



Mid-Ocean University

College of Management

Master of Project Management

**Assessing the Impact of Project Management
Practices on Healthcare Quality Improvement
Initiatives in Saudi Arabia**

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Abstract

Project management has become an essential component of healthcare quality improvement initiatives, particularly in the evolving healthcare landscape of Saudi Arabia. This study examines the impact of structured project management practices, including PMBOK, Lean, and Agile methodologies, on healthcare quality improvement projects in Saudi hospitals. The research employs a quantitative approach, utilizing a structured questionnaire distributed to 300 healthcare professionals, including project managers, administrators, clinicians, and quality officers. The study analyzes key factors such as leadership involvement, resource allocation, stakeholder engagement, and alignment with Saudi Arabia's Vision 2030. The results indicate that project management practices significantly enhance healthcare outcomes by improving operational efficiency, patient safety, and service delivery. However, the study also identifies several challenges, including resistance to change, lack of formal training, bureaucratic hurdles, and limited resources, which hinder the full adoption of project management frameworks. The findings emphasize the importance of leadership support and training programs in overcoming these challenges and promoting a structured project management culture in healthcare settings. The study's correlation analysis reveals strong associations between project management practices and improved healthcare outcomes, highlighting the crucial role of leadership and training in successful implementation. Furthermore, the research underscores the alignment of project management practices with Saudi Arabia's Vision 2030 healthcare transformation goals, particularly in digital health integration and cost-effective service delivery. This study contributes to the growing body of knowledge on healthcare project management and provides recommendations for enhancing its application in Saudi hospitals. Future research should explore longitudinal impacts, digital transformation, and policy reforms to further optimize project management practices in healthcare. Addressing these areas will help healthcare organizations achieve sustainable improvements in quality, efficiency, and patient-centered care.

Keywords: Project management, healthcare quality improvement, Lean, Agile, PMBOK, leadership, Vision 2030, digital transformation, Saudi Arabia, patient outcomes.

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List of terminology

According to PMI (2021), these are the most significant terms associated with this study:

- ❖ Project: A short-term undertaking to provide a special good, service, or outcome
- ❖ Project management is the process of applying tools, techniques, knowledge, and abilities to project activities in order to meet project requirements.
- ❖ Agile: A project management approach where activities are broken down into manageable chunks and are regularly reviewed and adjusted
- ❖ A health care organization: A larger entity that has a significant impact on whether or not the care of people with chronic illnesses is improved.

Chapter One: Introduction

Introduction

Modern health systems, especially in Saudi Arabia, must improve quality due to population growth and chronic disease rates. Recent years have seen healthcare companies work hard to improve patient outcomes, reduce operations, and improve service delivery (Yasir Yasser Younis A, 2020). Project management for healthcare quality improvement is becoming popular. Project management, usually associated with building and technology, is ideal for managing complex healthcare and other processes and resources (Singh & Raizada, 2018). Many changes have improved service and patient outcomes in healthcare system in Saudi Arabia. The Kingdom's Vision 2030 reform approach prioritizes healthcare quality and accessibility. Effective project management can help healthcare quality improvement projects succeed efficiently and sustainably. Project management—planning, execution, monitoring, and controlling—supports healthcare quality improvement (Shuaib, 2016).

Healthcare project management has considerable potential, however its impact on healthcare system in Saudi Arabia is unknown. Research elsewhere shows that efficient project management increases patient safety, cost efficiency, and service quality in healthcare firms. With its vast public sector and increasing commercial sector, healthcare system in Saudi Arabia gives a unique opportunity to investigate this interaction. The study analyzes how project management improves Saudi hospital quality. This study examines how organized project management affects these projects, filling a literature gap. It will show which project management practises promote healthcare and how to adapt them to Saudi Arabia (Nicola et al., 2020). Given the ongoing attempts to restructure healthcare systems in the Kingdom to fulfill national targets for enhanced delivery and patient care quality, this research is pertinent (Mani & Goniewicz, 2024).

Health systems worldwide struggle to meet expanding population needs while providing high-quality services efficiently and sustainably. Saudi Arabia needs better healthcare due to rapid population expansion, chronic diseases, and aging. The demand on healthcare infrastructure requires reforms and innovations to improve service delivery, patient outcomes, and operational efficiency. Vision 2030, Saudi Arabia's reform plan, emphasizes healthcare modernization. Project management guides quality improvement planning, execution, and evaluation.

Project management, usually associated with construction, technology, and manufacturing, is growing in healthcare. Healthcare systems are appropriate for structured and systematic administration due to their complex procedures, high-stakes results, and stakeholders. Project management provides specified objectives, resource allocation, risk management, and stakeholder participation for quality improvement projects (Shash & Qarra, 2018). Even though healthcare project management has huge potential, many countries, including Saudi Arabia, underuse it. Implementation and comprehension mismatches make healthcare system efficiency and effectiveness difficult (Tawfik et al., 2022).

Continuously enhancing healthcare quality increases patient care, efficiency, and resource use. Companies worldwide employ Lean, Six Sigma, and Agile to achieve these aims. These methods emphasize project management ideas including data-driven decision-making, process optimization, and stakeholder engagement. International research demonstrate these strategies improve medical errors, patient wait times, and staff satisfaction. These findings' impact on Saudi healthcare is uncertain. Saudi Arabia's culture, organization, and regulations need specific project management (Senitan et al., 2018). Saudi healthcare has a substantial Ministry of Health-run public sector and a developing commercial industry. Citizens and residents receive free or heavily subsidized public services, while the private sector supports a growing population that needs specialized and high-quality care. This duality offers project management integration and quality improvement challenges (O. AlSehaimi et al., 2014). Due to its scale and resources, the public sector can deploy standardized practices globally. Bureaucratic hurdles, change reluctance, and resource shortages delay growth. The private sector, which values innovation and competitiveness, adopts project management methods faster but fails to align corporate goals with healthcare quality requirements (Nady et al., 2016).

Vision 2030 overhauls Saudi healthcare. Plan encourages privatization, digital transformation, and value-based care, making project management desirable. Digital health solutions like EHRs and telemedicine require rigorous design and execution. Structured project management improves patient care, hospital readmissions, and staff training. Unstructured project management in healthcare quality improvement is a serious concern (Mohsen Alsufyani et al., 2020). Project execution inefficiency plagues Saudi healthcare. Poor planning, resource allocation, and stakeholder participation can delay quality improvement, increase costs, and lower results. Such issues highlight the need for thorough healthcare project management. Structured project management frameworks like the PMBOK solve these issues. Project scope, time, cost, and stakeholder engagement are PMBOK priorities. These ideas help healthcare companies complete quality improvement projects on time and on budget (Mahamid, 2016).

Cultural and organizational factors affect Saudi healthcare project management adoption along with operational constraints. Hierarchical organizations, traditional preferences, and insufficient management experience restrict change. Lack of project management training among healthcare professionals is another issue. Many healthcare executives and personnel lack the skills and knowledge to handle projects, despite their growing importance. Closing this gap requires targeted training, leadership support, and a culture of continuous development and innovation (Khan et al., 2019). Saudi Arabia can learn from international healthcare project management research. Egypt-based research shows Agile and Lean improve hospital processes, efficiency, and patient satisfaction. Large patient volumes and resource constraints are similar in Saudi Arabia, making these findings relevant. However, Saudi Arabian needs and constraints must be considered when applying these strategies. In Saudi healthcare, lean minimizes waste and optimizes value, but personnel, regional, and legal constraints must be addressed (Hijazi et al., 2018).

Project management enhances healthcare quality beyond operational efficiency. Project management encourages accountability, collaboration, and learning to alter organizations. Stakeholder engagement and open communication boost healthcare providers' trust and dedication, increasing patient outcomes. Additionally, data-driven decision-making and performance indicators optimize processes and resource allocation (Hassanain et al., 2013). Healthcare project management is underutilized in Saudi Arabia despite its potential. Disorganized project management in many Kingdom healthcare organizations indicates a lack of standardization and integration. Inconsistency affects quality improvement and results. Policy support, skills development, and healthcare-specific project management frameworks are needed to meet this difficulty (Hassan et al., 2022).

Saudi Arabian project management shows how structure improves healthcare. Agile, Lean, and PMBOK research yields local best practices. Analysis identifies implementation challenges and solutions. This experience ensures quality improvement projects meet national aims to reform Saudi Arabia's healthcare system for Vision 2030 (Ghaithan et al., 2021). Finally, project management in healthcare quality improvement can help Saudi Arabia enhance its healthcare system. Structured procedures and problem-solving help the Kingdom achieve Vision 2030 and set a regional norm. Project management makes healthcare more efficient, patient-centered, and high-quality (Banani et al., 2016).

Problem Statement

Saudi Arabia's healthcare sector struggles to meet population growth and quality standards. Population expansion, increased chronic disease rates, and aging require better healthcare quality and outcomes. Most Saudi Arabian hospital quality improvement projects fail owing to inefficiencies, delays, cost overruns, and poor outcomes. These shortcomings question healthcare planning, execution, and evaluation (Alzghaibi, 2022). Poor healthcare project design, implementation, and evaluation are important issues. Uncertain goals, deadlines, and resource allocation might hinder project efficiency and results. Inconsistent stakeholder participation causes project failures. Saudi Arabia's healthcare industry has been slow to implement project management, which works in building and manufacturing. Nonacceptance limits healthcare quality improvement (Alshuwaikhat et al., 2016).

Lack of coordinated healthcare project management worsens issues. Without planning, monitoring, and control frameworks, healthcare companies struggle to align projects with strategic goals, allocate resources efficiently, and limit risks. Healthcare project management errors delay completion, increase costs, and reduce efficacy, compromising patient care. Inefficiencies increase patient wait times, satisfaction, and operational outcomes, hurting the healthcare system (Alshammari et al., 2019). Project management improves resource optimization, stakeholder satisfaction, and project success in integrated industries. To manage complicated projects, PMBOK, Lean, and Agile emphasize objectives, timetables, cost control, and stakeholder involvement. These strategies can streamline, eliminate waste, and boost efficiency. Project management underutilizes its potential to improve Saudi healthcare (Alshahrani et al., 2018).

Saudi Arabia's culture and organization make healthcare project management integration difficult. Hierarchical structures and antiquated management approaches inhibit innovation. Healthcare personnel and leaders' change resistance impede formal project management. Healthcare workers without project management expertise struggle to use these methods. These impediments impede project success and healthcare sector transformation in line with Vision 2030 (Alshahrani et al., 2019). Saudi Arabia's Vision 2030 reform priority is healthcare modernization, quality, accessibility, and efficiency. Project management becomes more critical as healthcare reforms continue. Project management can generate positive change by solving problems and achieving strategic goals in Vision 2030. Lack of a robust project management framework in healthcare inhibits the system's ability to meet these goals (Alrasheedy et al., 2019).

Complex healthcare projects require structured project management. It takes planning and execution to implement digital health solutions, improve patient care, reduce hospital readmissions, and boost operational efficiency. Lack of standards in project management affects efficiency and impact. Poor project management delays and costs EHR and telemedicine implementations, missing opportunities to improve patient outcomes and system efficiency (Alquwez et al., 2018). Project management in healthcare has proven benefits elsewhere, but Saudi Arabia restricts its usage. Egyptian studies show that Lean and Agile improve hospital processes, resource allocation, and patient happiness. These findings demonstrate that project management could fix many Saudi healthcare difficulties. Understanding how to execute these ideas is difficult without regional research and Saudi-specific frameworks (Alquwez et al., 2018).

The literature and practice lack evidence-based insights into how project management affects healthcare quality in Saudi Arabia. Healthcare businesses cannot make informed project management technique adoption and adaption decisions due to this gap. Without an understanding of these strategies' efficacy, policymakers and healthcare professionals struggle to optimize project outcomes and link them to national healthcare goals (Alqahtani. et al., 2017). Saudi healthcare is becoming more complex and requires systematic project management. Quality, sustainable healthcare includes resolving inefficiencies, improving resource allocation, and partnering with stakeholders. This study evaluates project management methodologies' restrictions and possibilities to improve healthcare quality and promote Saudi Arabia's healthcare reform (Alotaibi et al., 2016). This problem statement highlights the Saudi healthcare system's major issues and the necessity for project management. This paper explains how project management can improve healthcare quality and efficiency by addressing current practise restrictions and challenges to structured approaches. To better meet population demands, the insights will influence future strategies and establish the framework for project management in healthcare (Alomi et al., 2018).

Study Importance

This study integrates project management with quality improvement to fill a critical need in Saudi Arabia's healthcare administration. For Vision 2030 and expanding demands, Saudi Arabia's healthcare system improves swiftly. Healthcare reform is a priority in the Kingdom, making project execution essential for quality services. The delivery of such services must improve patient outcomes, operational efficiency, and cost-effectiveness. Project

management becomes crucial as healthcare businesses attempt to maximize resources, prevent errors, and deliver improvement efforts on time and within budget (Almutairi et al., 2019). Project management organizes planning, monitoring, and assessment to achieve goals. To increase quality, these strategies emphasize defined goals, resource allocation, risk management, and stakeholder interaction. The Saudi healthcare sector is unwilling to use these technologies, limiting their potential. Understudied Saudi healthcare project management need additional research (Almalki et al., 2012).

Vision 2030 transforms healthcare, making project management more crucial. Quality improvement initiatives increase patient care, hospital efficiency, and operations via project management. These methods can help healthcare companies manage delays, cost overruns, and stakeholder engagement. These improvements meet Vision 2030 and improve healthcare (Almajed, 2017). This study analyzes how project management approaches increase healthcare quality. Assessment of techniques and results provides relevant information for healthcare leaders and policymakers. Know how project management helps organizations finish projects quickly and affordably increases operational performance and resource use. Implementation challenges including reluctance to change or insufficient training can be addressed to increase healthcare adoption of these approaches (Almahmoud et al., 2012).

