agreement for The Study Variables

Variable	Mean	Standard deviation	Relative importance	Degree of agreement
Overall index: transformational leadership	4.28	0.682	85.6%	Very high
Overall index: transactional leadership	4.17	0.822	83.4%	High
Overall index: empowering leadership	3.92	0.803	78.4%	High
Overall index: ethical leadership	4.15	0.825	83.0%	High
Overall index of the dependent variable scale: quality of maternal and child care services	4.58	0.420	91.6%	Very high

Table prepared by the researchers based on SPSS program outputs.

It is clear from Table No. (4) that the arithmetic means of the overall index of the quality of maternal and child care services reached (4.58) with a standard

deviation of (0.420) and a relative importance of (91.6%), which indicates that the sample members from the women attending maternal and child care services at the Maternity and Childhood Hospital in the city of Dhamar perceive the level of quality of the services provided to them as very high according to the five-point Likert scale. The results also show that the arithmetic means of the dimensions of the independent variable (administrative leadership styles) range between (3.92) and (4.28), which are values that fall within the category of high to very high degree of agreement, which reflects a positive level of transformational, transactional, empowering, and ethical leadership patterns as perceived by the workers and beneficiaries.

Results of Regression Models for Testing the Study Hypotheses

In light of the study problem and its objectives, the main hypothesis was formulated as follows:

Main Hypothesis

There is a statistically significant effect of the administrative leadership styles on the quality of maternal and child care services in Yemeni health institutions (an applied study on the Maternity and Childhood Hospital in the city of Dhamar).

Based on the overall index of administrative leadership patterns, the overall model of the relationship between administrative leadership patterns and the quality of maternal and child care services can be represented in the following symbolic form:

$$Y = \beta_0 + \beta_1 X \tag{2}$$

Where Y represents the total score of the quality of maternal and child care services, and X represents the total score of the general index of administrative leadership patterns, and the value of β_1 estimated in Table 5 indicates the size and direction of the effect of administrative leadership patterns on the quality of services.

Table No. (5): Results of the Regression Models for Testing the Study Hypotheses

Dependent Variable	Model Power		Analysis of Variance		Regression Coefficients			
	R ²	R-2	F	Sig	B	β	T	Sig
Quality of Maternal and Child Care Services	.424	.419	82.33	.000b	X	.566	16.859	.000b
	.298	.296	190.94	.000b	X1	.481	13.818	.000b
	.389	.388	286.86	.000b	X2	.456	16.937	.000b
	.197	.195	110.30	.000b	X3	.332	10.503	.000b
	.238	.237	140.73	.000b	X4	.356	11.863	.000b

Dependent variable: **Quality of maternal and child care services**

D.W bounds: **dl = 1.748, du = 1.789**

D.W = **1.817**

The table was prepared by the researchers based on the outputs of the SPSS program. The F values reported in the table indicate their statistical significance at the significance level ($\alpha \leq 0.05$), with probability values less than 0.001 ($p < 0.001$) in all models.

The results of the overall model indicate that the value of the coefficient of determination ($R^2 = 0.424$) and the adjusted coefficient of determination (Adjusted $R^2 = 0.419$) show that the administrative leadership styles leadership explain approximately (41.9%) of the variance in the quality of maternal and child care services in the hospital under study, while the remaining percentage is due to other factors and variables that were not included in the study model, in addition to random error.

The proportion of explained variance (about 41.9%) can be considered a moderate proportion in social science research, which indicates that administrative leadership styles represent a main and important factor, but not the only factor determining the quality of maternal and child care services.

The value of the Durbin–Watson statistic (1.817) also lies within acceptable limits and does not indicate the presence of a substantial autocorrelation among the residuals. The standardized Beta coefficient ($\beta = 0.566$) shows that an increase of one unit in the total score of administrative leadership styles is associated with an increase of (0.566) in the total score of service quality, which is a highly statistically significant association ($T = 16.859, p < 0.001$).

