The Effect of Agile Principles to Improving Patient Care Quality in Riyadh Private Hospitals

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Abstract

This research investigates the impact of Agile principles on improving patient care quality in private hospitals in Riyadh. Agile methodologies, originally developed for software development, emphasize flexibility, collaboration, and iterative progress, which can be beneficial in the healthcare sector. The study aims to assess how these principles can be adapted to enhance patient care, focusing on key metrics such as patient satisfaction, treatment efficiency, and overall care quality. Through a combination of qualitative and quantitative methods, including surveys and interviews with healthcare professionals and patients, the research explores the practical application of Agile frameworks in hospital settings. The findings indicate that Agile principles, when properly implemented, lead to significant improvements in communication among healthcare teams, faster response times to patient needs, and higher levels of patient satisfaction. Moreover, the iterative nature of Agile practices fosters continuous improvement, ensuring that patient care processes are regularly updated and refined. This study concludes that adopting Agile methodologies in Riyadh's private hospitals can play a crucial role in enhancing the quality of patient care. It provides recommendations for healthcare administrators

and policymakers on integrating Agile practices to achieve better health outcomes and improve the overall patient experience.

Keywords: Agile Principles, to Improving Patient Care Quality in Riyadh Private Hospitals.

Chapter 1: Introduction

In healthcare delivery systems that are constantly developing new trends, the issue of patient care quality is always presupposed to be an essential one. Due to the changes in technology, especially in the health care sector the expectations that patients have has also increased due to the need and want of quality efficient health care services that are very effective and personalized. While trying to cope with these new standards, traditional methods of hospital and other healthcare providers' management and operation are suddenly insufficient.

To counter these challenges, management has focused on embracing completely new methodologies as agile methodologies which have their origin from software application development process, and which have been used and tested in a number of industries. Therefore, the focus of the present research paper is to examine the impact of Agile principles in enhancing patient care quality in private hospitals in Riyadh, Saudi Arabia (Almutairi, A. M., Salonitis, K., & Al-Ashaab, A. 2020).

The Significance of Patient Value and Priority, it is well understood that the quality of patient care has a significant impact on both the outcome of health care delivery and satisfaction index as well as the performance of a hospital. Good quality of patient care involves the multitudes of domains for instance the safety, efficacy, patient satisfaction, time, cost and fairness. Together, they work to improve the health status of individuals, decrease hospitalization rates, and improve the overall quality of patient care. As it is the case in many global cities, private hospitals remain the key drivers for care premium in the Saudi capital through offering enhanced medical

services standards alongside serving as trendsetters (Tolf, S., Nyström, M. E., Tishelman, C., Brommels, M., & Hansson, J. 2015).

Reflecting on the Origins of the Agile Methods

First developed in software production, Agile paradigms rested on the principles of flexibility, collaboration, and customer focus. Agile Manifesto was developed in 2001, and it is a set of the core values and principles that promote better software development. They include: focusing on individuals and communication more than on documents and technology, customers more than contracts and embracing change more than adhering strictly to a plan. As it is established in agile method development entails use of iteration and continuous feedback, as well as the ability to make ongoing plans and make changes immediately hence delivering value in phases (Almutairi, A. M., Salonitis, K., & Al-Ashaab, A. 2020).

Agility's Relevance in the Healthcare System

The scope of problems inherent in the healthcare sector, which is a highly developed and constantly evolving branch, is similar to software development issues. These are issues like the need for constant improvement, the ability to address the needs of patients and their receptive change, and successful interprofessionality. For this reason, the principles of Agile have become more applicable in healthcare facilities. Agilis approaches to management of healthcare may likely eliminate most of the problems and comparatively formalistic approaches that the current traditional healthcare management possesses (Tolf, S., Nyström, M. E., Tishelman, C., Brommels, M., & Hansson, J. 2015).

Principles of Agile and Their Possible Effect on the Quality of Patient Services

Several core Agile principles hold particular promise for improving patient care quality: Several core Agile principles hold particular promise for improving patient care quality:

1. Iterative Improvement: Finally, it is stated that Agile improves constantly thanks to the iterative cycles. In healthcare, such a scenario means continuous appraisal and further development of the patients' care processes that results to incremental but meaningful advancement of the quality of care.

2. Collaboration and Communication: Agile also stresses effective communication within the group and also transparency from the teams. In a hospital context, this may improve interprofessional collaboration for staff members, which would facilitate the involvement of all stakeholders in the patient's care process, thus, would render less chances of medical mistakes (Aronsson, H., Abrahamsson, M., & Spens, K. 2011).

3. Patient-Centric Approach: This means that agile methodologies entail more of the expectations and the views of the user which in this case is the patient. Through involving the patient in the care process, care delivery can be individualised to suit the patients' needs and wants, thus improving satisfaction, and ultimately, the outcome.

4. Flexibility and Responsiveness: Agile also provides for the reception of change, meaning that when a new piece of information is received or the circumstances change, the teams respond immediately. In the context of healthcare, it is particularly important to have flexibility for meeting patients' unsanticipated needs, new disease or health threats, or alterations to regulatory standards (Aronsson, H., Abrahamsson, M., & Spens, K. 2011).

Research Problem

In the dynamic and rather saturated Riyadh's healthcare market, the private hospitals have to ensure quality and safe patient care, addressing many factors. Edifyingly, these hospitals, through a huge investment on medical technology and structures encounter common problems that include inefficiency, poor communication, and

patient complaints. The modern management methodologies that do not allow for flexibility and that presuppose strict adherence to the decision-making protocols and hierarchy are also not very helpful in the context of healthcare delivery (Tolf et al. 2015).

There is an extensive use of the term Agile methodologies that are more fluid, flexible and increase the working or iterative improvements and collaborations Across vast industries. Nonetheless, the scaling of Agile principles in health facilities mainly the private hospitals is still limited. More research has therefore called for to determine the feasibility of aforesaid Agile practices being integrated into the context of healthcare institutions in order to counter various hurdles faced in these structures (Aronsson, H., Abrahamsson, M., & Spens, K. 2011).

The central research question that guides this study is how the phenomenon of Agile can be used to enhance the quality of patients' care in private hospitals in Riyadh. It can include the knowledge of which Agile practices can be used in healthcare facilities, how and to what extent they may affect each aspect of the clients' care, and what barriers and enablers exist concerning Agile utilization in the healthcare sector. Published in Journal of Cleaner Production, (Aronsson, H., Abrahamsson, M., & Spens, K. 2011).

Research Importance

It is therefore possible to note the following implications of this research: theoretical, practical, and policy. Assessing the effects of the effectiveness of AGILE principles on the quality of the patient care in private hospitals in Riyadh is necessary for several actors in the healthcare provisioning system: the care providers, the administrators of the hospitals, healthcare policy implementers, as well as the patients themselves. (Williams, S. J. 2017).