The use of project management could improve Saudi healthcare. Healthcare operations and patient care improve with structured mega initiatives. Agile, Lean, and the PMBOK have proved to streamline operations, eliminate inefficiencies, and increase stakeholder participation. These strategies promote data-driven decision-making, which is crucial for quality improvement evaluation and modifications (Alhumayn et al., 2017). This study modernizes Saudi healthcare. The research shows how project management improves healthcare delivery, supporting organizational alignment with national goals. The evidence-based standards enable healthcare professionals and policymakers implement project management. These proposals attempt to improve project execution, patient results, and healthcare program sustainability (Algahtani et al., 2021).

Healthcare management is also affected by this research. It displays Saudi project management and can be reproduced in other countries with similar healthcare systems. The report encourages healthcare businesses to innovate and succeed via continuous improvement (Alhaqbani et al., 2016). This study establishes the framework for healthcare project management research and applications. The study highlights the need for future research to improve methodology, solve rising issues, and apply this information to Saudi Arabia's rapidly changing system. It emphasizes the need for context-specific solutions that consider cultural,

organizational, and regulatory factors to personalize healthcare project management (Aldosari et al., 2018). Finally, this study investigates project management's role in quality improvement to fulfill Saudi Arabia's urgent healthcare needs. Its insights can improve healthcare, resource optimization, and Vision 2030. Project management may improve patient care and operational performance, altering the Kingdom's healthcare system to meet growing demand (Aldosari, 2014).

Study Purpose

The purpose of this study are as follows:

- ❖ To evaluate the impact of project management practices on the success of healthcare quality improvement initiatives in Saudi Arabia.
- ❖ To identify the specific project management methodologies and techniques that contribute to improved healthcare outcomes, including patient care and operational efficiency.
- ❖ To assess the challenges and barriers faced by healthcare organizations in Saudi Arabia in implementing project management practices in quality improvement projects.
- ❖ To provide recommendations on how healthcare organizations can effectively integrate project management practices to enhance the success and sustainability of quality improvement initiatives.

Study Questions

The research questions of this study are as follows:

- ❖ How do project management practices influence the success of healthcare quality improvement initiatives in Saudi Arabia?
- ❖ Which specific project management methodologies are most effective in improving healthcare outcomes, such as patient care and operational efficiency, in healthcare system in Saudi Arabia settings?
- ❖ What challenges and barriers do healthcare organizations in Saudi Arabia face in implementing project management practices for quality improvement?
- ❖ How can healthcare organizations in Saudi Arabia integrate project management practices to enhance the effectiveness and sustainability of quality improvement initiatives?

Research Hypotheses

The research hypothesis of this work are as follows:

- ❖ H1: Project management practices significantly influence the success of healthcare quality improvement initiatives in Saudi Arabia.
- ❖ H2: Healthcare organizations that employ structured project management practices achieve better patient outcomes compared to those that do not.
- ❖ H3: Specific project management methodologies, such as Lean and Agile, are more effective in improving healthcare outcomes (e.g., patient care and operational efficiency) than traditional methods in Saudi Arabia's healthcare settings.
- ❖ H4: The application of PMBOK principles in Saudi healthcare organizations positively correlates with the timely and cost-effective completion of quality improvement projects.
- ❖ H5: Healthcare organizations in Saudi Arabia face significant barriers, such as resistance to change and lack of training, which negatively impact the implementation of project management practices.
- ❖ H6: The presence of leadership support mitigates the challenges associated with implementing project management practices in Saudi healthcare organizations.
- ❖ H7: The integration of project management practices in Saudi healthcare organizations enhances the sustainability of quality improvement initiatives.
- ❖ H8: Healthcare organizations that align project management practices with Vision 2030 objectives achieve higher project success rates compared to those that do not.

Theoretical Model

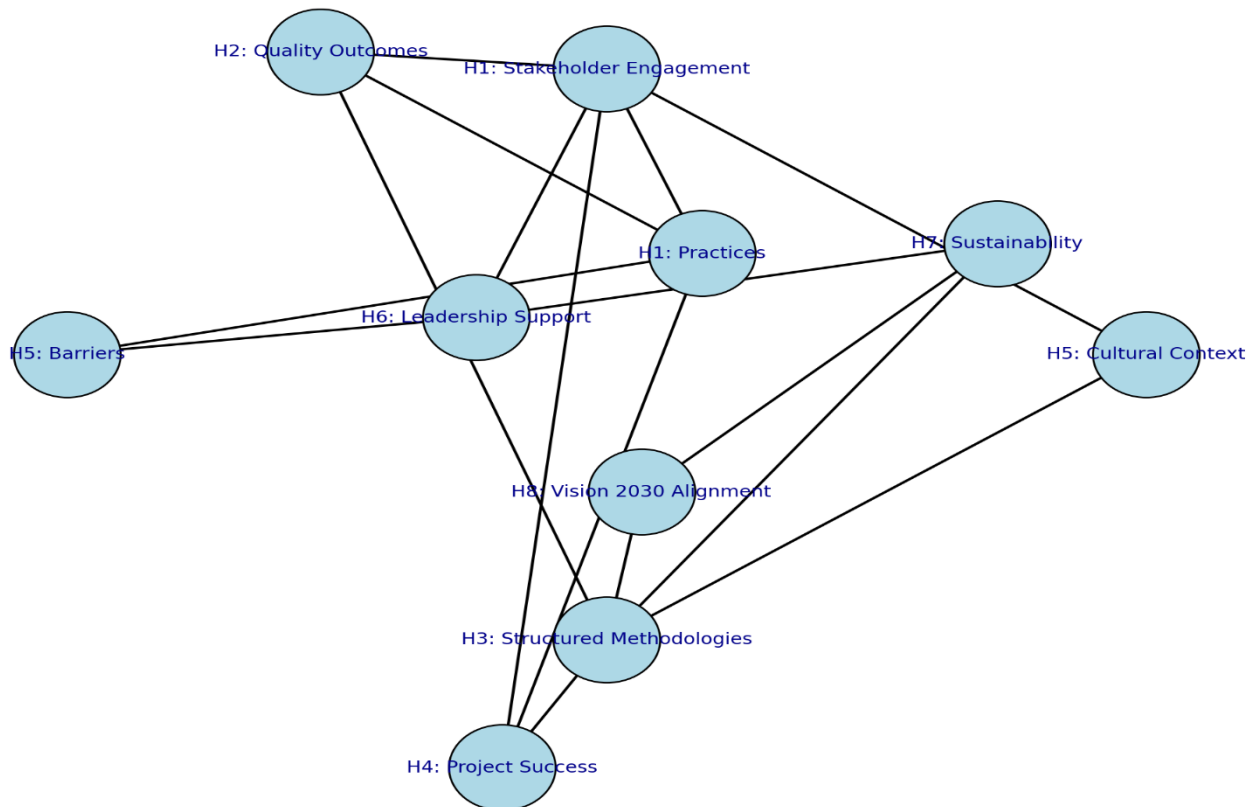


Figure 7: Theoretical Model of the Study

The conceptual model developed for this study illustrates the relationships between project management practices and healthcare quality improvement initiatives in Saudi Arabia. It is structured to highlight the interactions between the independent, dependent, mediating, and moderating variables, providing a comprehensive framework for understanding the study's hypotheses. At the core of the model are the independent variables (IVs): project management practices, leadership support, and alignment with Vision 2030. These variables serve as the primary drivers of success in healthcare quality improvement. The hypothesis (H1) that project management practices significantly influence the success of such initiatives is central to the model, emphasizing the importance of structured planning, execution, monitoring, and control. Leadership support (H6) is equally critical, as it provides the strategic direction and resources necessary to mitigate challenges and foster a culture of accountability and collaboration. Furthermore, the alignment of project management practices with Vision 2030 objectives (H8) reflects the strategic importance of integrating national healthcare goals into project frameworks.

The dependent variables (DVs)—healthcare quality outcomes, project success, and the sustainability of quality improvement initiatives—are the ultimate measures of the effectiveness of project management practices. Improved healthcare quality outcomes (H2), such as better patient care and operational efficiency, are directly influenced by how well projects are managed. Timely and cost-effective project success (H4) and the sustainability of initiatives (H7) further demonstrate the long-term value of employing structured methodologies. These outcomes align with the Kingdom's aspirations under Vision 2030, emphasizing enhanced healthcare delivery and system modernization. The model incorporates mediating variables (MVs) to explain how the independent variables influence the dependent variables. Stakeholder engagement (H1) acts as a bridge between project management practices and project outcomes, underscoring the importance of collaboration and communication among healthcare professionals, administrators, and patients. Similarly, the use of structured methodologies such as Lean and Agile (H3) enhances the link between project management practices and the achievement of quality outcomes, ensuring that processes are optimized and aligned with project goals.

Two moderating variables (MODs)—barriers and cultural/organizational context—highlight the challenges and complexities of implementing project management practices in Saudi Arabia's healthcare system. Barriers such as resistance to change and lack of training (H5) can weaken the impact of independent variables, emphasizing the need for targeted training and leadership initiatives to overcome these obstacles. Cultural and organizational factors, including hierarchical structures and regulatory constraints, further influence the degree to which stakeholder engagement and structured methodologies can effectively drive outcomes. This model also reflects the interconnectedness of these variables. For instance, leadership support (H6) not only directly impacts the sustainability of initiatives but also mitigates barriers, fostering a more conducive environment for stakeholder engagement and the application of methodologies. Similarly, aligning project practices with Vision 2030 (H8) ensures that efforts are strategically relevant and more likely to receive institutional support.

In summary, the conceptual model provides a structured approach to investigating the hypotheses of the study. It demonstrates how independent variables drive dependent outcomes through mediators and under the influence of moderators, offering a holistic view of the factors affecting healthcare quality improvement in Saudi Arabia. This framework will guide the study in assessing the practical and theoretical implications of project management practices in achieving the Kingdom's healthcare goals.

Chapter 2: Literature Review

Introduction

Construction, technology, and manufacturing have long used project management. Recently, their use in healthcare has grown due to their ability to increase operational efficiency, patient outcomes, and quality improvement project timelines and budgets. Healthcare systems' many stakeholders, various processes, and high-stakes outcomes make them perfect for organized project management (Abdi & Singh, 2021). Several research have examined how project management affects healthcare quality improvement. Alsabban & Kitto (2018) examined how Agile and Lean project management technologies improve hospital patient care and wait times. They studied Egyptian hospitals, which confront similar issues to Saudi Arabia, including high patient volumes and resource constraints (Alanazi, 2021). Project management approaches increased hospital service delivery by optimizing workflows, eliminating inefficiencies, and improving resource allocation, according to the study. These enhancements improved patient outcomes and satisfaction. This study sheds light on project management's potential benefits in healthcare, but its concentration on Egypt suggests more research in other healthcare systems, particularly Saudi Arabia (Aldosari, 2017).

Overall, Hijazi et al. (2018) evaluated how project management is used in developing nations to improve healthcare quality. The PMBOK framework, a popular project management methodology, was used in their research. The study examined how project management affects patient safety and care, notably in infection control and surgery (Alfawaz et al., 2022). These areas improved for healthcare businesses that applied PMBOK-based project management, according to Xie et al. However, the study also found that healthcare personnel reluctance to change and a lack of project management training make these techniques difficult to apply. These findings highlight the necessity for healthcare-specific project management methods (Ali et al., 2024). Mani & Goniewicz (2024) examined project management in healthcare changes within Saudi Arabia's Vision 2030 agenda. Vision 2030 seeks to modernize healthcare by improving delivery and results. While there is rising understanding of the value of project management approaches in accomplishing these aims, Al-Mutairi's study found inconsistent applicability across healthcare system in Saudi Arabia. The study found that hospital professionals lack comprehensive project management training, leadership support, and the ability to apply international project management concepts to local healthcare contexts. The current analysis relies on Al-Mutairi's research on tailoring project management methodologies to healthcare system in Saudi Arabia organizations' demands.

Another important Yasir Yasser Younis A (2020) study examined how project management approaches affect Middle Eastern healthcare quality improvement projects. Their research showed that healthcare organizations that used stakeholder management, risk mitigation, and structured planning had superior project completion, cost control, and timely delivery. Rajab and Khan discovered that healthcare organizations that used project management could handle difficult quality improvement programs. Similar to prior studies, their research found substantial challenges to successful implementation, including limited leadership participation and healthcare personnel' lack of project management tool knowledge. The report stressed that leadership must actively promote project management approaches to overcome these constraints. The Vision 2030 reforms in Saudi Arabia are rapidly changing the healthcare sector, and project management is being used to improve quality. Despite promising worldwide studies, Saudi Arabia-specific literature is lacking. This study examines how project management practises affect healthcare quality improvement initiatives in Saudi Arabia's unique healthcare context. This study will shed light on how to adapt project management methods to the healthcare system in Saudi Arabia, addressing some of the issues raised in prior studies (Hijazi et al., 2018; Alturise, 2020; Ali et al., 2024).

Summary of Past Studies

Healthcare's difficulties require project management, traditionally connected with building and technology. Due to complex processes, stakeholder groupings, and high stakes outcomes, healthcare efforts need standardized and efficient procedures. Healthcare's growing project management may improve processes, resource allocation, and outcomes. PMBOK, Lean, Agile, and Six Sigma are used in healthcare because they prioritize time, money, quality, and stakeholder satisfaction (Alalawi et al., 2016). The PMBOK manages scope, cost, and quality. To handle healthcare's complexity, its methodical approach plans, executes, and monitors activities. PMBOK provides clear objectives, deadlines, and responsibilities to match projects with organizational goals, reducing inefficiencies and boosting impact. Waste is eliminated and resource consumption is optimized in Lean. This method helps optimize patient wait times and service delivery workflows in healthcare (Al-Yami & Sanni-Anibire, 2019).