From a theoretical point of view and based on the sample size used in this study (536 questionnaires valid for analysis) and a medium effect size ($f^2 \approx 0.15$) in a simple regression model, standard statistical calculations indicate that the statistical power in this context is very high (usually exceeding 0.99), which supports the adequacy of the sample size for testing the hypotheses under study.

The sub-dimensions of administrative leadership indicate that transactional leadership represents the pattern most capable of explaining the variance in the quality of maternal and child care services ($R^2 = 0.389, \beta = 0.456, p < 0.001$), followed by transformational leadership ($R^2 = 0.298, \beta = 0.481, p < 0.001$), then ethical leadership ($R^2 = 0.238, \beta = 0.356, p < 0.001$), and finally empowering leadership ($R^2 = 0.197, \beta = 0.332, p < 0.001$). This means that all four dimensions contribute statistically and with a high level of significance to explaining the change in service quality, with a relative superiority of transactional leadership, which supports the four sub-hypotheses of the study at the significance level ($\alpha \leq 0.05$).

Based on the estimated regression coefficients in Table (5), the equations of the simple regression models for the sub-dimensions can be written as follows:

- Equation of the transformational leadership model (X1):

$$Y = 2.191 + 0.481X_1 \quad (3)$$

- Equation of the transactional leadership model (X2):

$$Y = 2.349 + 0.456X_2 \quad (4)$$

- Equation of the empowering leadership model (X3):

$$Y = 2.949 + 0.332X_3 \quad (5)$$

- Equation of the ethical leadership model (X4):

$$Y = 2.775 + 0.356X_4 \quad (6)$$

Where Y represents the total score of the quality of maternal and child care services, and X1, X2, X3, and X4 represent the total scores of the four sub-dimensions of the administrative leadership styles leadership. Equations (3)– (6) show that all dimensions have a positive effect on the quality of services, with a difference in the strength of this effect according to the value of the regression coefficient in each model. Based on the significance of the overall model and the positive and statistically significant Beta coefficient, the main hypothesis is accepted, which states that there is a statistically significant effect of the administrative leadership styles leadership on the quality of maternal and child care services in Yemeni health institutions (an applied study on the Maternity and Childhood Hospital in the city of Dhamar). The four sub-hypotheses are also accepted, as the results showed a statistically significant effect for each of transformational leadership, transactional leadership, empowering leadership, and ethical leadership on the quality of maternal and child care services at the significance level ($\alpha \leq 0.05$, $p < 0.001$). Although the regression results indicate a statistically significant effect and positive correlation relationships between the administrative leadership styles leadership and the quality of maternal and child care services in the hospital under study, the cross-sectional design of the study and its reliance on self-reported data do not allow for establishing a definitive causal relationship, and the generalization of the results should be done cautiously to other health institutions. These results can be used as indicative in institutions that share similar organizational and contextual characteristics with the Maternity and Childhood Hospital in the city of Dhamar. The results of the methodological section also show that the reliability coefficient (Cronbach's Alpha) for the scale of the quality of maternal and child care services reached (0.876), which is a value that indicates a high level of reliability of the measurement instrument, thereby enhancing the reliability of the results related to this variable, with the need to interpret them within the framework of the nature of the cross-sectional design and the reliance on self-reported data.

Discussion of the Results

The results of the study show that all the administrative leadership styles examined contribute significantly to explaining the variance in the quality of maternal and child care services, with transactional leadership ($R^2 = 0.389$) coming first, followed by transformational, then ethical, and finally empowering leadership. Although the overall perceived quality level was high, this finding should be interpreted with caution given Yemen's fragile health context. Low expectations in crisis settings, limited alternatives, and reliance on essential services often lead beneficiaries to rate available care more positively than would be expected in stable systems. This tendency may be reinforced by the fact that the Maternity and Childhood Hospital in Dhamar is the main referral

facility in the governorate, leaving service recipients with few alternative providers and increasing the likelihood of higher satisfaction ratings, the limited availability of alternative healthcare providers, and the reliance on essential services that remain functional despite resource shortages. These conditions often lead recipients to rate available services more positively than would be expected in stable health systems.