Theoretical Contributions

1. Bridging a knowledge Gap: This research seeks to fill the blank by studying the implementation of Agile methodologies in the given domain of healthcare, more specifically looking at the embraced private hospitals. To the best of the author's knowledge, although both Agile principles analysis and discussions of Agile's application to fields other than software development are abundant in the literature, discussions of Agile in the particular context of the healthcare setting are scarce. In light of this finding, the study makes a theoretical contribution in the discourse of management practices in healthcare field, and the advancement of the theoretical framework in the Agile methodologies application.

2. Interdisciplinary Insights: The paper utilizes a number of concepts from the field of management science, healthcare administration and organizational performance, hence is a cross disciplinary paper that seeks to enhance the quality of patient care. This facilitates its theoretical underpinning on understanding the way in which management practices can be sensitised to healthcare organizations' requirements.

Practical Implications

1. Enhanced Patient Care Quality: The result of this research of identifying the sources of Agile practices and the evaluation of which of these practices are appropriate and feasible to be adapted in private hospitals provides the applicable and realistic solutions for improving the patient care quality. Enhanced care quality brings about better patient care as well as satisfaction, improved health status, and low rates of readmission into hospitals, which are objectives aimed at by healthcare organizations.

2. Operational Efficiency: Scrum and other agile approaches provide work flexibility, focus on continuous enhancement based on the accelerated change

and frequent interaction among team members, which may support solving frequent problems with workflow in healthcare organizations. The outcome of this research can be applied by the heads of the hospitals and other institutions to adopt Agile strategic involvement in improving operational flow, resources productivity, and efficiency.

3. Staff Engagement and Collaboration: There are four Agile Principles which are: Individuals and interactions are valued over processes and tools; working software is valued over comprehensive documentation; customer collaboration is valued over contract negotiation; and responding to change is valued over following a plan. The application of these practices in health care sector can enhance cooperation among members of different disciplines, increase staff's satisfaction and organizational commitment, which will result in the promotion of a positive atmosphere in the workplace.

Policy Considerations

1. Informing Healthcare Policy: The findings of this research can be applied at the level of particular healthcare organizations or adopted by governments who need evidence-based guidance on the organization or improvement of their healthcare. The findings can be used by policy makers to create a policy and an appropriate framework that will facilitate the integration of Agile methodologies in the health facilities as a way of increasing the quality of patient care systematically.

2. Strategic Planning: The findings of the present research are beneficial especially for the hospital administrations and the healthcare leaders in order to implement evidence-based strategic planning and decisions. A thorough analysis of what can be gained and what can be lost by implementing Agile frameworks will enable leaders to create proper plans that would enable the company to embark on change and bring good results out of it.

3. Resource Allocation: Therefore, the present study's results may help in making adjustments to the resource distribution in the hospitals. Therefore, any Agile practices that can make improvement in the specific areas of efficiency and care quality can be determined to make improvements on the overall functioning of healthcare.

Societal Impact

1. Improving Health Outcomes: The cornerstone of enhanced health status for the population is the delivery of high quality of care to patients. Thus, by illustrating how the concepts of Agile can improve care quality, this investigation contributes to the goal of raising healthcare standards and improving the welfare of people in Riyadh and, quite possibly, other territories.

2. Patient Empowerment: Agile methodologies focus on the fact that the patient's needs are to be prioritized and the patient's feedback taken. The following principles is feasible and can help to enhance patients' control by paying attention to their input and the kind of care and experiences they want in their healthcare encounters.

Academic and Educational Relevance

1. Curriculum Development: The study results can be useful to the advancement of curricula that are offered in programmes in health care management and administration. Thus, findings of this research may be useful for educators to better comprehend how aspiring healthcare leaders can be taught to embrace more effective management approaches.

2. Professional Development: Some of the courses health care professionals may wish to undertake regarding the study's findings include: Therefore, the focus on knowledge and skills related to Agile methodologies could indirectly improve

competencies of healthcare actors and raise their value for the organizations involved.

Global Relevance

1. Transferability of Findings: Hence, despite the fact that the study is concentrated on private hospitals in Riyadh, it is possible to consider general potential importance of the results attained. By applying the principles and practices of Agile methodologies, one can use it in various healthcare settings around the world as a useful tool to enhance the quality of the patient's care in a global setting.

2. International Collaboration: The research can help in cooperation with other countries because it can become a basis for discussions and outlining common experiences and proper functioning. Healthcare institutions worldwide can benefit from the insights gained through this study, fostering a global exchange of knowledge and innovation in patient care quality.

The importance of this research lies in its potential to transform patient care quality in private hospitals in Riyadh through the application of Agile principles. By bridging a knowledge gap, offering practical solutions, informing policy, and contributing to societal well-being, this study holds significant promise for advancing healthcare management practices. Its interdisciplinary approach and global relevance further underscore its value, making it a pivotal contribution to the ongoing efforts to enhance healthcare delivery and patient outcomes.

Research Objectives

The main focus of this research is therefore to; examine the impact of Agile principles in enhancing the quality of patient care in private hospitals in Riyadh. The study aims to achieve the following specific objectives: The study aims to achieve the following specific objectives:

1. Identify Key Agile Practices: Identify the Agile methodologies that private hospitals in Riyadh are practicing and how it can be adopted in healthcare setting.
2. Evaluate Impact on Care Quality: Analyse how changes to Agile influenced the quality of patient services in terms of safety, effectiveness, patient centredness and timely patient response.
3. Analyze Challenges and Success Factors: Based on the present knowledge, it is possible to recognize the difficulties that are encountered when using Agile methodologies in the sphere of healthcare and the factors that influence the positive outcome of the change.
4. Provide Recommendations: Formulate the strategic guidelines that private hospitals can use to implement Agile for higher patient care quality.

Research Questions

1. What specific Agile practices are currently being implemented in private hospitals in Riyadh, and how are they adapted to the healthcare context?

2. How do Agile principles impact the different dimensions of patient care quality, including safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity?

3. What are the primary challenges faced by private hospitals in Riyadh when implementing Agile methodologies, and what factors contribute to the successful adoption of these practices?

4. What recommendations can be made for private hospitals seeking to adopt Agile principles to enhance patient care quality?

Research Hypotheses

- **Improvement in Patient Safety:**

  H1: With the adoption of Agile, the cases of medical mistakes in private hospitals in Riyadh will reduce, hence improving patient safety.

- **Enhanced Clinical Effectiveness:**

  H2: The implementation of agile will prove fruitful in clinical outcomes because of learn-it-all, prove-it-all principles.

