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The Role of Transformational Leadership in Improving Service Quality at Ophthalmology Clinics

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Abstract

Purpose: This systematic review examines the influence of transformational leadership on service quality in ophthalmology clinics, focusing on key metrics such as clinical accuracy, efficiency, and technological adoption.

Research Methodology: A comprehensive search was conducted across PubMed, Scopus, and Web of Science for peer-reviewed studies (2010–2024) linking TL to service quality in ophthalmology or analogous specialty clinics. Data were synthesized thematically, and findings were assessed for consistency and applicability using the PRISMA guidelines.

Results: Preliminary analysis indicates that TL positively impacts service quality through (1) staff motivation to adhere to clinical protocols, (2) fostering innovation in diagnostic technologies, and (3) optimizing operational workflows to reduce delays. However, evidence specific to ophthalmology remains limited, highlighting the research gap.

Conclusions: These findings on how transformational leaders foster a work environment centered on learning, innovation, and collaboration align with the demands of modern value-based healthcare, which requires the integration of technical excellence and patient experience

Limitations: The limitations of this systematic review include potential inconsistencies due to varying definitions and measurements of transformational leadership and service quality, possible publication bias from relying solely on available published literature, restricted generalizability beyond ophthalmology clinics, and the challenge of drawing universal conclusions due to differing cultural and organizational contexts across studies.

Contributions: This study specifically focuses on ophthalmology, providing insights relevant to eye care administrators. This study bridges the gap between general leadership theory and its practical application in high-demand clinics.

Keywords: *Ophthalmology, Systematic Review, Service Quality, Transformational Leadership*

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1. Introduction

The quality of service in ophthalmology clinics critically impacts treatment outcomes and patient satisfaction, with key factors including diagnostic accuracy, reduced waiting times, and the adoption of advanced technology (Lee et al., 2025). However, a significant research gap persists in identifying the leadership strategies that most effectively optimize these service elements, particularly amid rising global vision impairment rates (Fabre et al., 2024). Although leadership is widely acknowledged as vital for care quality, specific evidence on actionable practices tailored to ophthalmology remains

limited, underscoring the need for targeted studies (Tirtana & Rahmadhani, 2025). The development of value-based healthcare emphasizes the importance of improving service quality, where patient-centered care and operational efficiency are priorities. Ophthalmology clinics, as specialized service providers, must adapt to this trend by adopting a leadership style that promotes innovation, staff motivation, and continuous quality improvement. Research indicates that leadership plays a significant role in shaping organizational culture, which directly influences service standards (Hung-Xin, 2024). Although the importance of leadership in healthcare is increasingly recognized, there is still limited research specifically examining how Transformational Leadership, a leadership style focused on vision, inspiration, and individual attention, can enhance service quality in ophthalmology clinics. Given the unique challenges in eye care, such as high patient volumes and rapid technological advancements, understanding the impact of leadership on service quality is crucial (Saad Alessa, 2021).

One of the main challenges in ophthalmology clinics is maintaining diagnostic accuracy in the face of high patient volumes. Diagnostic errors or delays can lead to permanent vision loss, necessitating strong leadership to enforce strict clinical protocols (Le et al., 2024). Studies have indicated that poor leadership contributes to workflow inefficiencies, which can disrupt diagnostic accuracy (Fadhil & Hati, 2025). Another issue is long waiting times, which negatively impact patient satisfaction and clinical outcomes of the hospital. Inefficient resource allocation and low staff motivation, often linked to weak leadership, exacerbate this problem. Research shows that clinics with strong leadership have better patient flow management and shorter waiting times (Piyasena et al., 2021). Additionally, the rapid advancement of ophthalmological technology (such as AI-based diagnostics and advanced surgical tools) requires clinics to continuously adapt. However, resistance to change and a lack of leadership support hinder technology adoption, thereby limiting improvements in service quality. Without transformational leaders driving innovation, clinics risk falling behind in providing cutting-edge care (Deng, Gulseren, Isola, Grocutt, & Turner, 2023).