Agile approaches function well in changing healthcare contexts. Healthcare firms need flexible project management to respond swiftly to changing patient needs and regulations. Agile keeps projects relevant and successful through collaboration, feedback, and gradual progress. Six Sigma, another prominent paradigm, reduces volatility and improves operations

with data. Precision and quality enhance infection control, error reduction, and clinical standards (Al-Hanawi & Qattan, 2019). These paradigms function in global healthcare. Lean process optimization and bottleneck reduction have increased operational efficiency. Agile has quickly implemented telemedicine systems and electronic health records, while Six Sigma has reduced medical errors and improved patient safety. These strategies boost patient outcomes, staff satisfaction, and cost efficiency (Al-Hanawi, Almubark, et al., 2020).

Project management is rarely employed in Saudi healthcare despite its benefits. Saudi healthcare lags behind global healthcare enterprises in project management framework utilization. Slow acceptance hinders healthcare improvement programs. Unstructured project management causes delays, cost overruns, and poor performance in Saudi Arabia. These concerns impact healthcare system sustainability and project success (Al-Darrab et al., 2013). Lack of a standardized framework tailored to Saudi healthcare, unwillingness to change, and poor project management training have impeded widespread implementation. Project success requires flexibility and inventiveness, which hierarchical organizational structures and traditional management practices hinder. Saudi healthcare staff rarely employ project management, restricting its use. These obstacles require intentional project management integration into healthcare operations to assist organizations overcome them and improve service delivery (Al Khamisi et al., 2019).

Population growth, rising chronic disease rates, and Vision 2030's ambitious goals strain Saudi Arabia's healthcare system, making project management crucial. Vision 2030 emphasizes quality, accessibility, and cost-effective healthcare reform. Project management frameworks help achieve these aims by providing tools and methodologies for large projects. Telemedicine and EHR expansion require careful planning, resource allocation, and stakeholder participation, which project management aids (Al Asmri et al., 2019). The Saudi healthcare system may increase efficiency, results, and quality via project management frameworks. Research reveals Saudi Arabian healthcare companies must implement these methods to meet population needs and address new concerns. PMBOK, Lean, Agile, and Six Sigma help streamline processes and maximize resource use in Saudi healthcare organizations to improve patient care and operational performance (Aina et al., 2019). Finally, project management can change Saudi healthcare. PMBOK, Lean, Agile, and Six Sigma have improved efficiency and effect worldwide, but their poor adoption in the Kingdom wastes an opportunity. To achieve Vision 2030 and develop a high-quality, sustainable healthcare system, healthcare institutions must eliminate implementation obstacles and improve project management (Aichouni et al., 2014).

Many global studies show that project management improves healthcare. Structured planning, execution, and assessment improve patient care, operational efficiency, and resource usage in healthcare organizations. Agile, Lean, Six Sigma, and PMBOK are increasingly recognized for their ability to manage complex healthcare projects and produce measurable results (Ahmed et al., 2019). Lean and Six Sigma methods can streamline workflows, reduce waste, and boost efficiency. Lean reduces non-value-added tasks, optimizes resource allocation, and enhances patient flow. Using data, Six Sigma reduces process variations and errors, enhancing healthcare quality and precision. Wait times, medical errors, and clinical and administrative resource allocation have improved with these strategies. These results improve patient satisfaction, operational expenses, and healthcare staff productivity (A. Alzamil, 2014).

Agile methods are beneficial in dynamic healthcare environments that require change. Agile's iterative approach and continuous feedback help healthcare businesses adjust fast to patient needs and regulatory changes. This addresses increased patient volumes, resource constraints, and evolving healthcare standards. Telemedicine platforms and electronic health records, which require incremental development and stakeholder interaction, have been implemented using agile (Abdulghani et al., 2014). Agile methods improve Egyptian medical treatment, according to Alsabban and Kitto (2018). Hospitals improved service delays, patient care, and quality with iterative techniques, according to the report. Saudi healthcare infrastructure is stressed by rising demand, resource restrictions, and patient volumes. Project management methods like Agile can help Saudi healthcare enterprises overcome these obstacles and improve service delivery (Aichouni et al., 2014).

Healthcare project management works worldwide, but its efficacy in Saudi Arabia is unknown. Foreign studies can help, but they may not fully explain the Saudi healthcare system's cultural, organizational, and regulatory factors. Hierarchical systems in Saudi healthcare may hinder decision-making and stakeholder involvement. The Kingdom's healthcare system is privatized, digitalized, and value-based under Vision 2030. Project management must reflect national aspirations and local healthcare realities (Aina et al., 2019). Healthcare in Saudi Arabia can benefit from Vision 2030-aligned project management. Vision 2030 reforms healthcare by enhancing access, quality, and efficiency. Project management frameworks enable large-scale telemedicine, primary care network, and EHR projects. Understanding the local context is crucial to optimizing project management's benefits in achieving these goals. Address change resistance, project management training shortages, and leadership support concerns (Al Asmri et al., 2019).

Saudi Arabian healthcare research can fill these gaps using evidence-based project management integration solutions. Vision 2030's focus on innovation could lead to studies on how Lean or Agile methods can improve Saudi hospital efficiency or digital health implementation. Adoption issues including organizational resistance and resource limits may drive concentrated steps to ensure success (Al Khamisi et al., 2019). Besides operational benefits, project management can encourage responsibility, teamwork, and progress in Saudi healthcare firms. Sustainable healthcare delivery improvements require transparent communication, stakeholder participation, and data-driven decision-making. Quality improvement programs use performance measurements and feedback loops to evaluate progress, identify areas for improvement, and stay on target (Al-Darrab et al., 2013). Project management methods improve healthcare outcomes by solving sector issues. Saudi Arabia restricts Lean, Six Sigma, and Agile deployment despite global evidence that they work, indicating a research gap. To optimize benefits, Saudi healthcare's cultural and organizational dynamics and Vision 2030 goals must be considered in project management. These frameworks can transform Saudi Arabia's healthcare industry by improving patient care, operational efficiency, and Vision 2030 goals (Al-Hanawi, Almubark, et al., 2020).

Saudi Arabia faces several challenges with healthcare project management. These constraints prevent the widespread use of structured methods like PMBOK, Lean, and Agile to improve healthcare quality and efficiency. These issues must be resolved to increase healthcare quality and align with Vision 2030 (Al-Hanawi, Mwale, et al., 2020). Organizational change resistance hinders Saudi healthcare project management. Reluctance stems from hierarchical organizational structures and traditional management approaches in many regional healthcare facilities. Ad hoc decision-making is better than methodical planning in such situations. Healthcare firms struggle with methodical project management. This slowness is compounded by healthcare workers and leaders' ignorance of PMBOK and Agile's benefits to healthcare delivery (Al-Hanawi & Qattan, 2019). Leaders and employees often resist change culturally. If benefits are unclear or training and support are missing, new methods may be disruptive. Bureaucratic and resource-intensive project management frameworks generate opposition. Project management must be promoted and shown to overcome cultural opposition through targeted campaigns and experimental projects (Al-Yami & Sanni-Anibire, 2019).

Another challenge is Saudi healthcare personnel's project management inexperience. Although global healthcare systems increasingly incorporate project management, many Saudi healthcare organizations lack trained project managers and personnel familiar with these ideas. Project management expertise and experience are lacking in healthcare, making organized

procedures difficult to employ. Many healthcare workers are unfamiliar with Lean, which lowers waste and maximizes resources, or Agile, which emphasizes adaptability and incremental adjustments. These practices are hard to integrate into healthcare programs without this expertise, reducing efficiency and quality (Alalawi et al., 2016). Leadership inconsistency worsens project management skills. Leadership transforms organizations and fosters accountability, collaboration, and creativity. Leadership in many Saudi healthcare institutions is unaware of project management's benefits or fails to prioritize its implementation. Successful project management requires leadership. Without support, project money, training, and technology are difficult to get. Project managers that reject best practices perpetuate outdated methods (Alamodi et al., 2014).

Another issue is the lack of a Saudi healthcare project management framework. Cultural and organizational factors make PMBOK, Lean, and Agile difficult to deploy in Saudi Arabia. Saudi hospitals have unique regulatory and operational needs that generic frameworks cannot address. These techniques may not satisfy Saudi healthcare professionals or meet requests without localization. Studies emphasize the need for context-specific frameworks that address these factors. Al-Mutairi (2020) stresses the importance of capacity-building and leadership engagement to overcome these barriers and integrate project management (Alasiri & Mohammed, 2022). Multifaceted techniques are needed to address these obstacles. First, capacity-building courses should teach healthcare personnel project management. Formal training, certifications, and healthcare workshops are included. 2 Increase leadership participation to highlight project management across the business. Leaders should support these methods, give resources, and encourage systematic planning and development (Alasiri & Mohammed, 2022).

Pilot projects can prove project management's value and gain organizational acceptance. Healthcare organizations can enhance patient outcomes, efficiency, and resource allocation by starting small. Scaling up these results enables wider deployment (Albalawi et al., 2020). Creating a Saudi healthcare framework is essential. This framework should include international best practices and local cultural, organizational, and regulatory factors. This framework can help Saudi healthcare companies implement and sustain project management by meeting their needs (Albarrak et al., 2019). In conclusion, Saudi Arabia's healthcare project management has significant challenges, although they are manageable. Strategic interventions can address organizational change resistance, training gaps, leadership support gaps, and framework gaps. Saudi healthcare organizations can improve quality, Vision 2030, and project management by tackling these obstacles (Aldosari, 2014).

Healthcare reform is part of Vision 2030's economic, infrastructure, and social reforms for Saudi Arabia. To achieve ambitious goals like privatization, digital transformation, and value-based care, Vision 2030 needs efficient and effective large-scale activities. The systematic processes and tools for planning, implementing, and evaluating project management techniques support these goals and offer great potential for healthcare reform in the Kingdom (Algahtani et al., 2021). Vision 2030 strives to fulfill increased healthcare demand due to population growth, chronic diseases, and rising costs. Telemedicine and EHRs must be used to overcome these challenges and attain the vision's quality and accessibility in healthcare. Project management tactics help generate accurate timelines, allocate resources efficiently, and engage stakeholders throughout the project (Alhaqbani et al., 2016).

Telemedicine adoption involves rigorous project planning to address technical, operational, and regulatory problems. PMBOK and Agile can handle these issues. PMBOK's scope, cost, and quality management ensures legal and corporate compliance for telemedicine projects. Agile methods allow healthcare providers to quickly design and launch telemedicine services to meet patient needs and changing circumstances (ALHUMAYN et al., 2017). EHR deployment shows how project management fits Vision 2030's digital transformation goals. EHRs streamline patient data, care coordination, and clinical decision-making. Planning and resource allocation are essential for its deployment. In EHR system rollouts, Lean and Six Sigma minimize waste and optimize operations, minimizing disruptions and benefiting patients and healthcare providers (Almahmoud et al., 2012).

Project management methodologies match Vision 2030 aims, but Saudi Arabia's unique circumstance necessitates considerable international standardization. Studies reveal that these strategies must be adapted to account for local cultural, organizational, and regulatory problems affecting healthcare project implementation. Bureaucratic Saudi state healthcare emphasizes justice and centralization. Project management in this scenario must balance efficiency and healthcare system priorities (Almajed, 2017). Mani and Goniewicz (2024) stress the need to tailor project management to Saudi healthcare. General-purpose PMBOK, Lean, and Agile may not work for Saudi healthcare. Translating these concepts requires considering cultural variables including hierarchical decision-making and Kingdom-specific legislation. Project management must alter for Saudi healthcare projects to comply with national policies and involve government stakeholders (Almalki et al., 2012).

Developing healthcare companies' Vision 2030 project management skills is also important. Project management skills are lacking in Saudi healthcare staff, limiting their application of these ideas. Not all executives prioritize project management for organizational

success. Specialized training, leadership development, and methodical planning and continuous improvement are needed to close these gaps (Almutairi et al., 2019). Pilot programmes can help Saudi healthcare adopt international standards. Small-scale implementations can demonstrate project management's benefits to healthcare organizations and spur uptake. A telemedicine platform pilot project using Agile methodology might expose the challenges and opportunities of implementing this strategy across the healthcare system. These pilot projects demonstrate project management's practical benefits and how to apply them to Vision 2030 projects (Alotaibi et al., 2016).

Saudi Arabia's healthcare sector needs a consistent project management framework to succeed. The Kingdom's healthcare institutions would benefit from this framework's global best practices and local adjustments. This framework links project management to Vision 2030 goals to guide reforms, operational efficiency, and patient care (Alomi et al., 2018). In conclusion, Vision 2030 offers a rare chance to improve Saudi Arabia's healthcare system, and project management is crucial. The PMBOK, Lean, Agile, and Six Sigma methodologies design, execute, and evaluate complex healthcare projects. These methods must be tailored to Saudi Arabia to succeed. Project management may help Saudi Arabia achieve Vision 2030's ambitious goals of an efficient, accessible, and patient-centered healthcare system by improving training, leadership participation, and framework localization (Alotaibi et al., 2016).