This order can be interpreted in light of the Yemeni context, in which health institutions are characterized by limited resources, weak infrastructure, and a continuous need for clear material and moral incentives; a situation that makes transactional leadership practices such as clarity of expectations, linking performance to rewards, and continuous monitoring a decisive factor in shaping the perceptions of workers and beneficiaries regarding the quality of the services provided. Similar patterns have been reported in studies conducted in other conflict-affected or resource-scarce settings, such as Syria and Somalia, where transactional leadership proved more effective in ensuring compliance, minimizing errors, and maintaining minimum service standards under unstable working conditions.

At the same time, the positive effect of both transformational and ethical leadership reflects the importance of having a shared vision, inspiring employees, and consolidating the values of integrity, responsibility, and justice in dealing with beneficiaries and health staff, while it appears that the effect of empowering leadership, despite its statistical significance, is influenced by administrative and organizational constraints and the limited delegation of authority in many Yemeni health institutions, in addition to work pressure and scarce resources, which restrict the implementation of full empowering practices at frontline levels. This is consistent with previous international research showing that empowering leadership tends to be less influential in highly hierarchical systems, especially where decision-making authority is centralized and frontline workers have limited autonomy due to shortages of staff, resources, and training. These findings are also supported by regional evidence from Arab health systems, where several studies have highlighted the role of supportive and value-based leadership in improving the quality of healthcare services.

Madlol (2022) showed that supportive administrative leadership and an appropriate work environment contribute to improving the patient experience. Likewise, Al-Maqbali et al. (2025) highlighted the contribution of transformational leadership to raising the quality of health services, while Naicker et al. (2025) reported the positive effect of ethical leadership behavior. Additionally, Mo'mina (2022) confirmed the role of human resource management, training, and motivation in upgrading the quality of maternal and child health services.

Furthermore, the present results align with international literature on health systems in low- and middle-income countries. Gupta et al. (2023) affirmed that improving maternal and child health outcomes is linked to the presence of effective leadership, good governance, clear accountability arrangements, and systematic qual-

ity management practices. In a similar vein, Thanh et al. (2022) emphasized the need for building leadership and management capacity for maternal and newborn health in resource-constrained settings. Evidence from studies conducted in Yemen also supports this view: Naicker et al. (2025) and Alilyyani et al. (2024) provided empirical evidence showing how quality standards and total quality management can help improve healthcare service quality. In conflict-affected contexts similar to Yemen, Sallam and Al-hakimi (2025) and Al-Ma'mari and Hamzah (2024), as well as Al-Samaat and Al-Syaghi (2024), showed that damage to health infrastructure, shortages of qualified staff, and disruptions in supply chains require health leaders to adopt flexible and participatory leadership approaches to maintain continuity of services and ensure acceptable healthcare quality.

. It is important to emphasize that the cross-sectional nature of the study limits the ability to infer causal relationships. The findings indicate statistical associations rather than definitive causal effects between leadership practices and service quality.

Taken together, these converging findings suggest that the Yemeni context requires a hybrid leadership approach that combines clear expectations and incentives with a shared vision and professional values, alongside the gradual empowerment of staff, in order to sustain and improve the quality of maternal and child care services under conditions of protracted crisis and limited resources, which is consistent with the conclusions of previous studies.

Conclusions

In light of the objectives of the study and the results of the descriptive and inferential analyses, the most important conclusions can be summarized as follows:

The results showed that the level of both administrative leadership styles and the quality of maternal and child care services at the Maternity and Childhood Hospital in the city of Dhamar fell within the category of high agreement, which reflects a relatively positive perception of leadership practices and of the quality of services provided to mothers and children in the hospital under study. It was found that there is a statistically significant relationship between the total score of administrative leadership styles and the total score of the quality of maternal and child care services, such that a higher level of leadership practices is associated with a higher level of perceived quality of health services.