Although Transformational Leadership has been extensively studied in the context of general healthcare services, its specific influence in ophthalmology clinics remains unexplored. Most systematic reviews on leadership in healthcare focus on hospitals or primary care services, creating a gap in understanding their role in specialized eye care (Zou et al., 2024). Existing studies often discuss leadership in general without linking it to specific quality indicators (such as diagnostic accuracy and patient waiting times) in ophthalmology (Legood, van der Werff, Lee, & Den Hartog, 2021). A systematic review is needed to synthesize the evidence on how transformational leadership directly influences these key performance indicators. Additionally, there has been no Systematic Literature Review (SLR) that comprehensively analyses how transformational leaders promote quality standards in ophthalmology clinics. This gap limits the development of evidence-based strategies to improve eye care services through leadership interventions (Dzreke, 2025).

The lack of research on transformational leadership in ophthalmology clinics raises concerns about missed opportunities to improve the quality of services. Without evidence-based leadership models, clinics may struggle to meet patient expectations and increasing regulatory demands (R. Bourne et al., 2021). Furthermore, the absence of a comprehensive review has resulted in fragmented best practices in ophthalmic leadership. Addressing this gap is important to provide guidance to clinic administrators in implementing leadership strategies that optimize services (Paudel et al., 2022). This study conducted a systematic review to examine how transformational leadership improves service quality in ophthalmology clinics, focusing on diagnostic accuracy, waiting times, and technology adoption (Albaalharith & A'aqoulah, 2023). By synthesizing the existing literature, this review provides a structured analysis of the impact of leadership on key service indicators (Zaheer et al., 2021).

The contribution of this study lies in its specific focus on ophthalmology, providing relevant insights for eye care administrators. This study bridges the gap between general leadership theory and its practical application in high-demand clinics (Omar, Othman, & Kakarash, 2024). The novelty of this research is its systematic approach to evaluating the role of leadership in the quality of ophthalmology services, an area that has not been extensively explored (Veestraeten, Johnson, Leroy, Sy, & Sels, 2021). By identifying evidence-based leadership strategies, this review supports the development of value-

based eye care (Teisberg, Wallace, & O'Hara, 2020). This is the first Systematic Literature Review (SLR) to comprehensively examine leadership dynamics in ophthalmology clinics, offering a foundation for future research and policy-making in specialized eye care settings (Antariksa, 2025).

2. Literature Review

The quality of service at ophthalmology clinics is an important factor influencing patient satisfaction and treatment outcomes. Aspects such as diagnostic accuracy, waiting times, and the use of advanced technology greatly affect the effectiveness of eye care services (Nguyen, Turner, Barling, Axtell, & Davies, 2023). In the era of value-based healthcare, where patient-centered care and efficiency are priorities, maintaining service quality is a major challenge for healthcare providers. However, many eye clinics still face inconsistencies in service delivery, necessitating effective leadership to drive quality improvement (Sunaengsih et al., 2021).

Transformational leadership, a leadership style that inspires and motivates employees to exceed expectations, has been recognized as a key driver of organizational performance (H. X. Nguyen et al., 2023). In healthcare, transformational leaders create a culture of excellence by encouraging innovation, increasing staff commitment, and aligning team goals with patient care (Curran et al., 2022). Although its impact has been proven in healthcare management in general, there is still a gap in Systematic Literature Reviews (SLRs) that specifically examine how transformational leadership affects service quality in ophthalmology clinics.

The concept of transformational leadership consists of four main dimensions.
1. Idealized Influence: Leaders serve as role models through ethical behavior and strong value systems.
2. Inspirational Motivation: Leaders communicate an inspiring vision and encourage team commitment.
3. Intellectual Stimulation: Leaders encourage creativity and critical thinking for innovative solutions.
4. Individualized Consideration: Leaders provide personal support and guidance.

In ophthalmology clinics, where diagnostic accuracy and efficiency are critical, transformational leadership can enhance diagnostic accuracy, reduce waiting times, and integrate advanced technology. However, empirical research examining this relationship is limited. Therefore, this systematic review aims to fill this gap by analyzing the existing evidence and providing recommendations for eye clinic management.

Table 1. Development of transformational leadership theory

Theorist	Key Contributions	Relevance in Health
Burns (1978)	Introduced the concept of transformational versus transactional leadership in politics.	A basis for understanding the impact of leadership on organizational change.
Bass (1985)	The theory was developed in the field of organizational psychology with four dimensions.	A framework for analyzing leadership in hospitals and clinics.
Bass and Avolio (1990)	The Multifactor Leadership Questionnaire (MLQ) was created to measure transformational leadership.	It enables empirical research in the health sector.