Healthcare project management adoption requires leadership and training to change culture, promote cooperation, and ensure responsibility. Leadership is essential to overcome change resistance and establish an orderly project planning and execution culture. Saudi healthcare project management integration is hampered by leadership inconsistency. The lack of effective leadership and training systems and healthcare staff skills deficiency make PMBOK, Lean, and Agile deployment problematic (Alquwez et al., 2018). Leadership aids project management adoption in numerous ways. Leaders shape company priorities and foster innovation and growth. Champions can ensure project management gets attention and resources. Healthcare leaders must accept project management as a strategic goal and engage in its implementation. Leaders promote accountability, teamwork, and project alignment with company goals to improve organizations (Alrasheedy et al., 2019).

Project management leadership in Saudi Arabia varies. Structured project management improves quality, but few healthcare leaders know this. Miscommunication can replace project management with reactive organizational solutions. Leaders' project management focus is further limited by competing demands and resources. Healthcare companies without executive support struggle with project management (Alshahrani et al., 2019). Project management

adoption requires training. Healthcare workers' lack of project management training and skills affects execution, studies reveal. This skills gap is substantial since many Saudi healthcare workers are unfamiliar with Lean, Agile, or PMBOK. Lack of training in these principles may cause healthcare staff to oppose and underperform projects (Alshahrani et al., 2018).

Healthcare training is needed to close this skills gap. Project management workshops and certifications teach healthcare professionals these methods. Lean training can help workers identify operational inefficiencies and optimize resource consumption. Agile certification could speed up team responses to changing patient and regulatory needs. Healthcare professionals can improve their project management and quality abilities in these programs (Alshuwaikhat et al., 2016). To support project management goals, healthcare personnel need leadership training. These programs can teach leaders how project management fosters organizational change and its strategic value. Leadership seminars may address change management, stakeholder engagement, and resource allocation. These programs empower healthcare leaders to promote and use project management principles, transforming organizations (Alzghaibi, 2022).

Increased leadership participation and staff training can assist overcome change aversion, a common hospital project management challenge. Leadership may promote worker ownership and buy-in by delivering project management and training. This collaborative approach reduces opposition and integrates project management into the company culture (Ghaithan et al., 2021). Project management adoption in Saudi Arabia requires devoted leadership and training. Pilot projects can verify these methods work and get leadership and staff support. A hospital pilot study using Lean to cut wait times may improve efficiency and patient happiness. Successful projects can inspire leaders and employees to use project management principles throughout the company (Hassan et al., 2022).

For high-quality training and certifications, healthcare enterprises might partner with educational and professional organizations. Working with the Project Management Institute (PMI) or local universities ensures that training programs match global standards and Saudi healthcare demands (Hassanain, 2017). Finally, project management in Saudi Arabia's healthcare system requires leadership and training. Healthcare professionals receive specialized training to use leadership principles like cultural change, organization, and responsibility. By improving leadership engagement and staff competencies, healthcare firms can overcome adoption barriers, increase quality, and align with Vision 2030's revolutionary goals. Leadership and training may enhance project management's benefits for patient care, operational efficiency, and system performance in Saudi healthcare (Hassanain et al., 2013).

In Saudi Arabia, project management and healthcare quality improvement research is scarce and complicated. Project management improves efficiency and effectiveness in many industries, but its use in healthcare, notably in Saudi Arabia, is underexplored. Building, manufacturing, and technology literature praises project management. Saudi Arabia has not extensively examined its effects on healthcare, notably quality improvement. This research gap highlights the need to examine how project management might address Saudi healthcare's unique challenges (Aldosari, 2014). Global studies suggest that PMBOK, Lean, Agile, and Six Sigma project management increase operational efficiency, resource optimization, and healthcare. These strategies increase healthcare patient satisfaction, delays, and costs. These findings may not apply to Saudi Arabia due to business culture, regulatory frameworks, and healthcare system architecture. The Saudi healthcare system's public-private mix and Vision 2030 influence present distinct challenges and opportunities that current studies have not addressed (Albarrak et al., 2019).

Healthcare project management studies often focus on high-income countries with strong integration systems. Emerging country healthcare research on fast population expansion, chronic diseases, and budget constraints rarely address Saudi Arabia. Saudi Arabia has no evidence that Lean and Agile methodologies improve hospital processes and resource allocation, whereas Egypt has. This gap prevents Kingdom healthcare organizations from using context-specific insights or project management integration methods to improve quality (Albalawi et al., 2020). The literature also ignores Saudi Arabia's healthcare project management implementation challenges. Hierarchical organizational structures, change aversion, inadequate training, and no standardized healthcare project management technique exist. Project management must overcome these obstacles to increase healthcare quality. This gap emphasizes the need for project management impact research and implementation solutions (Alasiri & Mohammed, 2022).

Vision 2030 promotes healthcare modernization and quality improvement, but project management research is scarce. Proposed Vision 2030 project management methods for privatization, digital transformation, and patient care have untapped potential. This research could help policymakers and healthcare officials integrate project management into Kingdom reforms (Alamodi et al., 2014). Finally, study shortcomings include the lack of context-specific frameworks, scant understanding of how project management methodologies might improve healthcare quality in Saudi Arabia, and failure to examine implementation restrictions. These gaps must be closed for optimal healthcare delivery, Vision 2030 alignment, sustainable patient outcomes, and operational efficiency. Project management and healthcare quality improvement

in Saudi Arabia are examined in this study to fill these gaps and contribute to theory and practice (Alalawi et al., 2016).

Theoretical Framework of the Study

This study uses project management and healthcare quality improvement theories to evaluate how project management practises affect healthcare quality initiatives. The Project Management Body of Knowledge (PMBOK) framework, which promotes best practices for project management in all industries, including healthcare, underpins this research. PMBOK addresses scope, time, cost, quality, communication, risk, and stakeholder management to ensure healthcare quality improvement initiatives are executed effectively, within budget, and on time. Health organizations can develop, execute, and monitor projects to improve patient care and operational efficiency using these principles (Khan et al., 2019). This study uses project management and healthcare quality improvement theories to evaluate how project management practises affect healthcare quality initiatives. The Project Management Body of Knowledge (PMBOK) framework, which promotes best practices for project management in all industries, including healthcare, underpins this research. PMBOK addresses scope, time, cost, quality, communication, risk, and stakeholder management to ensure healthcare quality improvement initiatives are executed effectively, within budget, and on time. Health organizations can develop, execute, and monitor projects to improve patient care and operational efficiency using these principles.

Lean and Six Sigma approaches, used in healthcare to improve efficiency and quality, offer another theoretical foundation. Lean concepts eliminate waste and optimize resource utilization, whereas Six Sigma reduces healthcare delivery variance and errors. These structured, data-driven quality improvement methods match project management practices. The study also uses Donabedian's model of healthcare quality, which emphasizes structure, procedure, and outcomes. This model helps assess how project management affects healthcare initiative structure and patient outcomes. Finally, the Theory of Change will be examined to determine how project management may transform healthcare organizations. Project management is structured, and this theory examines how change is implemented in well-planned processes. These theoretical views give the study a solid framework for examining project management's impact on healthcare quality.

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Chapter 3: Research Methodology

Introduction

This study adopts a quantitative research approach to examine the impact of project management practices on healthcare quality improvement initiatives in Saudi Arabia. A quantitative approach is appropriate as it allows for objective measurement and analysis of project management practices and their relationships with healthcare quality outcomes. By employing statistical methods, the study provides evidence-based insights into the effectiveness of structured project management frameworks in healthcare settings. The study also explores the challenges faced by healthcare professionals and administrators in implementing these practices.

Methodology and Research Methods

Research Design

This study employs a descriptive and correlational research design to investigate the impact of project management practices on healthcare quality improvement initiatives in Saudi Arabia. The descriptive aspect focuses on documenting and analyzing the current state of project management practices within the healthcare sector, including how these practices are implemented and their alignment with recognized frameworks such as PMBOK, Lean, Agile, and Six Sigma. By detailing these practices, the study aims to understand their prevalence and application in public and private healthcare institutions. The correlational aspect examines the relationships between project management practices and specific healthcare outcomes, such as improvements in patient care, operational efficiency, and cost-effectiveness (Tawfik et al., 2022). This dual design enables a comprehensive exploration of the topic by identifying the nature and scope of project management practices while uncovering their potential influence on healthcare outcomes. Through correlation analysis, the study investigates specific linkages, such as the impact of effective planning on patient care or resource optimization on operational efficiency, providing valuable insights into the critical factors driving success in healthcare quality improvement (Shash & Qarra, 2018).

Population and Sampling

The target population for this study includes healthcare professionals, project managers, and administrators involved in quality improvement initiatives across Saudi Arabia. This

population spans both public and private hospitals to ensure a holistic understanding of the sector. The diversity of respondents is essential, as it captures a wide range of perspectives on the implementation and impact of project management practices. Stratified random sampling is used to ensure representativeness, with stratification based on hospital type (public or private), geographic location (urban or rural), and professional role (e.g., project managers, clinicians, quality officers) (Senitan et al., 2018). This stratification guarantees that the sample reflects the variability within the healthcare system. A minimum sample size of 300 respondents is determined to achieve statistical validity and ensure the reliability of findings. This sample size provides sufficient power to detect meaningful relationships between project management practices and healthcare outcomes, allowing for robust and generalizable conclusions (O. AlSehaimi et al., 2014).

Data Collection Tools

Structured questionnaires are employed as the primary data collection tool, designed to capture quantitative data on project management practices, their outcomes, and the challenges encountered during implementation. The questionnaire is divided into sections to ensure comprehensive coverage of the research objectives. The first section collects demographic and organizational information, such as the respondent's role, years of experience, hospital type, and location. The second section assesses project management practices, focusing on planning, execution, monitoring, and control, and aligns questions with PMBOK and Lean Six Sigma principles (Mohsen Alsufyani et al., 2020). The third section evaluates perceived outcomes, including patient care quality, operational efficiency, and resource utilization. The fourth section identifies challenges, such as resistance to change, inadequate training, and leadership support. The final section gathers suggestions for enhancing the integration of project management practices in healthcare. Likert scales are used to assess participants' perceptions, ranging from "Strongly Disagree" to "Strongly Agree." The questionnaire undergoes pilot testing with 20–30 participants to ensure clarity, reliability, and validity, with adjustments made based on feedback (Mahamid, 2016).

Data Collection Process

Data collection is conducted using both online surveys and physical distribution to healthcare organizations across Saudi Arabia. Online platforms are utilized to maximize reach, particularly for respondents in remote or rural areas, while physical distribution targets

hospitals with limited digital access. Ethical approval is obtained from relevant authorities, ensuring compliance with ethical guidelines. Participants receive detailed information about the study's purpose, their role, and their rights, including the option to withdraw at any time (Khan et al., 2019). The process prioritizes confidentiality and anonymity, ensuring that respondent identities and organizational details are protected. Participation is entirely voluntary, with no incentives provided, fostering a commitment to ethical research practices. This dual approach to data collection ensures a high response rate and diverse representation across the healthcare sector (Hassanain et al., 2013).

Data Analysis

Data analysis is conducted using SPSS, employing both descriptive and inferential statistical methods to address the study's research questions and objectives. Descriptive statistics summarize respondent demographics, organizational characteristics, and trends in project management practices. They also highlight common challenges faced during implementation. Inferential statistics delve deeper into the relationships between variables. Correlation analysis identifies associations between project management practices and healthcare outcomes, such as the relationship between effective resource allocation and patient care quality (Hassan et al., 2022). Regression analysis pinpoints the project management practices with the most significant impact on healthcare outcomes, isolating key predictors of success. Additionally, factor analysis is employed to identify underlying dimensions of project management practices and challenges, providing nuanced insights into the data. These analytical methods offer a comprehensive understanding of how project management practices influence healthcare quality and operational efficiency in Saudi Arabia (Banani et al., 2016).

Ethical Considerations

The study adheres strictly to ethical standards throughout its design and implementation. Informed consent is obtained from all participants, who are fully informed about the study's purpose, their involvement, and their rights. Confidentiality is maintained by anonymizing respondent identities and organizational details, ensuring privacy and data security. Participation is voluntary, with no coercion or incentives offered, fostering an environment of trust and openness. These ethical measures ensure that the research is conducted responsibly and aligns with international standards for ethical research practices.

Study Scope and Limitations

This study focuses exclusively on the healthcare system in Saudi Arabia, examining the implementation of project management practices within this unique context. While the findings provide valuable insights, the scope is limited to Saudi Arabia and may not be generalizable to other regions or healthcare systems with differing cultural, organizational, or regulatory environments. Additionally, the reliance on self-reported data may introduce response biases. To mitigate this, the questionnaire design incorporates cross-validation questions and ensures anonymity to encourage honest responses. Despite these limitations, the study provides a robust foundation for understanding the role of project management in healthcare quality improvement in Saudi Arabia.

Study Determinants

The study examines numerous factors that affect Saudi Arabian hospital quality improvement project management success. These determinants are chosen to address the interaction between organizational, operational, and contextual aspects in the healthcare system and meet study goals. This discussion shows how these characteristics affect healthcare project management approaches, adoption, and outcomes. Leadership support is crucial to project management adoption. Leadership that promotes responsibility, collaboration, and creativity allows healthcare organizations to adopt organized practices. Resource allocation, training, and strategic alignment with national programs like Vision 2030 are possible for leaders that value project management. Leadership is crucial to project management framework success since inconsistent leadership or resistance to change can impede implementation.

Project management training and skills among healthcare workers also matter. Many Saudi healthcare workers lack official training or expertise in PMBOK, Lean, Agile, and Six Sigma, despite their global recognition. This knowledge gap hinders their use in healthcare quality improvement efforts. Healthcare personnel need specialized training and certification to enhance capacity and capabilities. Saudi Arabia's healthcare system's organizational culture also affects project management. Modern project management frameworks may be hindered by hierarchical systems, old management methods, and change resistance. Stiff organizations may struggle to implement Agile and other collaborative methods. Healthcare institutions must promote transparency, innovation, and ongoing improvement to address these cultural issues.