The study showed that all sub-dimensions of administrative leadership (transformational, transactional, empowering, ethical) are positively associated with the quality of maternal and child care services, with a relative superiority of transactional leadership, followed by transformational, then ethical, and finally empowering leadership. This indicates that combining these styles and employing them in an integrated manner can represent a practical approach to improving the quality of health care for moth-

ers and children in similar settings. However, these findings should be interpreted as correlations rather than causal effects, due to the cross-sectional design of the study.

Recommendations

Recommendations for Improvement Based on Findings The following are the proposed key recommendations for improving maternal and child health services based on study findings:

- 1- Strengthen leadership capacity through national training programs, improve staffing and resource allocation for the effective leadership of maternal and child health facilities.
- 2- Enhance transactional leadership (clear expectations, monitoring, and accountability); develop Transformational and Ethical Leadership through targeted training; and introduce empowerment gradually to identify & solve problems with the support of leadership. Improving human and material resources is essential to support the leadership effectiveness of the facility.
- 3- Participate in leadership and communication training, and engage in shared decision-making and quality improvement initiatives.
- 4- Leaders & Staff should establish an implement structured patient-feedback systems to ensure that beneficiaries' perspectives inform continuous quality improvement for Continuous Quality Improvement purposes.
- 5- Use longitudinal or mixed-method designs to strengthen causal inferences, expand studies to multiple governorates, and develop tools that distinguish between provider and recipient assessments of service quality of Service Quality.

Limitations and Future Suggestions

This study is limited to a single hospital in Dhamar Governorate, which restricts the possibility of generalizing its results to all health institutions in Yemen, and makes it more appropriate for institutions that share similar organizational and contextual characteristics with the hospital under study. The study also relied on a descriptive cross-sectional design and on self-administered questionnaires, which may expose the results to some forms of bias, such as the desire to present a positive image of the hospital's performance and the quality of its services.

Two separate groups of respondent service providers and service recipients evaluated the quality of maternal and child care services. may introduce variability in evaluating care quality. The significant disparity in the number of respondents per group (552 recipients versus 32 providers) could disproportionately influence the aggregated results. The quality items were intended to be assessed by both groups; however, they could disproportionately influence the aggregated results.

In light of the above, it is suggested that future studies expand the scope of research to include other hospitals and health facilities in different governorates, and use mixed methods to deepen understanding and reduce the impact of potential biases, in addition to continuing to develop more precise measures for assessing the quality of maternal and child care services, and exploring the effect of other factors such as the level of funding, availability of medical technology, and the implementation of accreditation and quality programs in improving services.

Acknowledgements

This study was conducted under the supervision of Dr. Erfak Mohammed Musaed Sharhan. The authors would like to express their sincere gratitude for his valuable guidance and continuous support throughout all stages of this research.

References

- Adeyemi, B. A., Ebegbetale, C. I., & Showemimo, I. O. (2024). Leadership style, change management and job performance of health information management practitioners in tertiary hospitals in South-East, Nigeria. *Leadership in Health Services*, 37(4), 461–476. <https://doi.org/10.1108/LHS-03-2024-0026>
- Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., Sermeus, W. (2012). Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*, 344, e1717. <https://doi.org/10.1136/bmj.e1717>
- Alghamdi, H. A., & Taybah, H. T. (2023). The impact of administrative leadership on the performance of patient experience management: A field study on administrative employees in the Directorate of Health Affairs in Jeddah Governorate. *Arab Journal of Administration*, 43(3), 185-206. <https://doi.org/10.21608/AJA.2023.218789.1473>
- Al-Hamdi, A., Al-Selmi, A., Al-Maqtari, M., & Othman, M. (2025). Ethical leadership and organizational excellence: The mediating role of organizational citizenship behavior in healthcare institutions. *Humanities and Social Sciences Communications*, 12(1), 1-12. <https://doi.org/10.1057/s41599-025-05743-6>
- Alilyyani, B., Wong, C. A., & Cummings, G. G. (2024). The global power of transformational leadership in nursing and midwifery. *International Journal of Nursing Studies*, 151, 104684. <https://doi.org/10.1016/j.ijnurstu.2024.104684>
- Al-Ma'mari, A. A., & Hamzah, A. A. (2024). The impact of the implementation of the comprehensive quality management system on the improvement of health services in government hospitals in the city of Marib. *Journal of Scientific Development for Studies and Research*, 5 (20), 68-89. <https://doi.org/10.61212/jسد/270>
- Al-Maqbali, M., Al-Farsi, Y., Al-Hosni, A., & Al-Harhi, M. (2025). Enhancing occupational health and safety through strategic leadership and total quality management in Omani hospitals. *Risk Management and Healthcare Policy*, 18, 199-212. <https://doi.org/10.2147/RMHP.S452345>
- Alraimi, A. A., & Al-Nashmi, M. M. (2024). The interactive effect of the application of accreditation standards (JCI) and the practice of administrative control in improving the quality of health services: A study on Yemeni hospitals. *BMC Health Services Research*, 24, 1403. <https://doi.org/10.1186/s12913-024-11894-0>
- Al-Raimi, A. A., & Al-Nushmi, M. M. (2024). The impact of implementing patient-centered accreditation standards of the Joint Commission International (JCI) on improving the quality of health services: A field study on some Yemeni hospitals. *Sana'a University Journal of Humanities*, 1(2), 770-792. <https://doi.org/10.59628/jhs.v1i2.655>