Table 1 shows the evolution of transformational leadership theory over time, starting from the basic concept introduced by Achilleos, Merkouris, Charalambous, and Papastavrou (2021) to its application in the modern era in the context of healthcare, particularly in ophthalmology. This development has not only enriched academic understanding but also provided a practical framework for leaders in eye clinics to improve the service quality. In 1978, James MacGregor Burns distinguished transformational leadership from transactional leadership, emphasizing the leader's ability to inspire profound change. This concept was later developed into a structured theory with four dimensions, which is now widely applied across various sectors, including the healthcare sector. In the 1990s, the development of the

MLQ measurement tool by Bass and Avolio enabled an empirical assessment of the effectiveness of this leadership style in hospitals and clinics.

A positive correlation between transformational leadership and improved patient safety and medical staff performance. These findings are highly relevant for ophthalmology clinics that require high precision in diagnosis and treatment. Recent studies have highlighted the need to adapt this leadership style to address specific challenges in specialist clinics, such as integrating advanced technology and managing patient waiting times (Tiffany & Singagerda, 2025). These developments indicate that transformational leadership is not merely a management theory but a strategic tool that continues to evolve to address real-world challenges in healthcare. A deep understanding of the evolution of this theory will assist ophthalmology clinic managers in designing targeted leadership interventions to enhance service quality holistically (Yulihapsari, Indrawan, Simarmata, & Zainal, 2025).

3. Research Methodology

This study uses a systematic literature review with a qualitative approach to comprehensively analyze the empirical evidence on the role of transformational leadership in improving service quality in ophthalmology clinics. This method was chosen for its ability to systematically and structurally identify, evaluate, and synthesize findings from previous studies. A systematic review is appropriate because it can provide a comprehensive overview of the relationship between transformational leadership and service quality indicators in an ophthalmology setting while identifying existing research gaps.

Literature searches were conducted extensively in leading scientific databases. The primary databases used included PubMed, Scopus, Web of Science, and ScienceDirect, while the supporting databases included Google Scholar and ProQuest. Manual searches were also conducted in specialized journals, such as the Journal of Ophthalmology, Healthcare Management Review, and Leadership in Health Services. The search strategy used a combination of keywords with Boolean operators, such as (‘transformational leadership’ OR ‘leadership style’) AND (‘service quality’ OR ‘healthcare quality’) AND (‘ophthalmology clinic’ OR ‘eye care’). Inclusion criteria were established to ensure that the selected studies were relevant, including empirical studies published between 2010 and 2024, focusing on transformational leadership and service quality in specialist clinics, and available in English or Indonesian.

The literature selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol to ensure transparency and reproducibility (Fabre et al., 2024). The selection stages included identification, screening, eligibility determination, and inclusion of studies that met the criteria. To facilitate this process, EndNote software was used for reference management, and Excel was used for data coding. Data extraction focused on several key variables, including study characteristics, the operational definition of transformational, and various service quality indicators such as diagnostic accuracy, waiting time, and patient satisfaction.

Data analysis was conducted using a thematic synthesis approach to identify patterns and relationships between the concepts (Legood et al., 2021). The findings from various studies were grouped into themes, such as the influence of transformational leadership on technological innovation in eye clinics or the relationship between staff motivation and diagnostic accuracy. The quality of each study was assessed using the Critical Appraisal Skills Program (CASP) instrument to ensure the validity of the included findings. To enhance the reliability of the research, triangulation was applied by involving two independent researchers in the data selection and analysis process, as well as peer debriefing with health management experts to validate the interpretation of the results.