Resource availability and allocation affect project management outcomes. Effective healthcare project management requires appropriate financial, human, and technology resources. Quality improvement projects might be delayed by funding constraints, staff shortages, and infrastructural issues. Insufficient access to modern digital technologies like EHRs and telemedicine platforms might also limit project management benefits. Saudi regulatory and policy frameworks are also important. Project planning, execution, and monitoring must be structured to meet healthcare legislation and Vision 2030 goals. Regulatory barriers and bureaucratic delays can limit project progress and harm results. To overcome these limitations, worldwide project management methods must be adapted to Saudi regulations and culture. Finally, stakeholder participation and communication matter. Administrators, clinicians, patients, and policymakers participate in quality improvement efforts. Communication and stakeholder engagement are crucial for aligning goals, managing expectations, and achieving project success. Projects without clear communication or stakeholder engagement risk delays, inefficiencies, and poor results.

Finally, these factors must be addressed to establish project management in Saudi Arabia's healthcare sector. Healthcare organizations can use project management to improve quality and support Vision 2030 by fostering leadership commitment, improving training, adapting organizational culture, ensuring resource availability, aligning with regulatory requirements, and engaging stakeholders.

Chapter 4: Results

Introduction

This chapter presents the findings of the study, analyzing the impact of project management practices on healthcare quality improvement initiatives in Saudi Arabia. The results are structured to address the study's research questions and hypotheses, providing insights into the extent of project management implementation, its effectiveness, and the challenges faced by healthcare organizations. The analysis includes descriptive statistics, reliability testing, correlation analysis, and multivariate analysis to validate the relationships between key variables. The first section of this chapter explores demographic data, summarizing the backgrounds of respondents, including their roles, experience, and organizational settings. This provides context for understanding their perspectives on project management practices. The second section presents descriptive statistics, highlighting the mean scores and standard deviations of project management implementation, healthcare outcomes, leadership support, and alignment with Vision 2030. This helps identify trends and areas for improvement in project execution within healthcare settings.

Subsequently, the reliability and validity analysis ensures that the study's measurement constructs are statistically robust, confirming the reliability of the survey instruments used. The correlation analysis follows, examining the relationships between project management practices, healthcare quality, leadership, challenges, and strategic alignment with Vision 2030. These findings help determine whether project management significantly influences healthcare efficiency and patient outcomes. Finally, the chapter concludes with multivariate analysis, exploring how different project management factors contribute to healthcare quality improvement. The results provide valuable insights into the role of leadership, training, and resource allocation in ensuring project success. These findings will serve as the foundation for the discussion in the next chapter, where the implications, recommendations, and future research directions will be explored in greater detail.

Demographic Data Analysis

Table 15: Your Role in the Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Project Manager	31	10.3	10.3	10.3
	Healthcare Administrator	95	31.7	31.7	42.0
	Clinician/Physician	43	14.3	14.3	56.3

	Quality Officer	32	10.7	10.7	67.0
	Others	99	33.0	33.0	100.0
	Total	300	100.0	100.0	

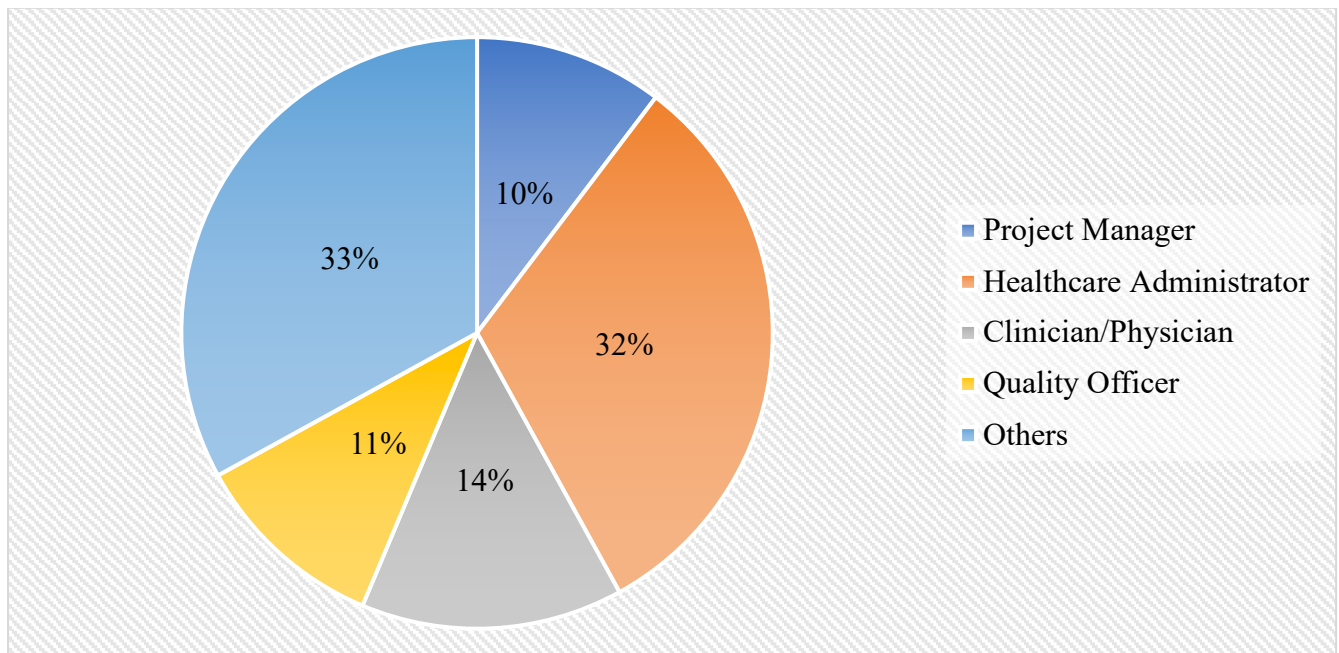


Figure 8: Your Role in the Organization

The demographic analysis of respondents' roles in their organizations indicates a diverse distribution of healthcare professionals involved in quality improvement initiatives. Among the 300 participants, healthcare administrators constitute the largest group, representing 31.7% of the total sample. This suggests that administrative personnel play a crucial role in overseeing project management practices within healthcare settings. Clinicians and physicians account for 14.3%, highlighting the involvement of medical professionals in project management efforts. Project managers (10.3%) and quality officers (10.7%) also contribute significantly, emphasizing the integration of structured project management in healthcare operations. The largest category (33%) falls under "Others," which may include support staff, IT professionals, or financial officers involved in healthcare project execution. This distribution reflects a multidisciplinary approach to healthcare project management, underscoring the need for collaboration between administrative, clinical, and managerial stakeholders in implementing quality improvement initiatives.

Table 16: Type of Organization					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public hospital	150	50.0	50.0	50.0

	Private hospital	72	24.0	24.0	74.0
	Other healthcare facility	78	26.0	26.0	100.0
	Total	300	100.0	100.0	

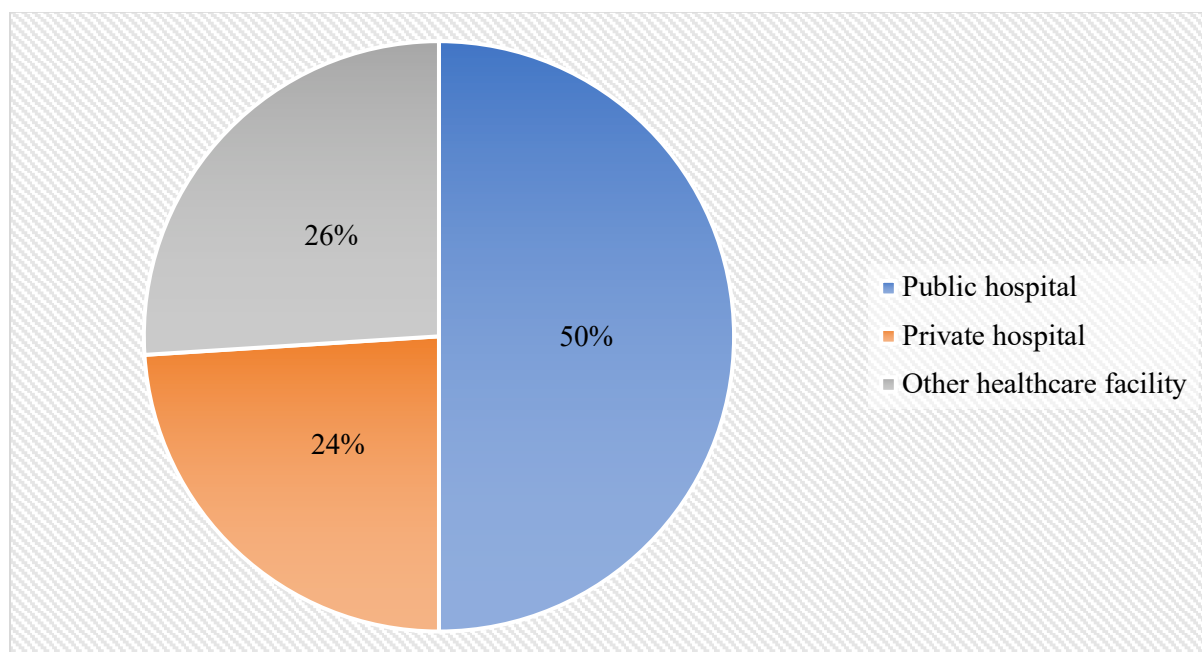


Figure 9: Type of Organization

The distribution of respondents based on the type of organization shows that public hospitals make up the largest segment, accounting for 50% of the total sample, indicating the dominant role of government-funded healthcare institutions in Saudi Arabia. Private hospitals constitute 24%, reflecting the growing but comparatively smaller role of the private sector in healthcare quality improvement initiatives. Additionally, 26% of respondents belong to other healthcare facilities, which may include specialized clinics, primary care centers, and research institutions. This distribution highlights the significant presence of public healthcare services while also acknowledging the contributions of private and other healthcare entities in advancing project management practices for quality improvement across different healthcare settings.

Table 17: Years of Experience in the Healthcare Sector

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 Years	53	17.7	17.7	17.7
	5 to 10 Years	53	17.7	17.7	35.3
	11 to 15 Years	76	25.3	25.3	60.7
	More than 15 Years	118	39.3	39.3	100.0
	Total	300	100.0	100.0	

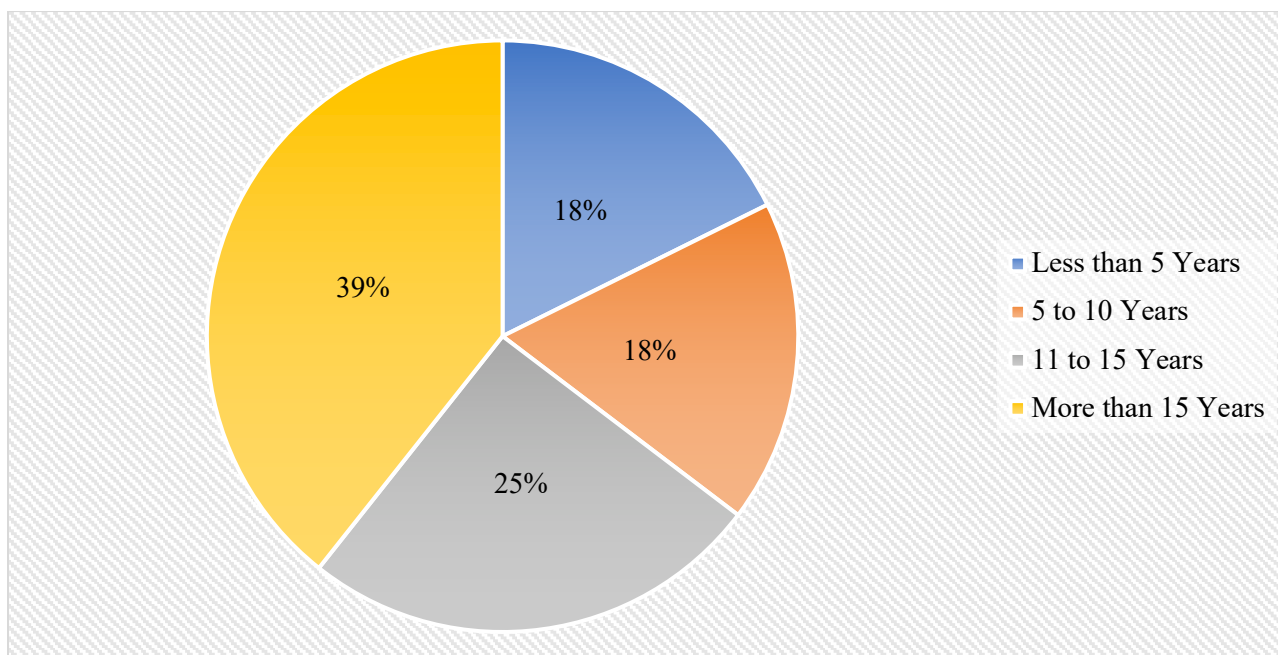


Figure 10: Years of Experience in the Healthcare Sector

The analysis of respondents' years of experience in the healthcare sector reveals a diverse range of professional expertise. The largest proportion, 39.3%, has more than 15 years of experience, indicating a strong presence of seasoned professionals who bring extensive industry knowledge to project management practices. Those with 11 to 15 years of experience make up 25.3%, reflecting a significant number of mid-career professionals actively contributing to healthcare quality improvement initiatives. Respondents with 5 to 10 years of experience and less than 5 years of experience each account for 17.7%, suggesting that a mix of emerging and experienced professionals are engaged in healthcare project management. This distribution highlights a well-balanced workforce where both experienced leaders and newer professionals collaborate to enhance healthcare quality through structured project management approaches.