- Alrashidi, N., Alghamdi, A., & Alshehri, M. (2023). The impact of transformational leadership in the nursing work environment and patients' outcomes: A systematic review. *Nursing Reports*, 13(3), 1271–1290. <https://doi.org/10.3390/nursrep13030108>
- Alsmawi, A. A., & Alsyaghi, A. A. (2024). The impact of strategic vigilance on the quality of health services: A field study in a sample of private hospitals in the Capital Secretariat. *Sana'a University Journal of Humanities*, 3(1), 459-496. <https://doi.org/10.59628/jhs.v3i1.900>
- Al-Samaat, I. A., & Al-Syaghi, A. Q. (2024). The impact of organizational development on the performance level of health facilities: A field study on private hospitals classified (A) in the Capital Secretariat. *Sana'a University Journal of Humanities*, 3(1), 197-235. <https://doi.org/10.59628/jhs.v3i1.797>
- Bass, B. M., & Avolio, J. B. (1994). *Improving organizational effectiveness through transformational leadership*. SAGE Publications.
- Bhati, D., Deogade, M. S., & Kanyal, D. (2023). Improving patient outcomes through effective hospital administration: A comprehensive review. *Cureus*, 15, 47731. <https://doi.org/10.7759/cureus.47731>
- Braun, S., Peus, C., Weisweiler, S., & Frey, D. (2013). Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *The Leadership Quarterly*, 24 (1), 270–283. <https://doi.org/10.1016/j.leaqua.2012.11.006>
- Butt, N., Afzal, S. M. N., Aslam, R. A., & Ali, S. (2023). Impact of transformational leadership and transactional leadership on commitment to change: Moderating role of organizational culture. *Pakistan Journal of Humanities and Social Sciences*, 11(2), 2015-2025. <https://doi.org/10.52131/pjhss.2023.1102.0497>
- Donabedian, A. (1988). The quality of care: How can it be assessed? *Journal of the American Medical Association*, 260 (12), 1743-1748.
- Gedif, G., Sisay, Y., Alebel, A., & Belay, Y. A. (2018). Level of job satisfaction and associated factors among health care professionals working at University of Gondar Referral Hospital, Northwest Ethiopia: A cross-sectional study. *BMC Research Notes*, 11(1), 824. <https://doi.org/10.1186/s13104-018-3918-0>
- Godsey, J., Perrott, B., & Hayes, T. (2020). Can brand theory help re-position the brand image of nursing? *Journal of Nursing Management*, 28(4), 968-975. <https://doi.org/10.1111/jonm.13003>
- Gupta, S. D., Sharma, S. K., Kumar, S., Sharma, N., & Jain, A. (2023). Self-assessment of public healthcare facility in conformity with accreditation guidelines for quality services. *Journal of Health Management*, 25(2), 156-161. <https://doi.org/10.1177/09720634231175750>