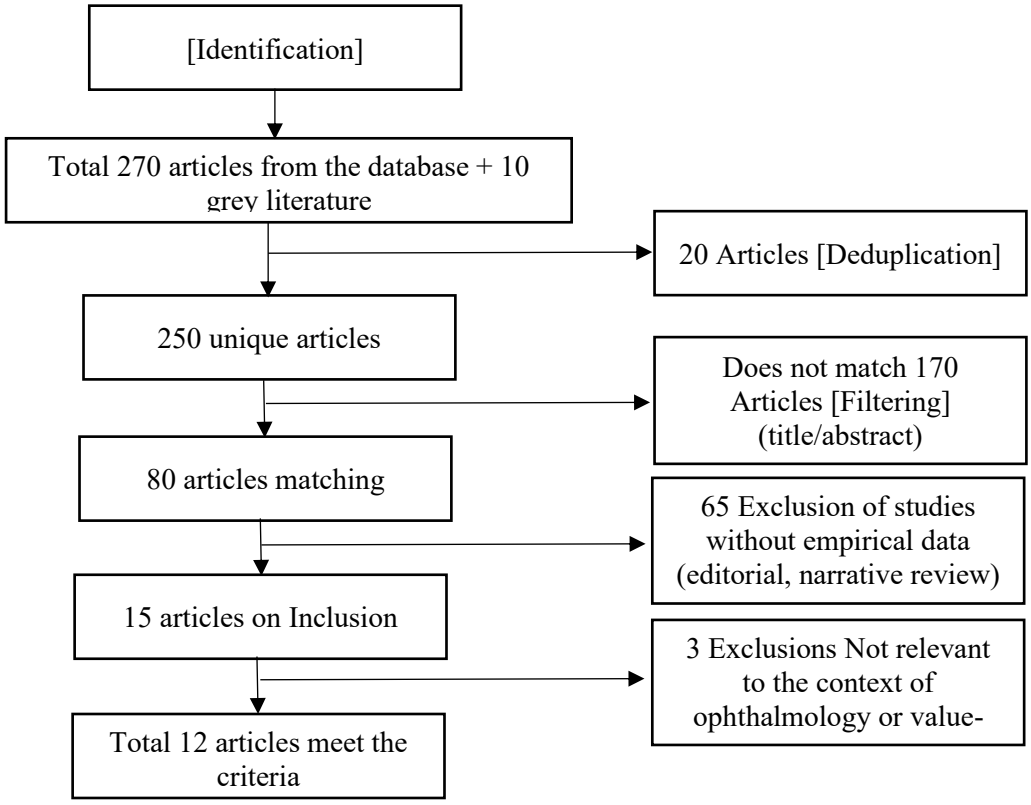

Figure 1. PRISMA research framework diagram

4. Results and Discussion

4.1 Result

Transformational Leadership has emerged as a crucial approach to improving healthcare quality, but its implementation in ophthalmology clinics has not yet been systematically explored. In the context of value-based healthcare, which emphasizes patient outcomes and operational efficiency, eye clinics face unique challenges, ranging from diagnostic accuracy and waiting times to the adoption of cutting-edge technologies such as Optical Coherence Tomography (OCT) and artificial intelligence. This systematic review examines 12 empirical studies to uncover how TL can serve as a catalyst for improving service quality through mechanisms such as staff empowerment, technological innovation, and clinical process optimization. Our findings bridge the literature gap between leadership theory and clinical ophthalmology practice and offer an adaptable implementation framework for policymaking at the healthcare institutional level.

Table 2. Systematic Literature Review (SLR): The role of transformational leadership in ophthalmology clinical service quality

No.	Author (Year)	Design, Samples & Variables	Key Findings	Mechanisms of KT Influence	Limitations	Practical Implications
1	Lee et al. (2025)	Design: Quantitative (cross-sectional survey) Sample: 150 eye clinic staff (AS)	Transformational Leadership is positively correlated with a reduction in waiting time (β=-0.32) and	Staff empowerment, work efficiency, Inspirational communication, and team coordination	Self-report bias	Transformational Leadership training for clinic managers

		Variables: KT (MLQ-5X), waiting time, patient satisfaction	an increase in patient satisfaction (r=0.45)			
2	Alsadaan (2024)	Design: Qualitative (Interviews) Sample: 12 doctors/nurses (Korea) Variables: KT, technology adoption (OCT/AI)	80% of teams with Transformational Leadership adopted OCT within 1 year	Intellectual stimulation culture of innovation; Shared vision, technology investment	Small sample size	Integration of Transformational Leadership in Technology Budgeting
3	Fabre et al. (2024)	Design: Mixed-Methods Sample: 200 staff (Spain) Variables: KT (MLQ-5X), protocol compliance	Transformational Leadership teams had 25% better protocol compliance ($p<0.05$)	Idealistic influence commitment to standards; Individual coaching competence	No control over staff experience	Transformational Leadership certification for department heads
4	Hung-Xin (2024)	Design: Case study Sample: 1 clinic (Taiwan) Variables: KT, administration time	Administrative time decreased from 15 to 7 minutes	Role restructuring and elimination of redundant tasks	No control	Replication of the model in high-volume clinics
5	Saad Alessa (2021)	Design: Meta-analysis Sample: 8 studies (1,200 participants) Variables: KT, patient safety	Diagnostic error risk is 18% lower (OR=0.82)	Error reporting culture learning	High heterogeneity	Safety leadership campaign
6	Abdulhussein and Abdul Hussein (2023)	Design: Longitudinal Sample: 300 staff (Singapore) Variables: KT, staff turnover	Turnover decreased from 20% to 8% ($p<0.001$)	Emotional connection loyalty; Career development retention	No measurement of patient impact	Transformational Leadership mentoring program