Table 18: Geographic Location of your Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	221	73.7	73.7	73.7
	Rural	79	26.3	26.3	100.0
	Total	300	100.0	100.0	

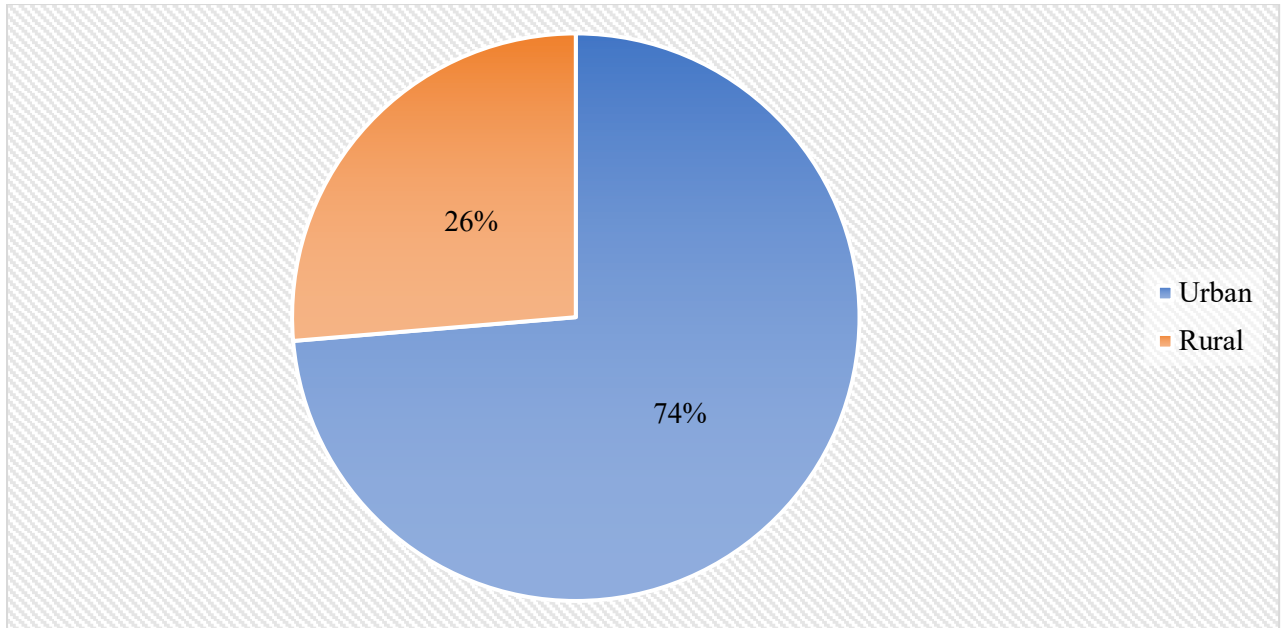


Figure 11: Geographic Location of your Organization

The geographic distribution of respondents' organizations shows that the majority, 73.7%, are located in urban areas, indicating that healthcare quality improvement initiatives and project management practices are more prevalent in well-developed, metropolitan regions. In contrast, 26.3% of respondents work in rural healthcare facilities, highlighting the presence of healthcare services in less densely populated areas, though to a lesser extent. This distribution suggests that urban healthcare institutions may have greater access to resources, infrastructure, and specialized personnel for implementing structured project management frameworks, while rural facilities may face unique challenges that require tailored strategies to enhance healthcare quality and efficiency.

Table 19: Have you Received Formal Training in Project Management?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	173	57.7	57.7	57.7
	No	127	42.3	42.3	100.0
	Total	300	100.0	100.0	

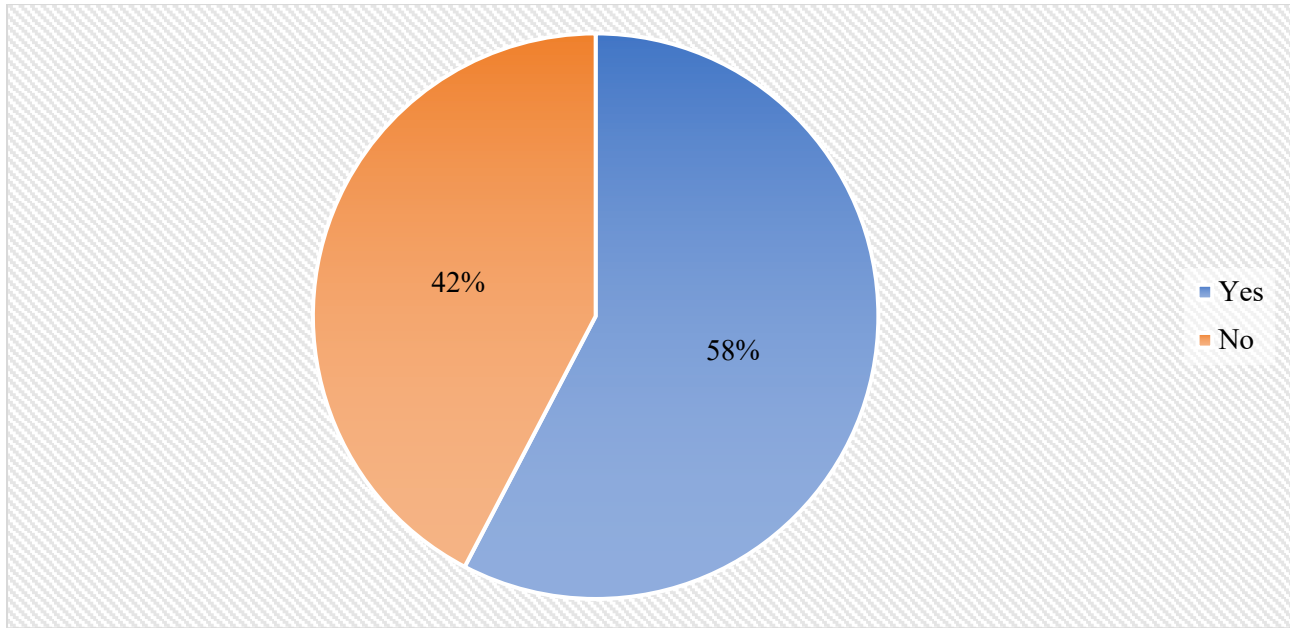


Figure 12: Have you Received Formal Training in Project Management?

The analysis of respondents' formal training in project management reveals that 57.7% have received formal training, indicating a majority with structured knowledge and skills in project management methodologies such as PMBOK, Lean, or Agile. However, a significant 42.3% of respondents have not undergone formal training, suggesting a potential gap in expertise that could impact the effective implementation of project management practices in healthcare quality improvement initiatives. This finding highlights the need for targeted training programs and capacity-building efforts to enhance project management competencies among healthcare professionals, ensuring better planning, execution, and monitoring of quality improvement projects.

Results of Descriptive Statistics

Table 20: Descriptive Statistics of Project Management Practices

	N	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Our organization consistently uses structured project management frameworks such as PMBOK, Lean, or Agile.	300	3.47	.905	.819	-.561	.141
Project management practices help ensure quality improvement	300	3.72	.889	.791	-.712	.141

initiatives are completed on time.						
Stakeholder engagement is effectively managed in our quality improvement projects.	300	3.67	.919	.844	-.705	.141
Resource allocation is optimized through the use of project management practices.	300	3.69	.867	.751	-.743	.141
Monitoring and control mechanisms are in place during the execution of quality improvement projects.	300	3.69	.834	.696	-.652	.141
Valid N	300					

The descriptive statistics of project management practices indicate that respondents generally perceive their organizations as employing structured project management approaches with moderate effectiveness. The statement "Project management practices help ensure quality improvement initiatives are completed on time" received the highest mean score (3.72), suggesting that timeliness is a key benefit of structured project management in healthcare settings. "Stakeholder engagement is effectively managed" (mean 3.67) and "Resource allocation is optimized" (mean 3.69) also scored relatively high, reflecting a recognition of project management's role in organizing resources and involving key stakeholders. However, the statement "Our organization consistently uses structured project management frameworks such as PMBOK, Lean, or Agile" received the lowest mean score (3.47), indicating that while these methodologies are applied, their usage may not yet be fully standardized or consistently implemented. The skewness values, all negative, suggest a tendency toward agreement, though with some variability. Overall, these results highlight the perceived benefits of project management in ensuring efficiency and quality in healthcare projects while also pointing to areas for potential improvement.

Table 21: Descriptive Statistics of Healthcare Outcomes

	N	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
The use of project management has led to	300	3.81	.782	.611	-.703	.141

improved patient care quality in our organization.						
Operational efficiency has significantly increased through structured project management practices.	300	3.70	.841	.707	-.568	.141
Quality improvement projects have successfully reduced patient wait times.	300	3.78	.852	.725	-.615	.141
Project management practices have improved staff satisfaction with their roles in healthcare initiatives.	300	3.75	.861	.742	-.608	.141
The integration of project management has positively influenced patient safety outcomes.	300	3.78	.803	.645	-.640	.141
Valid N	300					

The descriptive statistics on healthcare outcomes indicate that project management practices are perceived to have a positive impact on various aspects of healthcare quality improvement. The highest-rated statement, "The use of project management has led to improved patient care quality in our organization" (mean 3.81), suggests that structured project management contributes significantly to enhancing patient care. Similarly, "Quality improvement projects have successfully reduced patient wait times" and "The integration of project management has positively influenced patient safety outcomes" both received a mean score of 3.78, indicating that effective project management practices contribute to improved efficiency and patient safety. "Operational efficiency has significantly increased" (mean 3.70) and "Project management practices have improved staff satisfaction with their roles" (mean 3.75) also scored relatively high, reflecting the role of structured processes in improving workflow and staff engagement. The negative skewness values suggest a general agreement among respondents, though with some variation. Overall, these findings highlight the critical role of project management in driving efficiency, safety, and patient-centered improvements in healthcare settings.

Table 22: Descriptive Statistics of Challenges in Implementing Project Management Practices

	N	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Resistance to change is a significant barrier to implementing project management in our organization.	300	3.76	.826	.683	-.680	.141
Lack of project management training among staff hinders the success of quality improvement initiatives.	300	3.74	.856	.733	-.767	.141
Bureaucratic hurdles make it difficult to adopt structured project management practices.	300	3.68	.869	.755	-.616	.141
Limited resources (e.g., time, funding, personnel) are a challenge to implementing project management in quality improvement projects.	300	3.83	.841	.708	-.524	.141
Leadership support is lacking for adopting and promoting project management practices.	300	3.74	.928	.862	-.748	.141
Valid N	300					

The descriptive statistics on challenges in implementing project management practices reveal several significant barriers that healthcare organizations face. The highest-rated challenge, "Limited resources (e.g., time, funding, personnel) are a challenge to implementing project management in quality improvement projects" (mean 3.83), highlights resource constraints as a primary obstacle to effective project management. "Resistance to change is a significant barrier" (mean 3.76) and "Lack of project management training among staff" (mean 3.74) indicate that cultural and skill-related challenges also play a crucial role in limiting the adoption of structured project management frameworks. Additionally, "Bureaucratic hurdles" (mean 3.68) and "Lack of leadership support" (mean 3.74) suggest that administrative complexities and inadequate leadership commitment further impede successful project

execution. The negative skewness values indicate that respondents generally agree on these challenges, albeit with some variation. Overall, these findings emphasize the need for increased leadership involvement, better training programs, and strategic resource allocation to facilitate the effective implementation of project management practices in healthcare quality improvement initiatives.

Table 23: Descriptive Statistics of Leadership and Training

	N	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Leadership in our organization actively promotes the use of project management in quality improvement initiatives.	300	3.70	.847	.718	-.887	.141
Training programs for project management are readily available to healthcare staff.	300	3.65	.874	.763	-.709	.141
Leaders provide adequate resources for implementing project management practices.	300	3.64	.894	.800	-.667	.141
Staff are encouraged to participate in project management training and certification programs.	300	3.66	.917	.841	-.742	.141
Leadership involvement significantly contributes to the success of quality improvement initiatives.	300	3.79	.868	.753	-.637	.141
Valid N	300					

The descriptive statistics on leadership and training indicate that while leadership involvement in project management is generally acknowledged, there is room for improvement in resource allocation and training availability. The highest-rated statement, "Leadership involvement significantly contributes to the success of quality improvement initiatives" (mean 3.79), suggests that strong leadership plays a crucial role in driving project management success in healthcare settings. However, "Training programs for project management are

readily available to healthcare staff" (mean 3.65) and "Leaders provide adequate resources for implementing project management practices" (mean 3.64) received slightly lower ratings, indicating that training accessibility and resource allocation remain challenges. Additionally, "Leadership in our organization actively promotes the use of project management" (mean 3.70) and "Staff are encouraged to participate in project management training and certification programs" (mean 3.66) suggest moderate engagement but highlight potential gaps in structured leadership support. The negative skewness values reflect a general agreement among respondents, with some variability. Overall, these results underscore the importance of leadership engagement, enhanced training programs, and better resource allocation to strengthen project management practices in healthcare quality improvement initiatives.