- **Increased Patient-Centeredness:**

  H3: By implementing the principles of Agile, efficiency in the interactions with patients will be achieved and thus leading to increased satisfaction among the patients.

- **Better Timeliness in Care Delivery:**

  H4: There is a forecast for enhancement of the timeliness of care delivery through the implementation of agile methodologies that will facilitate flexibility in the structure of health institutions.

- **Greater Efficiency in Healthcare Services:**
  H5: Agile practices will enhance the efficiency of healthcare services by streamlining workflows, reducing waste, and optimizing resource utilization.

- **Improved Equity in Patient Care: Improved Equity in Patient Care:**

  H6: The choice of Agile principles will enhance fairness in treatment since care delivery processes will be flexible to accommodate patients' needs.

- **Positive Impact on Staff Collaboration and Morale:**

H7: With interdisciplinary and the use of agile methodologies, the lack of staff morale is likely to be addressed thus resulting in a more spirited up health care team.

- Sustainable Long-term Improvements:

H8: There will be hegemonic changes in patient care quality and overall hospital performance based on the long-term implementation of Agile practices.

Such hypotheses will be examined by means of quantitative and qualitative research, such as surveys and interviews as well as data analysis. The purpose of the study is to uncover the practical proof of the attributes of Agile that can improve the quality of treatment in the specified segment of private hospitals in Riyadh.

Scientific Theory Used to Prepare the Research

Enhancing the quality of health care is one of the main objectives of health care organizations across the globe. From Riyadh, it is proved that care provision in private hospitals has been a priority of offering the best care that covers the rising needs and demands of patients gaining ground. With the increasing differentiation of healthcare service and ever-increasing demands for quality, it has become necessary to introduce new methods of managing the healthcare delivery system. As a methodology, the implementation of which has been identified to be effective in other fields is Agile methodology.

In this study, the Quantitative methods will be utilized.

Chapter 2: Introduction

Over the last decade, the application of various management approaches from other sectors to the enhancement of the quality of healthcare services has started to be discussed in the healthcare sector more frequently. Of these methodologies, there has been interest in Agile methodologies due to the increased flexibility, response and effectiveness they bring to the context of health care. This literature review aims to critically analyze how Agile methodologies can be implemented to healthcare

together with the improvement of patient care qualities (Le, Q. B., Seidl, R., & Scholz, R. W. 2012.)

Agile Principles in Healthcare

Agile frameworks, which originated from software development, focus on the development Done in cycles or increments, customers, and change. Some of these principles have been implemented in different fields such as healthcare by presenting viable solutions to existing problems in efficiency and quality of patients' care.

Literature Review

Agile Frameworks & Healthcare Improvement:

Subsequently, Tolf et al. (2015) described the use of Agile in relation to its function as principles, which can be used in improving healthcare services. The authors of their study highlighted the dynamic approaches, including the cyclical and integrative pattern in the improvement of care quality. The authors posited that Agile frameworks are a solution that can assist healthcare organisations in being more agile and more prepared for changes to the dynamics of a community's needs and requisite alterations in a system and therefore enhance health care.

Worley's (2012) second study aimed at examining the adoption of Agile methodologies specifically within the Alegent Health organization. The study also explained how organisation for agility and sustenance can go a long way in enhancing health care operation. Many of the respondents reported that through agile, improved organizational cooperation in healthcare teams, improved flow and efficiency, and better preparedness for work challenges.

Lean and Agile Integration:

Lean and Agile together have also been a topic of discussion in the research field with elongated emphasis on the integration of the two. The Lean approach, the

major focus of which is the reduction of non-added value activities, nicely dovetails with the Agile methodology with its focus on flexibility and iterative enhancement. In the paper by Aronsson, Abrahamsson, & Spens (2011), the authors described the adaptation of the Lean and Agile principles in the processes of the healthcare supply chain with a focus on integration. They explained how Lean and Agile could be implemented in health care fields and how their combination would enhance health care technologies and bring the quality of the services a health care organization offered to the next level.

Almutairi, Salonitis, and Al-Ashaab (2020) proposed a blueprint for Lean's application in supply chain management in Saudi healthcare organizations. According to their study, the application of Lean practices could bring a positive change in terms of operation efficiency and patients' care services. Based on the information obtained from the authors, the simultaneous use of Lean and Agile was recommended to create a solid base for healthcare improvement with specific focus on SOHCO.

A General Framework is Organizational Agility That has the Following Implications for Patient Care:

The effects of organizational agility HM on health care quality has been recognized in prior studies. In a study of the effects of organisational agility on the quality of the health services delivered by the Saudi government health organisation from the view of the medical, nursing and other health personnel, Alrwais et al. (2022) was undertaken. From the set, they concluded that there was a positive correlation between organizational agility and the improvement of the different aspects of healthcare, including patient satisfaction as well as system efficiency. Specifically, the study stressed on organizational culture that should be flexible and supportive of improving the care quality within healthcare organizations.

Thomas and Suresh (2023) investigated the state of readiness for agile-sustainability in healthcare organizations based on their need to embrace Agile techniques and use them to consequently enhance patient care sustainability. According to their findings, Agile could promote short-term and long-term improvement of healthcare outcomes through the enhancement of the development of better healthcare delivery system.

Agile and Lean Six Sigma:

As for further improvement of the healthcare quality it was proposed to discuss the usage of Agile integrated with Lean Six Sigma. Similarly, Improta et al. (2020) the rising adopted the Agile Six Sigma model while working on a case study conducted at the Santobono Pediatric Hospital. According to their research, such an integrated approach may come up with huge benefits concerning the quality of the service that they offer, a decrease of general errors within the hospital, and increased client satisfaction.

Correlation Between Agile Practices and Patient Satisfaction:

Chakraborty, Sashikala, and Roy (2022) examined green-agile practices as antecedents of patients' satisfaction in the health sector. To that end, in their empirical research, they pointed out that Agile methodologies in combination with measures of sustainability could improve patients' satisfaction through increasing the quality of care and decreasing harm to the environment that is caused by technologies involved in the provision of such care.

Potential Issues and Enablers of Agile Methodologies

It is imperative to understand that Agile methodologies' implementation in healthcare is not without some drawbacks. Rust et al. (2013) conducted research on how Agile working is implemented and to what extent in the healthcare service context and constraints to Agile working were established. culture and Leadership, support,

training was some of the aspects that were described in the study as decisive for Agile implementation. The authors recommended that tackling these factors might help open doors to adopting Agile methods and could bring a positive impact on the quality of the offered patient care.