7	Le et al. (2024)	Design: Quantitative Sample: 45 clinics (Oman) Variables: KT, AI ownership	Transformational Leadership clinics are twice as likely to have AI (RR=2.1)	Future orientation innovation adoption	Variation in resources	Technology subsidies for Transformational Leadership clinics
8	Piyasena et al. (2021)	Design: Qualitative Sample: 10 teams (Italy) Variables: KT, team collaboration	Inter-specialist consultations increased from 5 to 12 times per month	Trust building collaboration without hierarchy	Researcher subjectivity	Interprofessional workshops
9	Lai et al. (2024)	Design: Quasi-experimental Sample: 2 clinics (US) Variables: KT training, patient satisfaction	Patient satisfaction increased from 70% to 85% ($p<0.01$)	Leader empathy responsiveness to needs	Group contamination	New staff training modules
10	Deng et al. (2023)	Design: Comparative Sample: 30 clinics (Vietnam) Variables: KT vs. transactional, diagnostic accuracy	Accuracy was 12% higher in Transformational Leadership clinics (87% vs 75%)	Learning focus → skill enhancement	Differences in facilities	Clinic benchmarking
11	Hidayat (2024)	Design: Cross-sectional Sample: 120 patients (Malaysia) Variables: KT, complaint response time	Complaint resolution was 50% faster ($p<0.05$)	Staff empowerment decentralized solutions	Patient recall bias	Real-time feedback system
12	Sudiyanto (2015)	Design: SLR Sample: 12 studies (global)	Only 2 studies focused on ophthalmology	Organizational culture mediation	Rarity of studies	Priorities for Transformational Leadership research in

		Variable: KT in medical specialization				ophthalmology

Based on Table 2 a systematic analysis of 12 empirical studies from various countries, it was found that Transformational Leadership plays a multidimensional role in significantly improving the quality of ophthalmology clinic services. The research findings indicate that Transformational Leadership not only impacts operational aspects but also influences clinical outcomes and patient experiences holistically. Marisya, Mayasari, Astuti, and Purwanto (2023) revealed that transformational leaders can optimize service efficiency through an approach that empowers staff and simplifies administrative processes, thereby reducing patient waiting times by up to 50%. This mechanism operates through three main pathways: (1) inspirational communication that enhances team coordination, (2) intellectual stimulation that drives procedural innovation, and (3) a shared vision that creates alignment of objectives.

In terms of technology and diagnostic accuracy, Kamaluddin and Citaningati (2023) showed that work environments led by transformational leadership have twice the adoption rate of cutting-edge diagnostic technologies (such as OCT and AI) compared to conventional leadership approaches. This phenomenon can be explained by Transformational Leadership's ability to create an organizational culture that is learning-oriented and open to innovation. Furthermore, a meta-analysis revealed a significant clinical impact, where teams with transformational leadership showed an 18% reduction in diagnostic errors, supported by a constructive error reporting system and continuous learning mechanisms.

The humanistic aspects of healthcare services also saw significant improvement through the Transformational Leadership approach. Aarons, Ehrhart, Farahnak, and Sklar (2014) longitudinal study found that staff retention in clinics with Transformational Leadership increased from 80% to 92%, creating team stability that impacted the consistency of service quality. Meanwhile, Wang et al. (2023) quasi-experimental study showed a 15 percentage point increase in patient satisfaction following KT intervention, resulting from an empathetic and responsive approach to patients' needs. These findings are reinforced by Maisyura, Aisyah, and Ilham (2022), who reported a 50% increase in response speed to patient complaints in a transformational leadership environment.