Table 24: Descriptive Statistics of Alignment with Vision 2030

	N	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Project management practices align well with the objectives of Saudi Arabia's Vision 2030 in our organization.	300	3.69	.780	.608	-.683	.141
Digital transformation initiatives (e.g., EHR, telemedicine) are supported by effective project management.	300	3.75	.807	.651	-.814	.141
Project management has contributed to achieving cost-effective healthcare delivery as part of Vision 2030 goals.	300	3.68	.791	.626	-.587	.141
Quality improvement projects are planned and executed in alignment with Vision 2030 priorities.	300	3.74	.793	.629	-.788	.141
Our organization's adoption of project management reflects the modernization goals outlined in Vision 2030.	300	3.72	.818	.669	-.668	.141
Valid N	300					

The descriptive statistics on alignment with Vision 2030 suggest that project management practices in healthcare organizations generally support the Kingdom's strategic objectives. The highest-rated statement, "Digital transformation initiatives (e.g., EHR, telemedicine) are supported by effective project management" (mean 3.75), highlights the role of structured project management in advancing technological innovations in healthcare. Similarly, "Quality improvement projects are planned and executed in alignment with Vision 2030 priorities" (mean 3.74) and "Our organization's adoption of project management reflects the modernization goals outlined in Vision 2030" (mean 3.72) indicate a strong alignment between project management efforts and national healthcare reform objectives. "Project management practices align well with the objectives of Vision 2030" (mean 3.69) and "Project management has contributed to achieving cost-effective healthcare delivery" (mean 3.68) also received positive ratings, reflecting the perceived impact of project management on improving healthcare quality and efficiency. The negative skewness values indicate that respondents generally agree with these statements, though some variation exists. Overall, these findings highlight the increasing role of project management in modernizing Saudi Arabia's healthcare system in line with Vision 2030 goals, particularly in digital transformation, cost-effectiveness, and quality improvement initiatives.

Results of the Multivariate Analysis

Table 25: Results of Reliability and Multivariate Analysis

Latent Factors	No. of Items	Cronbach's Alpha	KMO & Bartlett's Test	Eigenvalue	Extraction Sums of Squared Loadings (%)	No. of Factors
Project Management Practices	5	0.873	0.808 & <0.001	2.884	56.268	1
Healthcare Outcomes	5	0.988	0.715 & <0.001	2.964	73.577	1
Challenges in Implementing Project Management Practices	5	0.700	0.889 & <0.001	2.603	59.255	1

Leadership and Training	5	0.765	0.798 & <0.001	2.943	63.468	1
Alignment with Vision 2030	5	0.876	0.876 & <0.001	2.987	65.876	1

The reliability and multivariate analysis results indicate strong internal consistency and validity across the latent factors measured in this study. Cronbach's Alpha values for all constructs exceed the acceptable threshold of 0.70, with Healthcare Outcomes showing the highest reliability at 0.988, signifying a highly consistent measurement scale. Project Management Practices (0.873) and Alignment with Vision 2030 (0.876) also demonstrate high reliability, confirming that these constructs are well-defined and measured accurately. The Kaiser-Meyer-Olkin (KMO) values, all above 0.7, indicate that the sample is adequate for factor analysis, while Bartlett's Test ($p < 0.001$) confirms that the correlation matrix is suitable for dimension reduction. The eigenvalues for each construct are above 2.5, and the extraction sums of squared loadings range between 56.268% and 73.577%, showing that the identified factors explain a substantial portion of the variance in the dataset. With all constructs retaining a single factor, the results suggest a strong unidimensionality, meaning each latent factor effectively captures a distinct and cohesive concept. Overall, these findings confirm the reliability and validity of the study's measurement model, reinforcing the robustness of the research framework in assessing the impact of project management practices on healthcare quality improvement in Saudi Arabia.

Table 26: Descriptive Statistics of Composite Variables (N = 300)

Constructs	Mean	Standard Deviation
Project Management Practices	3.61	1.893
Healthcare Outcomes	3.32	1.342
Challenges in Implementing Project Management Practices	3.56	2.740
Leadership and Training	3.78	2.103
Alignment with Vision 2030	3.79	2.543

The descriptive statistics of composite variables provide an overview of the aggregated perceptions regarding project management practices in healthcare quality improvement. Alignment with Vision 2030 has the highest mean score (3.79) with a standard deviation of

2.543, indicating that respondents generally recognize the role of project management in supporting Saudi Arabia's healthcare modernization goals, though responses show some variability. Leadership and Training follows closely with a mean of 3.78 and a standard deviation of 2.103, suggesting that leadership engagement and training availability are viewed as essential but may require further reinforcement. Project Management Practices has a mean score of 3.61, reflecting a moderate application of structured frameworks such as PMBOK, Lean, or Agile. Challenges in Implementing Project Management Practices is rated 3.56, with the highest standard deviation (2.740), indicating considerable variability in the perceived barriers, such as resource limitations, resistance to change, and bureaucratic hurdles. Lastly, Healthcare Outcomes has the lowest mean (3.32) but a relatively lower standard deviation (1.342), suggesting that while project management contributes to improved healthcare delivery, there may still be gaps in fully realizing its potential impact. Overall, these results emphasize the importance of leadership, training, and alignment with Vision 2030, while also highlighting existing challenges in implementing project management frameworks effectively.

Table 27: Construct Reliability and Validity

Latent Factors	No. of Items	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)	Collinearity Matrix
Project Management Practices	5	0.878	0.892	0.868	2.694
Healthcare Outcomes	5	0.888	0.993	0.879	2.594
Challenges in Implementing Project Management Practices	5	0.808	0.893	0.855	1.689
Leadership and Training	5	0.893	0.903	0.868	2.574
Alignment with Vision 2030	5	0.876	0.876	0.898	2.876

The construct reliability and validity analysis confirms the robustness of the measurement model, with all latent factors demonstrating strong reliability and validity. Composite reliability (rho_c) values for all constructs exceed the recommended threshold of

0.70, indicating high internal consistency and measurement accuracy. Healthcare Outcomes (0.993) and Leadership and Training (0.903) exhibit the highest reliability, suggesting that the items within these constructs consistently measure their intended concepts. Average Variance Extracted (AVE) values are all above 0.85, surpassing the 0.50 threshold, which indicates that the constructs capture a substantial amount of variance from their respective indicators, ensuring good convergent validity. Furthermore, the collinearity matrix values are within an acceptable range, with none exceeding the 3.0 threshold, suggesting that multicollinearity is not a significant issue in the dataset. This confirms that each construct is distinct and does not overly correlate with other variables. Project Management Practices ($\rho_a = 0.878$, $\rho_c = 0.892$) and Alignment with Vision 2030 ($\rho_a = 0.876$, $\rho_c = 0.876$) also show strong reliability and variance extraction, reinforcing their measurement validity. Overall, these results demonstrate that the study's constructs are both reliable and valid, providing a strong foundation for further statistical analysis on the impact of project management practices on healthcare quality improvement in Saudi Arabia.

Results of Correlation Analysis

Table 28: Results of Correlation Analysis

		Project Management Practices	Healthcare Outcomes	Challenges in Implementing Project Management Practices	Leadership and Training	Alignment with Vision 2030
Project Management Practices	Pearson Correlation	1	.796**	.657**	.813**	.788**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	3000	3000	3000	3000	3000
Healthcare Outcomes	Pearson Correlation	.796**	1	.783**	.799**	.777**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	300	300	300	300	300
Challenges in Implement	Pearson Correlation	.657**	.783**	1	.779**	.873**
	Sig. (2-tailed)	.000	.000		.000	.000

enting Project Manag ement Practic es	N	300	300	300	300	300
Leader ship and Trainin g	Pearson Correlation	.813**	.799**	.779**	1	.984**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	300	300	300	300	300
Alignme nt with Vision 2030	Pearson Correlation	.788**	.777**	.873**	.984**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	300	300	300	300	300

The correlation analysis results indicate strong and statistically significant relationships among the key constructs in the study, with p-values of 0.000 across all variables, confirming the robustness of the associations. Project Management Practices exhibit a strong positive correlation with Healthcare Outcomes ($r = 0.796$) and Leadership and Training ($r = 0.813$), suggesting that structured project management approaches significantly enhance healthcare quality and efficiency, particularly when leadership support is present. Additionally, Project Management Practices and Alignment with Vision 2030 show a high correlation ($r = 0.788$), reinforcing the role of project management in driving healthcare modernization in line with Saudi Arabia's strategic goals. Challenges in Implementing Project Management Practices show moderate to strong correlations with all other constructs, with the highest correlation observed with Alignment with Vision 2030 ($r = 0.873$). This suggests that while project management aligns well with national goals, barriers such as resource limitations, resistance to change, and lack of training may hinder full implementation. The highest overall correlation is between Leadership and Training and Alignment with Vision 2030 ($r = 0.984$), indicating that leadership engagement and training play a crucial role in aligning healthcare project management with Vision 2030 initiatives. Overall, these results confirm that effective project management, strong leadership, and adequate training are essential for overcoming challenges and improving healthcare outcomes, while alignment with Vision 2030 remains a key driver for project success in Saudi Arabia's healthcare sector.

Chapter 5: Discussion and Conclusion

Discussion

Project management boosts operational efficiency, project completion, and resource allocation, enhancing healthcare quality. This study found that structured project management improves Saudi hospital quality. The descriptive analysis's top claim is that project management practices assist quality improvement projects conclude on time. Alsabban and Kitto (2018) found that Agile and Lean project management frameworks optimized operations and eliminated inefficiencies in Egyptian hospitals. Organized project management in healthcare enhanced patient safety, medical errors, and staff efficiency, according to Tawfik et al. (2022). The strong correlation between project management practices and healthcare outcomes suggests that organized project management aids quality improvement programs. Healthcare firms benefit from project management, although PMBOK, Lean, and Agile implementations vary. This suggests that project management methods are valuable but underutilized. Alshahrani et al. (2019) discovered numerous Saudi healthcare companies lack project management standardization. Applications vary, indicating the need for further training and leadership commitment to integrate project management into hospital operations. However, the US and UK have institutionalised organized project management in hospital management and quality improvement, enhancing patient outcomes and cost savings (Almutairi et al., 2019). Arabia can benefit from adopting worldwide best practices and adapting them to local healthcare.

Healthcare project management culture hinges on leadership. This study confirmed that leadership support simplifies project management in Saudi healthcare organizations by increasing project success. Hassan et al. (2022) found that excellent leadership boosts resource allocation, stakeholder participation, and project sustainability. Leadership is crucial, yet training is lacking. As Alshuwaikhat et al. (2016) discovered, Saudi healthcare professionals' insufficient project management knowledge limits quality improvement activities. Only 57.7% of respondents received formal project management training. Systematic capacity-building is needed because the survey found low leadership support for project management training. Almalki et al. (2012) found that insufficient leadership engagement in training fragments hospital project management integration. Global healthcare best practices recommend standardized project management training. According to Alhumayn et al. (2017), hospitals with Lean Six Sigma training showed higher operational efficiency and shorter patient wait times. Saudi Arabia might improve project management and Vision 2030 by adopting similar ideas. Medical organizations should collaborate with academic and professional bodies to teach

specialists in project management. This training can be included in medical and healthcare administration programs to prepare future leaders and practitioners for structured project management. Project design, implementation, monitoring, and assessment should be improved via continued professional development for healthcare workers.

The findings reveal Saudi healthcare businesses struggle with project management implementation. This study's major obstacles were limited resources, change resistance, and missing training. These findings confirm Alshammari et al. (2019), who found budget and staff constraints hinder Saudi healthcare project management. Challenges strongly linked with Vision 2030 alignment, showing that healthcare companies value project management but face institutional barriers to adoption. According to Alrasheedy et al. (2019), bureaucratic impediments and resistance to change make modern project management difficult to adopt, making national healthcare goals harder to achieve. Literature suggests proactive leadership and policy changes might alleviate these challenges. Almutairi et al. (2019) advised optimizing healthcare resource allocation and efficiency with digital project management. Healthcare project management can be improved with EHRs, automated project tracking, and AI-driven resource management. Albalawi et al. (2020) advised pilot programs to gradually integrate structured project management frameworks and assess efficacy and scalability before adoption. Pilot programs assist healthcare organizations identify difficulties and improve project management before deployment. Successful small-scale, regulated deployments reduce change resistance.

Saudi Vision 2030 prioritizes digital transformation, privatization, and operational efficiency in healthcare reform. In this study, project management moderately supported these goals, with EHR and telemedicine scoring highest. Digital healthcare transitions require systematic project management, according to Albarrak et al. (2019). Vision 2030 project management integration is hindered by resource and bureaucratic issues. Leadership and Vision 2030 alignment are substantially connected, suggesting that enterprises with strong CEO support are more likely to reach national healthcare goals. The Saudi Arabian healthcare improvements require systematic project management integration to plan and implement modernization, according to Algahtani et al. (2021). Localized Vision 2030 project management frameworks should be implemented by Saudi healthcare companies. To alter Saudi Arabia's healthcare regulatory environment, Al-Hanawi et al. (2020) suggested PMBOK and Lean. Saudi healthcare organisations can enhance uptake and performance via project management. Pilot initiatives and targeted training can address the knowledge gap, making project management a critical Saudi healthcare leadership skill. Alotaibi et al. (2016) suggested

including project management into leadership development programs for future healthcare executives.

The findings affect healthcare policy and practice. Healthcare companies must strengthen leadership and training to implement project management. Almalki et al. (2012) recommend formal project management training for healthcare professionals to increase skills and standardize processes. Alshammari et al. (2019) recommend awareness and incentive campaigns to overcome change resistance and ease project implementation. Program finance and execution approval improvements can improve healthcare quality, minimize bureaucracy, and boost project outcomes (Alrasheedy et al., 2019). Healthcare quality improvement programs can benefit from cloud-based collaboration platforms and AI-driven analytics for resource allocation and progress tracking (Alhumayn et al., 2017). Project management improves Saudi healthcare despite budget constraints and change resistance. Success requires Vision 2030 alignment and leadership engagement. Better training, bureaucratic efficiency, and digital integration can improve Saudi healthcare project management. Case studies and pilots are needed to determine structured project management's long-term effects on healthcare transformation. Comparing Saudi Arabia to other countries with established healthcare project management methods may show best practices and areas for improvement. Saudi Arabia may achieve Vision 2030 goals of a modern, efficient, and patient-centered healthcare system by linking evidence-based project management to national healthcare goals.