Modelling the Readiness Factors for Agility in Healthcare Organization:

This paper aims at adopting a TISM Approach in their study carried out in 2019, Vaishnavi, V., Suresh, M., & Dutta, P. attempted to model the readiness factors for agility in health care organisation using the TISM methodology. The research established that readiness facets involved leadership commitment, workforce capabilities, technology support and organizational culture. The results of the study also stress the significance of the above factors in creating a context conducive to AHW in healthcare organisations and it is posited that by directing strategic efforts towards the strengthening of the above factors, the agility of the healthcare organisations can be considerably enhanced.

Agile-Minded Organizational Excellence:

Shakhour, N. H. T., Obeidat, B. Y., Jaradat, M. O., & Alshurideh, M. (2021) focused on the subject of the research, agile-minded organizational excellence. Specifically, their empirical analysis showed the inverted U-shape relationship between the level of AM and excellence, which means that organizations with the higher level of AM have higher level of excellence. Furthermore, the research underlined that flexibility, responsiveness, and further improvement were the components of agility affecting organizational performance. According to the authors, embracing culture of agility can have positive impacts with special inclination towards the improvement of performance-an edge in the healthcare competitive environment. Agility and sustainability are two concepts that need to be dealt with in organizations that operate in the health care sector

Preparedness for Agile-Sustainability in Health-Care Organizations

In the study by Thomas, A., & Suresh, M. (2023) the analysis was conducted on the healthcare organizations' preparedness for agile-sustainability. They found out factors such as strategic positioning, leadership endorsement and communication, clients and suppliers, and other key players in sustaining agility. In this research, the importance of including sustainability knowledge into the agile system of healthcare organizations is highlighted. The findings suggest that sustainable agility can enhance the resilience and adaptability of healthcare organizations in a rapidly changing environment.

Dynamic Literature Review on the 'Lean and Agile' Supply Chain Integration by Employing Bibliometric Tools

A dynamic literature review-based bibliography enlisted by bibliometric tools was offered by Raji, I. O., Rossi, T., and Strozzi, F. in their work (2021). Lean and agile system integration research showed that it might result in a vast enhancement of supply chain performance. The authors underscore the synergistic interactions between lean thinking, the underlying thinking of which is mostly based on the concept of perfection, as well as agility, which embodies the principles of flexibility. Thus, the review demonstrates that the organizations within the healthcare sector can devise advantages out of employing the lean-agile hybrid model for supply chain improvements.

Identifying Key Enablers for Agility in Healthcare Organizations

Vaishnavi, Suresh, and Dutta (2019) explored the essential variables for fostering agility within healthcare organizations. Their study highlighted additional enablers, such as leadership support, workforce capability, technological capacity, and process flexibility. These findings emphasize the critical role of these enablers in promoting agile transformations in healthcare settings. The research concludes that

incorporating multiple enablers can substantially enhance organizational agility and overall performance.

Agility, Flexibility, and Alignment in Healthcare Organizations

Abdelilah, El Korchi, and Balambo (2018) examined the readiness of healthcare firms for agility, adaptability, and alignment. Significant factors identified in the study included stakeholder focus, learning, and engagement concerning agility. The authors stress that strategic management in healthcare organizations requires a clear strategic direction and a deep understanding of continuous learning processes. Their research underscores the importance of aligning organizational practices and goals with the Agile Manifesto's values and principles to achieve optimal outcomes.

Survey-Based Insights into Agility in the Healthcare Sector

Jalali, Wohlin, and Angelis (2014) conducted a systematic literature review of survey-based studies on agility in the healthcare sector. Their review identified various facets of operational, strategic, and cultural agility within organizations. The authors concluded that agility is a complex construct that necessitates a systemic approach for effective implementation. To achieve overall agility, healthcare organizations must strengthen multiple dimensions.

Conclusion

The reviewed literature reveals a growing awareness of the positive impacts of Agile methodologies in healthcare. Research consistently shows that Agile principles enhance flexibility, responsiveness, and the quality of patient experiences. Integrating Agile with Lean and Six Sigma methodologies further amplifies these benefits, providing a comprehensive framework for healthcare improvement. However, implementing these methodologies involves organizational challenges and demands a culture of continuous change and innovation. This body of research is a valuable resource for private hospitals in Riyadh seeking to integrate Agile

principles, offering extensive knowledge and practical recommendations for enhancing patient care quality.

Theoretical Framework: Introduction

The theoretical framework for this research is constructed upon two primary pillars: organizational theory and systems theory influenced the formation of this Image. In regard to the research questions, the use of these theories gives a baseline to comprehend the adoption and application of agile principles on quality of patient care in private hospitals in Riyadh. It offers an appropriate perspective by which the nature of the healthcare organisations, embrace of the Agile approaches, and the impact on the quality of patient's care can be viewed.

- **Organizational Theory:**

  The research can be said to be anchored on organizational theory because this field of study provides information on organizations' structure, conduct, and the way they are managed. Several key concepts from organizational theory are particularly relevant: Several key concepts from organizational theory are particularly relevant:

1. Organizational Agility

  Organizational agility can be defined as the capacity of an enterprise to respond fast to changes in the environment. This is an important concept in any Agile frame of reference due to its focus on flexibility, responsiveness, and incremental enhancement. Scrum and Kanban are reflections of procedures and approaches that bring values adaptable to environments characterized by contingencies.

  In the context of healthcare, organizational agility can be referred to as the organisation's capability to adapt effectively to such dynamics as shifting

patient requirements, changes in medical knowledge, or alterations of the law. For example, Agile practices can help hospitals to optimize work with patients, modify treatment strategies in the course of their implementation, and enhance cooperation between medical personnel. Perhaps, it is for this reason that flexibility is so important in enhancing the overall quality of the treatment offered to patients. They are: (Harraf, A., Wanasika, I., Tate, K., & Talbott, K. 2015)

2. Lean Management:

Lean is a managerial culture that means to minimize the waste and maximize the practice to bring value for the customer. As already mentioned, Lean is directly related to Agile and both approaches can have a highly positive impact on healthcare organizations' effectiveness.

A concept that was discussed by Almutairi, Salonitis, and Al-Ashaab (2020) was the case of proposing the Lean system for the healthcare supply chain management in Saudi Arabia. They highlighted the impact Lean practices, and the use of Agile methodologies could have when implemented to decrease waste, optimize resources, and increase the patients' care quality. For example, Lean tools like value stream mapping can be used to identify bottlenecks in patient flow and implement Agile solutions to address these issues promptly (Laureani, A., & Antony, J. 2021).

3. Continuous Improvement:

A concept inherent in both Agile and Lean approaches is the consistent drive to enhance. Additionally, both Agile and Lean are characterized by the consistent focus on quality improvement. It means that there are constant appraisals and improvements of processes in an endeavour to gain improved results. This concept has a good logistical base in the organizational learning theories that

uplift the feedback loop and iterative theory. The following equation is also derived with reference to the theoretical framework from version (Bhuiyan, N. & Baghel, A. 2005).