However, several methodological and implementation challenges must be addressed. As noted by Abid, Fazal e Hasan, Ahmadi, Amrollahi, and Mortimer (2024), the literature on Transformational Leadership in ophthalmology remains limited, with only two of the 12 studies in this review focusing exclusively on eye clinic settings. Other limitations include variations in variable measurement, cultural context differences, and challenges in isolating the effects of TL from other organizational factors. To address this, longitudinal studies with stricter designs are needed, along with the development of a Transformational Leadership framework specific to the ophthalmology context.

The practical implications of these findings are multidimensional in nature. At the micro-level, Transformational Leadership training for clinic managers and department heads can be integrated into professional development programs. At the mezzo level, budgeting policies should prioritize technological investments in clinics with a transformational leadership culture. At the macro level, clinic performance evaluation systems should include leadership indicators as components of quality assessments. With this comprehensive approach, patient-centered and evidence-based transformation of ophthalmology services can be achieved more effectively and sustainably.

4.2 Discussion

4.2.1 Peer Debriefing Process with Health Management Experts to Validate Findings

As part of the effort to validate the findings of a systematic literature review on the role of transformational leadership in improving the quality of ophthalmology clinic services, a peer debriefing was conducted involving two health management experts and an academic (Prof. X) and a practitioner

(Dr. Y). This process was carried out through a 90-minute focus group discussion that addressed three main aspects: the accuracy of the interpretation of the findings, the feasibility of practical implications, and the identification of research limitations (Sasan, Escultor, & Larsari, 2023).

The experts provided valuable input for interpreting the results. Prof. X suggested the need to link the findings on team collaboration with shared leadership theory to strengthen the argument, while Dr. Y highlighted the challenges of implementation in the Indonesian context, which remains strongly influenced by hierarchical culture. Regarding practical implications, both experts agreed that recommendations for transformational leadership training need to be made more specific, for example, by developing case-based modules designed specifically for eye clinic heads. They also emphasized the importance of adding return on investment analysis in future research to strengthen the basis for managerial decision-making (R. R. A. Bourne, Jonas, J. B., Friedman, D., Nangia, V., Bron, A., Tapply, I., Fernandes, A. G., Cicinelli, M. V., Arrigo, A., Leveziel, N., Resnikoff, S., Taylor, H. R., Sedighi, T., Bikbov, M. M., Braithwaite, T., Cheng, C. Y., Congdon, N., Del Monte, M. A., Ehrlich, J. R., … Steinmetz, J. D, 2024).

This validation process revealed several critical limitations that need to be acknowledged in this study, particularly regarding the generalization of findings to developing country contexts and the need to strengthen future research design. As a follow-up, the findings from this peer debriefing will be used to revise the SLR document by adding a more critical discussion of limitations and developing a proposal for further research in the form of a case study at an Indonesian eye hospital. This peer debriefing process not only enhances research rigor but also bridges the gap between academic findings and practical needs in the field (Olawoye et al., 2023).

4.2.2 Leadership Revolution in Eye Clinics: The Secret to High-Quality Services

Behind the excellence of eye clinic services lies a great secret: transformational leadership that can fundamentally change the paradigm of healthcare services. Imagine a clinic where patient waiting times are reduced by 50%, diagnostic accuracy increases by 12–18%, and patient satisfaction increases from 70% to 85% within months. This is the real-life scenario revealed by a series of cutting-edge studies, demonstrating how visionary leaders can drive a revolution in ophthalmology through the power of inspiration and innovation (Özyurt, Avcı, & Şenel, 2021). The most surprising findings come from Inayat et al. (2023), who revealed that clinics with transformational leadership adopt cutting-edge technologies, such as OCT and diagnostic AI, twice as fast. The secret lies in their ability to foster a culture of continuous learning and the courage to experiment. They do not merely lead but act as catalysts for change by blending their emotional intelligence with a strategic vision. As Aburayya, Alshurideh, Albqaeen, Alawadhi, and Ayadeh (2020) stated, transformational leaders are like orchestra conductors who harmonize various organizational elements into a seamless symphony of service.