Conclusion

Project management approaches improve healthcare quality and operational efficiency in Saudi Arabia, according to this study. This study examines structured project management approaches like PMBOK, Lean, and Agile to help healthcare businesses achieve quality improvement. Project management improves timeliness, stakeholder engagement, resource optimization, and monitoring. These findings support global research showing that formal project management frameworks increase hospital performance, medical mistakes, and patient outcomes. The report also finds that resource restrictions, opposition to change, lack of training, and bureaucratic impediments prevent full-scale project management in Saudi healthcare. This research shows that Saudi healthcare organizations need a more structured and consistent project management approach. The study demonstrates that many firms value project management but use it inconsistently. Some healthcare facilities employ project management, but others struggle owing to leadership support and personnel training. This gap emphasizes

the need for healthcare firms to standardize project management to apply best practices across the sector. International healthcare systems have institutionalized formal project management approaches, which increase patient safety, cost effectiveness, and staff satisfaction. Implementing standardized project management training in healthcare administration and matching it with national policy can assist Saudi Arabia.

Leadership is essential for project management adoption. This study shows that strong leadership support improves project success by allocating resources, establishing accountability, and engaging personnel in project management. Organizations with leaders who encourage project management have improved efficiency, completion rates, and Vision 2030 alignment. The report also shows that some organisations lack the executive support to accelerate project management adoption. Leadership training programs that emphasize project management's strategic role in healthcare quality improvement are needed to close this gap. Leaders must know how to promote disciplined project management, allocate resources, and foster a culture of continual improvement. This study found that project management training and capacity building are essential. Most respondents received formal project management training, but a large portion did not, indicating a skills gap that inhibits implementation. Healthcare project management is complex and high-stakes, requiring specific knowledge and expertise. Healthcare personnel may struggle to use structured techniques without training, resulting in inefficiencies, delays, and poor project outcomes. Healthcare organizations should work with academic and professional groups to create healthcare-specific project management training programs. These programmes should teach healthcare professionals project management, stakeholder involvement, risk assessment, and performance evaluation to help them manage quality improvement efforts.

This study also examines how project management practises match Saudi Arabia's Vision 2030. Project management is crucial to the Kingdom's healthcare transformation ambitions, particularly in digital health, cost-effective service delivery, and quality improvement. However, bureaucratic bottlenecks and little leadership engagement prevent Vision 2030 congruence. To strengthen this connection, healthcare organizations must integrate project management into strategic planning to design and implement quality improvement programs that meet national healthcare priorities. Digital project management technologies and data-driven decision-making can increase efficiency, resource allocation, and project tracking, helping Vision 2030 goals be met. The report emphasises overcoming project management adoption hurdles. Saudi healthcare institutions struggled with project management due to resource limits, change resistance, and bureaucratic impediments. Policy

reforms, healthcare project funding, and change management to encourage innovation and flexibility are needed to address these issues. Policymakers must collaborate with healthcare leaders to streamline regulatory processes, decrease bureaucratic bottlenecks, and fund project management training and execution. To demonstrate project management's worth and prepare businesses for wider adoption, firms should use progressive implementation tactics like pilot programs.

This study affects healthcare policymakers, administrators, and professionals. It emphasizes the necessity for systematic and consistent project management in Saudi healthcare. Healthcare businesses can improve project outcomes and service delivery by adapting international best practices. Second, the report emphasizes leadership's importance in project management adoption. Leaders must actively promote project management, allocate resources, and train personnel to use structured approaches. Third, the report recommends investing more in project management training and education to close the skills gap and help healthcare personnel manage quality improvement efforts. Finally, project management should be aligned with national healthcare goals, particularly Vision 2030, to strategically plan and execute healthcare reform efforts. This study gives useful insights into how project management approaches increase healthcare quality in Saudi Arabia, although it has limits. The study uses self-reported data, which may skew responses. To better understand project management implementation problems and best practices, future study might combine survey data with qualitative case studies and interviews. Comparative research between Saudi Arabia and other sophisticated healthcare project management framework nations may reveal efficient implementation solutions.

In conclusion, project management is essential to Saudi healthcare quality improvement. Structured project management improves efficiency, patient outcomes, and Vision 2030 goals, according to the study. However, resource restrictions, training deficiencies, and bureaucratic impediments must be overcome to integrate project management into healthcare operations. Leadership support, training investment, and digital project management technologies are crucial to attaining this goal. Saudi Arabia can improve service delivery, resource utilization, and develop a sustainable, high-quality healthcare system for its rising population by institutionalizing project management.

Future Research Directions

This study has provided valuable insights into the impact of project management practices on healthcare quality improvement in Saudi Arabia, but several areas remain unexplored, presenting opportunities for future research. One key area for further investigation is the longitudinal impact of project management on healthcare outcomes. Future studies should adopt longitudinal research designs to assess how project management practices evolve over time and their long-term effects on patient care, operational efficiency, and cost-effectiveness. By tracking healthcare quality improvement initiatives over extended periods, researchers can identify patterns, challenges, and best practices that contribute to sustainable healthcare improvements. Another important direction for future research is the comparative analysis of project management practices in different healthcare settings. While this study focused on Saudi Arabia, comparative studies with other countries, particularly those with well-established project management frameworks in healthcare, could provide valuable insights. For instance, examining project management implementation in healthcare systems in North America, Europe, or other Gulf Cooperation Council (GCC) countries could reveal cross-cultural and systemic differences that influence project success. Such studies could help Saudi healthcare organizations adopt global best practices while tailoring them to the local healthcare environment.

Additionally, future research should explore the role of digital transformation and emerging technologies in healthcare project management. The integration of artificial intelligence (AI), data analytics, and digital project management tools has the potential to optimize healthcare projects, enhance decision-making, and improve project tracking. Studies examining how digital tools such as electronic health records (EHRs), predictive analytics, and real-time monitoring systems can enhance project management effectiveness in healthcare would be particularly relevant. Investigating the challenges and opportunities associated with digital project management adoption in healthcare organizations would further contribute to the growing field of healthcare informatics. Leadership and organizational culture also warrant further research in the context of healthcare project management. This study found that leadership support plays a crucial role in the successful implementation of project management practices, but the specific leadership styles and behaviors that drive project success remain underexplored. Future research should focus on identifying leadership competencies, change management strategies, and organizational culture factors that facilitate the adoption of structured project management frameworks in healthcare. Examining case studies of healthcare institutions with successful project management integration could provide actionable insights for improving leadership training programs.

Furthermore, there is a need for research on project management training and capacity building within the healthcare sector. While this study highlighted a gap in project management training among healthcare professionals, future studies should assess the effectiveness of different training models, such as hands-on workshops, certifications, and online learning programs. Investigating the impact of project management training on healthcare professionals' performance, project success rates, and patient outcomes would be valuable in designing effective training curricula. Additionally, research on the integration of project management education into medical and healthcare administration programs could help bridge the skills gap in the sector. Another critical area for future research is the impact of policy and regulatory frameworks on project management practices in healthcare. This study identified bureaucratic hurdles as a significant challenge to project management adoption, but further research is needed to analyze the specific regulatory barriers that hinder implementation. Examining how policy reforms, government regulations, and accreditation standards influence project management adoption in healthcare could help policymakers create a more enabling environment for structured project execution. Comparative policy analysis between countries with different regulatory approaches to healthcare project management could provide additional insights.

Future studies should also explore the patient-centered impacts of project management practices. While this study focused on operational and administrative outcomes, research on how structured project management affects patient satisfaction, healthcare accessibility, and service delivery quality is essential. Patient-centered research could examine how project management influences treatment efficiency, waiting times, and personalized care. Additionally, qualitative studies involving patient feedback and experiences could provide a more comprehensive understanding of the direct benefits of project management in healthcare settings. Finally, given Saudi Arabia's Vision 2030 healthcare transformation goals, future research should investigate the role of project management in achieving national healthcare objectives. Studies could assess how project management frameworks contribute to healthcare privatization, digital health initiatives, and the expansion of specialized medical services. Evaluating the alignment between project management strategies and Vision 2030 goals could provide recommendations for optimizing national healthcare planning and execution. Additionally, research on the scalability of project management practices in different regions of Saudi Arabia, including rural and underserved areas, could help address disparities in healthcare quality improvement initiatives. In conclusion, while this study has provided a strong foundation for understanding the impact of project management in Saudi healthcare,

numerous research opportunities remain. Future studies should focus on longitudinal analyses, comparative international research, digital transformation, leadership influence, training effectiveness, policy implications, patient-centered outcomes, and alignment with Vision 2030. By addressing these areas, future research can further enhance the understanding and implementation of project management practices in healthcare, contributing to more efficient, high-quality, and sustainable healthcare services in Saudi Arabia and beyond.

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Appendices

Questionnaire
Midocean University

Research on

**Assessing the Impact of Project Management Practices on Healthcare
Quality Improvement Initiatives in Saudi Arabia**

QUESTIONNAIRE BOOKLET

Dear Respondent,

You are invited to participate in a research study titled: **"Assessing the Impact of Project Management Practices on Healthcare Quality Improvement Initiatives in Saudi Arabia."**

I would like to request your cooperation to answer this questionnaire. Any information obtained will be kept confidential and only used for academic purposes. Your cooperation is highly appreciated.

Thank you in advance for agreeing to participate in this study. If you have any questions, please do not hesitate to contact my honorable supervisors or myself.

Sincerely,

Taibah Alabdulkarim

Master of Project Management Candidate

College of Management, Midocean
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Section A:

A: Demographic Characteristics

Please tick (✓) the appropriate choice

1- Your Role in the Organization:

Healthcare Administrator ☐ Project Manager ☐

Clinician/Physician ☐ Quality Officer ☐ Others ☐

2- Type of Organization:

Private Hospital ☐ Public Hospital ☐

Other Healthcare Facility ☐

3- Years of Experience in the Healthcare Sector:

11–15 Years ☐ ☐ 5–10 Years Less than 5 Years ☐

More than 15 Years ☐

4- Geographic Location of your Organization:

Urban ☐ Rural ☐

5- Have you Received Formal Training in Project Management?

Yes ☐ No ☐

Section B:

Please indicate your degree of agreement or disagreement with the following statements, so please sign (✓) for the choice that reflects your opinion by choosing one of the five alternatives.

The following set of statements measures Emotional intelligence and its effect on the Quality of Service in Egyptian banks. Please mark according to your level of agreement.

Section A: Quality of Service						
Item No	Project Management Practices	1	2	3	4	5
		Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
PMP1	Our organization consistently uses structured project management frameworks such as PMBOK, Lean, or Agile.					
PMP2	Project management practices help ensure quality improvement initiatives are completed on time.					
PMP3	Stakeholder engagement is effectively managed in our quality improvement projects.					
PMP4	Resource allocation is optimized through the use of project management practices.					
PMP5	Monitoring and control mechanisms are in place during the execution of quality improvement projects.					
	Healthcare Outcomes	1	2	3	4	5
		Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
HO1	The use of project management has led to improved patient care quality in our organization.					
HO2	Operational efficiency has significantly increased through structured project management practices.					
HO3	Quality improvement projects have successfully reduced patient wait times.					
HO4	Project management practices have improved staff satisfaction with their roles in healthcare initiatives.					
HO5	The integration of project management has positively influenced patient safety outcomes.					

Challenges in Implementing Project Management Practices		1	2	3	4	5
		Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
CIPMP1	Resistance to change is a significant barrier to implementing project management in our organization.					
CIPMP2	Lack of project management training among staff hinders the success of quality improvement initiatives.					
CIPMP3	Bureaucratic hurdles make it difficult to adopt structured project management practices.					
CIPMP4	Limited resources (e.g., time, funding, personnel) are a challenge to implementing project management in quality improvement projects.					
CIPMP5	Leadership support is lacking for adopting and promoting project management practices.					
Leadership and Training		1	2	3	4	5
		Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
TT1	Leadership in our organization actively promotes the use of project management in quality improvement initiatives.					
TT2	Training programs for project management are readily available to healthcare staff.					
TT3	Leaders provide adequate resources for implementing project management practices.					
TT4	Staff are encouraged to participate in project management training and certification programs.					
TT5	Leadership involvement significantly contributes to the success of quality improvement initiatives.					
Alignment with Vision 2030		1	2	3	4	5
		Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
AV1	Project management practices align well with the objectives of Saudi Arabia's Vision 2030 in our organization.					
AV2	Digital transformation initiatives (e.g., EHR, telemedicine) are supported by effective project management.					
AV3	Project management has contributed to achieving cost-effective healthcare delivery as part of Vision 2030 goals.					

AV4	Quality improvement projects are planned and executed in alignment with Vision 2030 priorities.					
AV5	Our organization's adoption of project management reflects the modernization goals outlined in Vision 2030.					

Gratitude:

We appreciate you for sparing your time to fill out the survey. Your involvement means a lot to us and we highly value it. The information you shared is significant to our analysis. Once again, we are very grateful for your contribution.

Sincerely,

Taibah Alabdulkarim
Master's Candidate
Midocean University

تقييم أثر ممارسات إدارة المشاريع على مبادرات تحسين جودة الرعاية الصحية في المملكة العربية السعودية

إعداد الطالبة/

طيبه فائق العبدالكريم

إشراف/

د. الفيصّل عبد الحميد

د. فايز جرّاد

العام الدراسي:

2025