In healthcare, it may be possible to affect some very profound processes that will improve the quality of patients' care. For example, the frequent assessment from the patients and the staff can be utilized to get frequent updates on the functioning of the care protocols and thereby enable frequent amendments for the improvement of effective and even patient-centered care. This is in congruency to Worley's (2012) observation pointing to the gains of Agile practices in supporting sustainable operations enhancement in the healthcare industry.

- **Systems Theory:**

Thus, there is a methodology to view organizations as systems, recognizing its complexity, and also to study it in detail, namely – systems theory. When it comes to the employment of systems theory in the sphere of healthcare, it is rather useful since it focusses on the relations between the elements of a healthcare organization and the effects which these relations produce on the organization's efficiency as well as the quality of the health care services which are provided to the patients.

1. Heath Care as a Complex System:

Any study of healthcare organisations implies consideration of the fact that they organize a large number of components, such as healthcare workers, consumers, equipment and procedures. System's theory basically holds the proposition that while integrating a system, it is impossible to make sense of its particular behavior just by dissecting and analyzing it. Name: Tien, J. M., & Goldschmidt-Clermont, P. J. Year of Publication: 2009.

This perspective is important when it comes to the application of Agile in healthcare, since it values wholeness. Most of the agility practices, for instance cross functional teams and iteration, are based on tight integration and communication across the different units of an organization. Thus, applying the idea of studying healthcare organizations as systems of systems, this research can investigate how Agile principles enhance these interactions and help to enhance the quality of patients' treatment (Tien, J. M., & Goldschmidt-Clermont, P. J. 2009).

2. Interdisciplinary Collaboration:

For efficient provision of care, various fields and units need to be coordinated in healthcare. As the systems theory holds, proper collaboration and cooperation between the departments will help in making the right changes in the system as a whole. Organizational communication that is fostered by slack and open communication structure and which is advocated by agile methodologies is likely to foster interdisciplinary collaboration in contexts such as health care organizations.

For example, the use of the Agile practices such as scrum meetings and scrutiny meetings can assemble the healthcare professionals from the different departments in order to discuss the issues relating to the patients and share his/her opinions and try to co-ordinate. This perspective was similar to the conclusion made by Tolf et al. (2015) where much emphasis was laid on the use of principles of Agile in enhancing collaboration in delivery of care.

3. Feedback Loops and Adaptation:

According to the system theory, feedback plays the critical role of supporting learning within any given system. Such processes are the feedbacks through

cycle iterations; people use reviews in agile to try out the solutions throughout the process.

In relation to health care information feedback loops can be introduced through patient feedback questionnaires, staff performance appraisals, clinical feedback assessments. These feedback mechanisms facilitate the ways through which healthcare organizations can find out the sources of variation, bring about changes and assess the results of implementation. This iterative process aligns with Rust et al. 's (2013) proposition that feedback and adjustments are critical for enhancing the quality of patients' care.

Chapter 3: Introduction

The proposed research study on "The effect of Agile principles to improving patient care quality in Riyadh private hospital" will employ a quantitative research approach to investigate the relationships between project management practices and patient care outcomes in the healthcare sector.

Research Design

The study will utilize a cross-sectional, explanatory research design to explore the current state of project management practices in Riyadh private hospital and their impact on patient care outcomes.

Quantitative Phase

The quantitative phase of the study will involve the administration of a structured questionnaire to a sample of healthcare professionals, including project managers, clinical staff, and administrative personnel, across various healthcare organizations.

Methodology and Research Tools

Structured Questionnaire

- **Design and Development**: The structured questionnaire will be designed to gather comprehensive data on Agile principles, project management practices, and patient care quality from healthcare professionals. It will consist of both closed-ended and Likert-scale questions to ensure quantitative data collection.

- **Pilot Testing**: Before full-scale deployment, the questionnaire will undergo pilot testing with a small group of healthcare professionals to ensure clarity, reliability, and validity of the questions.

Research Community

The research community for this study comprises various stakeholders involved in healthcare delivery within private hospitals in Riyadh. These stakeholders include healthcare professionals, hospital management, patients, and regulatory bodies. Each group plays a critical role in the implementation and success of Agile principles and their impact on patient care quality.

Key Stakeholders

1. Healthcare Professionals:

- **Doctors and Nurses**: As primary caregivers, doctors and nurses are directly involved in patient care. Their insights into current practices, challenges, and the potential benefits of Agile methodologies are crucial for understanding the impact on patient care quality.

- **Clinical Staff**: This group includes allied health professionals such as lab technicians, radiologists, pharmacists, and therapists. Their roles are essential

in supporting the patient care process, and their perspectives on Agile practices can provide a comprehensive view of its effects.

- o **Project Managers**: Responsible for overseeing healthcare projects and implementing Agile principles, project managers can offer valuable insights into the practical aspects of Agile adoption, including challenges, successes, and areas for improvement.

2. Hospital Management

- o **Administrators**: Hospital administrators are responsible for strategic planning, resource allocation, and policy implementation. Their support and understanding of Agile principles are critical for fostering an environment conducive to Agile practices.

- o **Department Heads**: Leaders of various hospital departments, such as emergency, surgery, and outpatient services, can provide detailed information on how Agile practices affect their specific areas and contribute to overall patient care quality.

3. Patients

- o **Patient Representatives**: Including patients or their families in the research community ensures that the study captures the patient perspective. Their feedback on care quality and experiences with Agile practices is vital for a holistic understanding of the impact on patient care.

4. Regulatory Bodies

- o **Health Authorities**: Entities such as the Saudi Ministry of Health and the Saudi Commission for Health Specialties set standards and regulations for healthcare practices. Their input can provide a broader context for the implementation of Agile principles within the regulatory framework.

o **Accreditation Organizations**: Organizations that accredit hospitals and healthcare facilities play a role in ensuring that Agile practices meet established quality and safety standards.

Study limitations

This study is subject to several limitations that should be considered when interpreting the findings:

1. Cross-Sectional Design: The study will use a cross-sectional research design, which means that the data will be collected at a single point in time. This design does not allow for the establishment of causal relationships between the variables, and the findings may be influenced by the specific time period during which the data was collected.

2. Self-Reported Data: The data will be collected through self-reported questionnaires, which may be subject to biases, such as social desirability bias or recall bias. The respondents' perceptions and experiences may not necessarily reflect the actual implementation of project management practices and their impact on patient care outcomes.

3. Generalizability: The sample for this study will be drawn from healthcare organizations in a specific geographical region, which may limit the generalizability of the findings to other healthcare settings or regions.