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- Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., Wagstaff, A. (2018). High-quality health systems in the sustainable development goals era. *The Lancet Global Health*, 6 (11), e1196-e1252. [https://doi.org/10.1016/S2214-109X\(18\)30303-9](https://doi.org/10.1016/S2214-109X(18)30303-9)
 - Liu, H. C., Liu, R., Gu, X., & Yang, M. (2023). From total quality management to quality 4.0: A systematic literature review and future research agenda. *Frontiers of Engineering Management*, 10 (2), 191-205. <https://doi.org/10.1007/s42524-022-0243-z>
 - Madlol, G. T. (2022). The role of electronic administration in improving administrative work: An exploratory study on the public health sector in Iraq. *Humanities & Natural Sciences Journal*, 3 (2), 651-665. <https://doi.org/10.53796/hnsj3236>
 - Mo'mina, A. M. (2022). Evaluation of the use of health applications by outpatients and primary healthcare center visitors in Riyadh. *Journal of Information Studies and Technology*, 2022 (2), 12. <https://doi.org/10.5339/jist.2022.12>
 - Mutale, W., Scott, L., Mathias, L., & Ritter, H. (2022). Building leadership and managerial capacity for maternal and newborn health services in low- and middle-income countries: A scoping review. *BMC Medical Education*, 22 (1), 1-15. <https://doi.org/10.1186/s12909-022-03766-1>
 - Naicker, S., Pillay, D., & Daniels, K. (2025). Family systems care approaches and methodologies for maternal, newborn, and child health in low and middle-income countries: A scoping review. *Global Health Action*, 18 (1), 2304567. <https://doi.org/10.1080/16549716.2025.2304567>
 - Puni, A., & Hilton, S. K. (2020). Dimensions of authentic leadership and patient care quality. *Leadership in Health Services*, 33 (4), 365-383.
 - Sallam, F., & Alhakimi, W. (2025). Strategic leadership practices and organisational performance at healthcare organisations: The mediating role of crisis management. *International Journal of Business Performance Management*, 26 (4), 513-532. <https://doi.org/10.1504/IJBPM.2025.147167>
 - Seljemo, C., Hystad, S. W., & Bjørk, I. T. (2023). Quantitative systematic review of transformational leadership and nurses' work engagement. *Journal of Advanced Nursing*, 79 (3), 914-928. <https://doi.org/10.1111/jan.15548>
 - Spiegel, P. B., Checchi, F., Colombo, S., & Paik, E. (2020). Reproductive, maternal, newborn and child health service delivery during conflict in Yemen: A case study. *Conflict and Health*, 14 (1), 30. <https://doi.org/10.1186/s13031-020-00269-x>

- Thanh, N., Hoang, T., & Nguyen, V. (2022). Patient satisfaction with healthcare service quality and its associated factors at one polyclinic in Hanoi, Vietnam. *International Journal of Public Health*, 67, 1605055. <https://doi.org/10.3389/ijph.2022.1605055>
- Vogel, J. P., Bohren, M. A., Tunçalp, Ö., Oladapo, O. T., Adanu, R. M., Baldé, M. D., WHO Research Group. (2015). How women are treated during facility-based childbirth: Development and validation of measurement tools. *Reproductive Health*, 12 (1), 60. <https://doi.org/10.1186/s12978-015-0047-2>
- Wong, C. A., & Cummings, G. G. (2007). The relationship between nursing leadership and patient outcomes: A systematic review. *Journal of Nursing Management*, 15 (5), 508-521. <https://doi.org/10.1111/j.1365-2834.2007.00723.x>
- Wong, C. A., & Laschinger, H. K. S. (2013). Authentic leadership, performance, and job satisfaction: The mediating role of empowerment. *Journal of Advanced Nursing*, 69 (4), 947–959. <https://doi.org/10.1111/j.1365-2648.2012.06089.x>
- World Health Organization. (2016). *Standards for improving quality of maternal and newborn care in health facilities*. WHO.