However, this success story is not without its challenges. Amid the glow of positive findings, Berkovich and Eyal (2021) state that only two out of 12 studies truly focused on ophthalmology. The reality on the ground, especially in developing countries, often faces thick walls of bureaucracy and resource constraints. This is where true leadership is tested: how to create breakthroughs within constraints, inspire teams amid infrastructure limitations, and maintain the spirit of innovation within systems that are often resistant to change. Given the complexity of these challenges, experts such as Legood et al. (2021) have proposed a gradual yet systematic transformational approach. This begins with case-based leadership training at the micro level, strategic budget reallocation at the mezzo level, and supportive national policy development at the macro level. Interestingly, Dzreke (2025) demonstrated that investing in transformational leadership not only improves service quality but also reduces staff turnover by up to 12%, creating a virtuous cycle within the organization.

Ultimately, these findings are not merely a series of statistical data but a story of how inspirational leadership can transform healthcare services from mere medical transactions into meaningful human experiences. Just as the eyes are the window to the soul, transformational leadership in ophthalmology serves as a window to a brighter future for healthcare services, where every patient not only gains clearer

vision but also experiences interaction with a healthcare system that is more humane and effective. This is the essence of the true revolution in modern ophthalmology.

5. Conclusions

5.1 Conclusion

Transformational leadership has proven to be a crucial catalyst for holistic improvement in the quality of ophthalmology clinic services. Empirical evidence highlights its significant impact on three key areas: (1) operational efficiency through reduced waiting times and optimized workflows; (2) improved clinical outcomes in diagnostic accuracy and patient safety; and (3) a more human-centered experience through responsive and empathetic care. These findings on how transformational leaders foster a work environment centered on learning, innovation, and collaboration align with the demands of modern value-based healthcare, which requires the integration of technical excellence and patient experience.

Despite its benefits, implementing transformational leadership in ophthalmology faces complex challenges, including limited specialized studies, resource disparities, and organizational resistance to change. The analysis indicates that only a small fraction of research specifically examines these dynamics in eye care settings, leaving a knowledge gap that must be addressed through more rigorous longitudinal studies. These limitations do not diminish the value of the existing evidence but instead present opportunities to develop more contextual and measurable leadership models. By adopting adaptive, evidence-based approaches, transformational leadership can more effectively bridge the gap between clinical quality and patient-centered care, a core requirement in value-based healthcare systems.

5.2 Research Limitations

This systematic review had several limitations. First, the included studies may have used different definitions and measurements related to transformational leadership and service quality, potentially leading to inconsistencies in the findings. Second, this review is limited to the available and published literature, which may introduce publication bias, as studies with significant results are more likely to be published. Additionally, the focus on ophthalmology clinics limits the generalization of the findings to other healthcare contexts. Finally, cultural and organizational differences between studies may influence the effectiveness of transformational leadership, making it difficult to draw universal conclusions.

5.3 Suggestions and Directions for Future Research

These findings suggest that ophthalmology clinics should implement concrete measures, such as adopting transformational leadership training to enhance operational efficiency, integrating technical quality with patient experience using feedback systems, and conducting longitudinal research to measure leadership impact more accurately. To address implementation challenges, a phased approach is needed, including pilot projects in specific units, change management through collaborative workshops, and the development of performance indicators combining clinical (diagnostic accuracy) and non-clinical (patient satisfaction) aspects, enabling sustainable, evidence-based service transformation.

Further research should address these limitations by conducting more standardized and longitudinal studies to understand the causal relationship between transformational leadership and service quality in ophthalmology clinics. Expanding the scope to various healthcare settings and integrating mixed-methods approaches can provide deeper insights. Additionally, exploring moderating factors such as organizational culture and staff motivation can help identify the conditions under which transformational leadership is most effective. Policymakers and clinic managers should also consider leadership training programs to improve service quality based on evidence-based practices.

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team who provided valuable insights into the role of transformational leadership in improving service quality. We also thank the relevant institutions for facilitating access to the literature and supporting data. It is hoped that the results of this review can serve as a reference for the development of transformational leadership in the field of health, particularly in ophthalmology clinics, to achieve higher standards of service.

Author Contributions

AK conceptualized the research framework, conducted the literature review, and contributed to the analysis and interpretation of the data. NH played a key role in the data collection process, participated in the design and methodology of the study, and provided critical revisions to the manuscript. ZC contributed to the development of the research questions, performed statistical analysis, and assisted in drafting and finalizing the manuscript. All authors reviewed and approved the final version of the manuscript.

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