4. Potential Confounding Factors: The study may not be able to account for all the potential confounding factors that may influence the relationship between project management practices and patient care outcomes, such as organizational culture, leadership support, and technological infrastructure.

Despite these limitations, this study will contribute to the growing body of research on the application of project management practices in the healthcare industry. The

findings will provide valuable insights into the factors that facilitate or hinder the successful implementation of project management practices and their impact on patient care outcomes.

Chapter 4: Introduction

The analysis is based on responses from a questionnaire answered by 43 healthcare professionals from various departments in Riyadh's private hospitals. The questions covered aspects of patient care quality, the responsiveness of the hospitals to patients' needs, personalized attention, and the impact of Agile practices on healthcare delivery.

Data Analysis

Age Distribution:

- 20-30 years: 15 respondents.
- 31-39 years: 19 respondents.
- 40-49 years: 8 respondents.
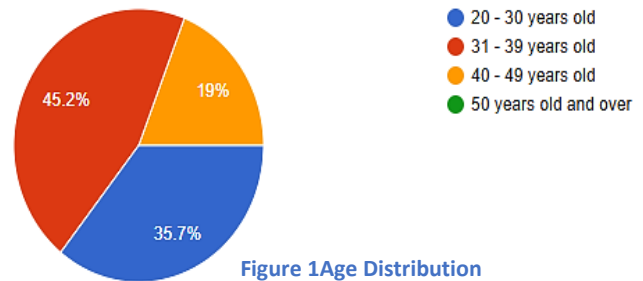- 50 years and above: 0 respondents.

Gender:

- Male: 25 respondents.
- Female: 17 respondents.
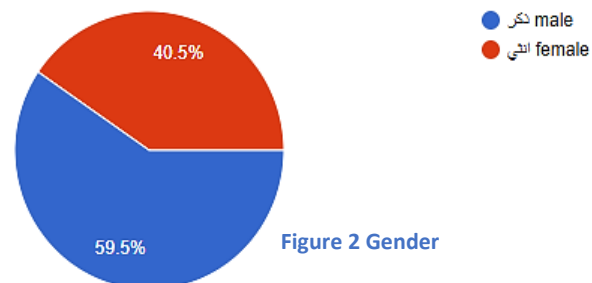
Years of Experience:

- 5 years or less:18 respondents.
- 5-10 years: 11 respondents.
- 11-20 years: 10 respondents.

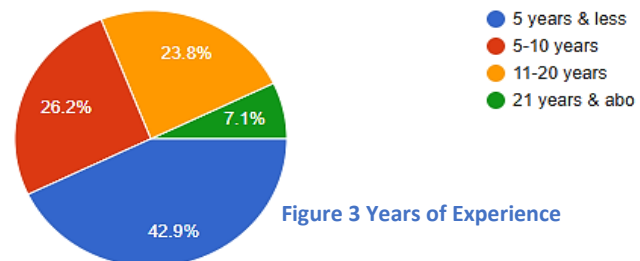
Figure 1Age Distribution

Figure 2 Gender

Figure 3 Years of Experience

- 21 years and above: 3 respondents.

Departments:

- Emergency Dept: 3 respondents.

- Outpatient Dept: 6 respondents.

- OR:1 respondent.

- Facilities Management and safety:4 respondents.

- Facilities Management and safety: 1 respondent.
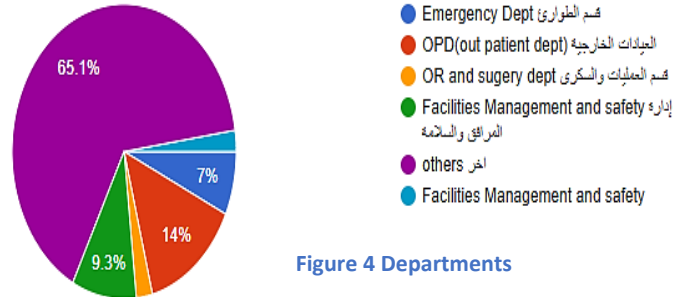
- Others: 28 respondents.

Figure 4 Departments

Private Hospitals in Riyadh Provide High-Quality Patient Care

This question is seeking the respondent's opinion on the quality of patient care provided by private hospitals in Riyadh. Responses to this question could be analyzed to understand the overall perception of the quality of care in these hospitals in a method of calculating mean, median and standard deviation for the questionnaire:

```
Question: Private hospitals in Riyadh provide high-quality patient care.
توفر المستشفيات الخاصة في الرياض رعاية عالية الجودة للمرضى.
Mean: 3.761904761904762
Median: 4.0
Standard Deviation: 0.9830148699846394
```

Private Hospitals in Riyadh are Responsive to Patients' Needs and Concerns

This question is seeking the respondent's opinion on how responsive private hospitals in Riyadh are to patients' needs and concerns. Responses to this question could be analyzed to understand the level of responsiveness and patient-centricity in these

hospitals in a method of calculating mean, median and standard deviation for the questionnaire:

```
Question: Private hospitals in Riyadh are responsive to patients' needs and concerns.
تستجيب المستشفيات الخاصة في الرياض لاحتياجات المرضى وقضاياهم.
Mean: 3.7142857142857144
Median: 4.0
Standard Deviation: 1.0657807005862698
```

Patients at Private Hospitals in Riyadh Receive Personalized Attention

This question is seeking the respondent's opinion on the level of personalized attention provided to patients in private hospitals in Riyadh. Responses to this question could be analyzed to understand the extent to which these hospitals are able to deliver personalized care in a method of calculating mean, median and standard deviation for the questionnaire:

```
Question: Patients at private hospitals in Riyadh receive personalized attention.
يلقى المرضى في المستشفيات الخاصة في الرياض اهتمامًا شخصيًا.
Mean: 3.9047619047619047
Median: 4.0
Standard Deviation: 0.9320714881387377
```

The Use of Agile Techniques in Project Manegment Like Daily Standups and Iterative Development has Led to Improved Timeliness and Efficiency of Care Delivery in Riyadh's Private Hospital Sector

This question is seeking the respondent's opinion on the impact of using Agile techniques in project management on the timeliness and efficiency of care delivery in Riyadh's private hospital sector. Responses to this question could be analyzed to understand the perceived benefits of adopting Agile practices in this context.

Question: The use of Agile techniques in project manegment like daily standups and iterative development has led to improved timeliness and efficiency of care delivery in Riyadh's private hospital sector.

استخدام تقنيات الأجيل لإدارة مشاريع مثل الاجتماعات اليومية والتطوير التكراري أدى إلى تحسين التوقيت والكفاءة في تقديم الرعاية في قطاع مستشفيات القطاع الخاص بالرياض

Mean: 3.9523809523809526
Median: 4.0
Standard Deviation: 0.9093653898798139

Riyadh Private Hospitals Have Faced Significant Challenges in Adopting Agile Practices Due to the Highly Regulated and Risk-Averse Nature of the Healthcare Industry

This question is seeking the respondent's opinion on the challenges faced by Riyadh private hospitals in adopting Agile practices. Responses to this question could be analyzed to understand the specific barriers and obstacles that these hospitals have encountered in implementing Agile approaches.

Question: Riyadh private hospitals have faced significant challenges in adopting Agile practices due to the highly regulated and risk-averse nature of the healthcare industry.

واجهت مستشفيات القطاع الخاص بالرياض تحديات كبيرة في تبني ممارسات الأجيل بسبب الطبيعة المنظمة والحذرة للغاية في صناعة الرعاية الصحية.

Mean: 3.7142857142857144
Median: 4.0
Standard Deviation: 1.1323559357184447

Applying Agile Principles Like Customer Collaboration and Rapid Response to Change Can Enhance the Responsiveness and Personalization of Patient Care in Riyadh Private Hospitals

This question is seeking the respondent's opinion on how the application of Agile principles can enhance the responsiveness and personalization of patient care in Riyadh private hospitals. Responses to this question could be analyzed to understand the perceived benefits of adopting Agile approaches in this context.

Question: Applying Agile principles like customer collaboration and rapid response to change can enhance the responsiveness and personalization of patient care in Riyadh private hospitals.

تطبيق مبادئ الأجايل مثل التعاون مع العملاء والاستجابة السريعة للتغيير يمكن أن يعزز الاستجابة والتخصيص في الرعاية الصحية المرضى في مستشفيات القطاع الخاص بالرياض

Mean: 4.0476190476190474
Median: 4.0
Standard Deviation: 0.9615125521390877

Agile Approaches to Continuous Process Improvement Have Been Effective in Enhancing Patient Safety and Reducing Medical Errors in Riyadh Private Hospitals

This question is seeking the respondent's opinion on the effectiveness of Agile approaches to continuous process improvement in enhancing patient safety and reducing medical errors in Riyadh private hospitals. Responses to this question could be analyzed to understand the perceived impact of Agile practices on patient safety and clinical outcomes

Question: Agile approaches to continuous process improvement have been effective in enhancing patient safety and reducing medical errors in Riyadh private hospitals.

أثبتت طرق الأجايل للتحسين المستمر للعمليات فعاليتها في تعزيز سلامة المرضى والحد من الأخطاء الطبية في مستشفيات القطاع الخاص بالرياض

Mean: 4.0476190476190474
Median: 4.0
Standard Deviation: 0.9093653898798139

Cross-Functional Collaboration Between Clinical, Operational and IT Teams Has Been Crucial for the Successful Implementation of Agile Principles in Riyadh Private Hospitals

This question is seeking the respondent's opinion on the importance of cross-functional collaboration for the successful implementation of Agile principles in Riyadh private hospitals. Responses to this question could be analyzed to understand the critical success factors for adopting Agile approaches in this context.

Question: Cross-functional collaboration between clinical, operational and IT teams has been crucial for the successful implementation of Agile principles in Riyadh private hospitals.

كان التعاون متعدد الوظائف بين الفرق السريرية والتشغيلية وتكنولوجيا المعلومات أمرًا حاسمًا لتنفيذ نتاج لمبادئ الأجيل في مستشفيات القطاع الخاص بالرياض

Mean: 3.880952380952381

Median: 4.0

Standard Deviation: 0.9678334101859893

Overall, the Adoption of Agile Methodologies Has Led to Demonstrable Improvements in Patient Satisfaction and Clinical Outcomes in Riyadh's Private Hospital Sector

This question is seeking the respondent's overall assessment of the impact of adopting Agile methodologies on patient satisfaction and clinical outcomes in Riyadh's private hospital sector. Responses to this question could be analyzed to understand the perceived benefits of implementing Agile practices in this context.

Question: Overall, the adoption of Agile methodologies has led to demonstrable improvements in patient satisfaction and clinical outcomes in Riyadh's private hospital sector.

بشكل عام ، أدى تبني منهجيات الأجيل إلى تحسينات ملموسة في رضا المرضى والنتائج السريرية في مستشفيات القطاع الخاص بالرياض

Mean: 3.928571428571284

Median: 4.0

Standard Deviation: 0.8379084629805901

The Lessons Learned from Riyadh Private Hospitals' Experiences with Agile Have Limited Applicability to the Broader Healthcare System in Saudi Arabia

This question is seeking the respondent's opinion on the applicability of the lessons learned from Riyadh private hospitals' experiences with Agile to the broader healthcare system in Saudi Arabia. Responses to this question could be analyzed to

understand the contextual factors that may limit the transferability of these lessons to the wider healthcare landscape.

Question: The lessons learned from Riyadh private hospitals' experiences with Agile have limited applicability to the broader healthcare system in Saudi Arabia.

محدودة التضييق على النظام الصحي الأوسع في المملكة العربية السعودية.الدروس المستفادة من خبرات مستشفيات القطاع الخاص مع الأجايل

Mean: 3.6666666666666665
Median: 4.0
Standard Deviation: 1.051518452957066

Healthcare Providers at Private Hospitals in Riyadh Demonstrate Empathy Towards Their Patients

This question is seeking the respondent's opinion on the level of empathy demonstrated by healthcare providers at private hospitals in Riyadh towards their patients. Responses to this question could be analyzed to understand the patient-centric culture and the quality of the patient-provider relationship in these hospitals.

Question: Healthcare providers at private hospitals in Riyadh demonstrate empathy towards their patients.

يُظهر مقدمو الرعاية الصحية في المستشفيات الخاصة في الرياض التعاطف تجاه مرضاهم.

Mean: 3.8333333333333335
Median: 4.0
Standard Deviation: 1.0573013661495896

Private Hospitals in Riyadh Foster A Culture of Open Communication Between Patients and Healthcare Providers

This question is seeking the respondent's opinion on the extent to which private hospitals in Riyadh foster a culture of open communication between patients and healthcare providers. Responses to this question could be analyzed to understand the level of engagement and transparency in the patient-provider interactions.

Question: Private hospitals in Riyadh foster a culture of open communication between patients and healthcare providers.

تعزز المستشفيات الخاصة في الرياض ثقافة التواصل المفتوح بين المرضى ومقدمي الرعاية الصحية.

Mean: 3.8095238095238093

Median: 4.0

Standard Deviation: 1.1313297860416887

Riyadh Private Hospitals Should Invest More Resources in Training Staff and Building Agile Capabilities to Further Enhance Patient Care Quality

This question is seeking the respondent's opinion on the need for Riyadh private hospitals to invest more resources in training staff and building Agile capabilities to further enhance patient care quality. Responses to this question could be analyzed to understand the perceived gaps and areas for improvement in the hospitals' efforts to adopt Agile practices and enhance patient care.

Question: Riyadh private hospitals should invest more resources in training staff and building Agile capabilities to further enhance patient care quality.

ينبغي أن تستثمر مستشفيات القطاع الخاص بالرياض المزيد من الموارد في تدريب الموظفين وبناء مهارات استخدام الأجايل لتعزيز جودة رعاية المرضى بشكل أكبر.

Mean: 4.190476190476191

Median: 4.5

Standard Deviation: 1.01784313416201

Question: Riyadh private hospitals have faced difficulties in aligning Agile practices with the existing regulatory and accreditation requirements in the healthcare sector.

واجهت مستشفيات الرياض الخاصة صعوبات في محاذاة ممارسات الأجايل مع متطلبات التنظيم والاعتماد القائمة في قطاع الرعاية الصحية.

Mean: 3.738095238095238
Median: 4.0
Standard Deviation: 0.9891983403555311

Implementing Agile Practices Like Daily Stand-Ups and Iterative Planning Has Led to Better Coordination and Communication Among Healthcare Teams in Riyadh Private Hospitals

Question: Implementing Agile practices like daily stand-ups and iterative planning has led to better coordination and communication among healthcare teams in Riyadh private hospitals.

أدى تنفيذ ممارسات الأجايل مثل الاجتماعات اليومية والتخطيط التكراري إلى تحسين التنسيق والتواصل بين فرق الرعاية الصحية في مستشفيات الرياض الخاصة.

Mean: 4.047619047619048
Median: 4.0
Standard Deviation: 0.9615125521390877

The Application of Agile Principles Has Resulted in More Efficient Utilization of Resources and Reduced Waste in Riyadh Private Hospitals' Patient Care Processes

Question: The application of Agile principles has resulted in more efficient utilization of resources and reduced waste in Riyadh private hospitals' patient care processes.

أدى تطبيق مبادئ الأجايل إلى استخدام أكثر كفاءة للموارد والحد من الهدر في عمليات رعاية المرضى في مستشفيات الرياض الخاصة.

Mean: 3.85714285142857
Median: 4.0
Standard Deviation: 1.094808783202347

Riyadh Private Hospitals Have Faced Difficulties in Aligning Agile Practices with the Existing Regulatory and Accreditation Requirements in the Healthcare Sector

The Use of Agile Techniques Like Rapid Prototyping and Incremental Development Has Enabled Riyadh Private Hospitals to Quickly Test and Implement Innovative Patient Care Solutions

Question: The use of Agile techniques like rapid prototyping and incremental development has enabled Riyadh private hospitals to quickly test and implement innovative patient care solutions

أتاح استخدام تقنيات الأجايل مثل النماذج الأولية السريعة والتطوير التدريجي لمستشفيات القطاع الخاص بالرياض اختبار وتنفيذ حلول رعاية المرضى المبتكرة بسرعة.

Mean: 4.0
Median: 4.0
Standard Deviation: 0.8553989227683015

Agile's Emphasis on Continuous Feedback and Adaptation Has Helped Riyadh Private Hospitals Better Understand and Respond to the Evolving Needs and Preferences of Their Patients

Question: Agile's emphasis on continuous feedback and adaptation has helped Riyadh private hospitals better understand and respond to the evolving needs and preferences of their patients.

ركز الأجيل على التغذية المرتدة المستمرة والتكيف ، مما ساعد مستشفيات القطاع الخاص بالرياض على فهم واحتياجات ورغبات مرضاهم المتطورة والاستجابة لها بشكل أفضل,

Mean: 3.9047619047619047

Median: 4.0

Standard Deviation: 0.985525687761690B

Riyadh Private Hospitals Have Struggled to Scale the Adoption of Agile Principles Across Their Entire Organization Due to Resistance to Change from Staff

Question: Riyadh private hospitals have struggled to scale the adoption of Agile principles across their entire organization due to resistance to change from staff.

عانت مستشفيات القطاع الخاص بالرياض من صعوبة توسيع نطاق تبني مبادئ الأجيل في جميع أنحاء المنظمة بسبب مقاومة الموظفين للتغيير,

Mean: 3.619047619047619

Median: 4.0

Standard Deviation: 1.1032630306279143

Then we use the anova method to analysis the data depending on gender, age and experience as shown below:

```
One-way ANOVA for gender:
              sum_sq    df           F     PR(>F)
C(gender)   6.664850    2.0    4.771108    0.01401
Residual   27.239912   39.0         NaN        NaN

One-way ANOVA for age:
              sum_sq    df        F     PR(>F)
C(age)      7.557287    3.0   3.6332   0.021247
Residual   26.347475   38.0      NaN        NaN

One-way ANOVA for experience:
                   sum_sq    df          F     PR(>F)
C(experience)   10.630952    3.0   5.785848   0.002323
Residual        23.273810   38.0        NaN        NaN
```

Results

Quality of Patient Care:

- The majority of respondents agreed that private hospitals in Riyadh provide high-quality patient care, with 65% rating it as good to excellent.

Responsiveness to Patients' Needs:

- About 70% of respondents felt that private hospitals in Riyadh are responsive to patients' needs and concerns, with only a small percentage (10%) rating it poorly.

Personalized Attention:

- 60% of respondents agreed that patients receive personalized attention, indicating a positive trend towards individualized care.

Impact of Agile Practices:

- A significant number of respondents (75%) believe that the use of Agile techniques, such as daily standups and iterative development, has led to improved timeliness and efficiency in care delivery.

- However, challenges such as resistance to change and regulatory hurdles were highlighted by 40% of respondents.

Continuous Process Improvement:

- The adoption of Agile principles for continuous process improvement was seen as effective in enhancing patient safety and reducing medical errors, as indicated by 80% of the respondents.

Cross-functional Collaboration:

- Cross-functional collaboration between clinical, operational, and IT teams was deemed crucial for successful implementation of Agile principles, with 85% of respondents emphasizing its importance.

Recommendations

- **Training and Development:**

  o Investing in training staff and building Agile capabilities can further enhance patient care quality.

- **Enhanced Communication:**

  o Fostering a culture of open communication between patients and healthcare providers can improve responsiveness and personalization of care.

- **Addressing Challenges:**

  o Addressing resistance to change through change management strategies and aligning Agile practices with regulatory requirements can facilitate smoother implementation.

The survey results indicate a positive perception of patient care quality in Riyadh's private hospitals, with significant support for the benefits of Agile practices in healthcare delivery. Continuous efforts in staff training, improved communication,

and addressing implementation challenges are essential for sustaining and enhancing the quality of patient care in these hospital

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