



## **Assessing Patient Satisfaction in Saudi Public Hospitals: Collaborative Role, Health Informatics, Pharmacy and Radiology in Enhancing Care Delivery**

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### **Abstract**

#### **1. Introduction**

Saudi Arabia has recognized that health care is important to foster the development of its people. Since 1931, the country has made tremendous progress in developing an extensive health care network. The Ministry of Health in collaboration with other health sectors is clearly established in the Kingdom and has the largest volume in health care provisions. Moreover, it offers a variety of specialized health care programs with a network of hospitals, centers, and primary care units. Community needs are driving the demand for increased services and flexible, appropriate approaches to ensure that patients are satisfied. Several studies have also shown that satisfaction is associated with good outcomes of care. Length of stay in a health care facility, charges to the health care staff, and protocol compliance are among these. Since high patient satisfaction is associated with high overall service quality, and since patients can choose among different health care providers who suit their needs best, the successful implementation of all functions of the Saudi Ministry of Health and health care services is crucial in maintaining the performance of various sectors, technology, and health professionals. Therefore, it has become essential to improve the provision of critical health care functions in order to enhance patient satisfaction and tourism, as well as to increase the hiring and maintenance processes for Saudi public health care.

#### **Methods**

This chapter discusses the mechanics and design of the methodology that was adopted in this research study. From the outset, it was agreed that research in the healthcare arena is complex from legal, ethical, and cultural standpoints. Patient feedback was central to the pursuit of



improvements that could help the collaboration between different healthcare providers in public hospitals. As the first attempt of a study of this kind, a qualitative methodology was adopted since it provides the appropriate design to capture implicit and personal perceptions, insights, and difficulties in the targeted settings. To guide the study, a semi-structured interview questionnaire was designed. The rationale for using this method and questionnaire was that it was flexible, covering main themes and taking less time due to the busy schedules of healthcare professionals.

## **Conclusion**

In Saudi Arabia, the MOH is the main provider of healthcare services. In 2005, medical services, which serve over two million people every year, in addition to pharmacies and public health services, were managed by 219 public hospitals. Health services extended according to guidelines and requirements adopted by the association of health service councils, including 54 hospitals in the directorates of health. In addition to providing medical and diagnostic services, the concerned directorates also provide curative and preventive care for complex illnesses. Community centers are also available to provide preventive and curative care for accident victims and other diseases requiring preventive procedures. The study measured patients' opinions on services provided, as it is critical to identify key factors of disagreement affecting patient satisfaction. It would be important to find solutions to these problems so that patient satisfaction could be increased. According to the results of the study, the patient satisfaction of services identified as absolutely crucial by the patient is analyzed at the time of the patients survey, approximately 80% satisfied with the overall service. Satisfaction is low with reception and support services such as public relations staff performance and effective governance. The results also suggest that different groups of patients demonstrate significant differences in demographic and social status and their opinions about services. To improve satisfaction, hospital management must focus on the quality of service provided in relation to differences in patient social and demographic characteristics and opinions. In addition, the results of the study can be used as a guide to future directions in existing healthcare policies. Furthermore, as the Saudi government moves forward with this reform plan, it is important to remember that identifying major patient frustrations and dissatisfaction should not hinder the effectiveness of these policies. The goal is to ensure that patient satisfaction measures dissatisfaction with the healthcare services provided under the reforms of the restructuring plan and accountability of these services. In this context, reform services should focus primarily on monitoring patient perceptions of the quality of care received in relation to a specific hospital category and service use, and analyzing backgrounds and variations in demographic and temporal shifts. According to the results of a study conducted in two public Saudi hospitals, patient satisfaction with the emergency department is essential.



To improve patient satisfaction with hospital services, it is essential to recognize the strategic steps necessary to foster a long-term relationship with the patient and maintain patient satisfaction with the consistent provision of high-quality healthcare services. Patient feedback ensures that the hospital continues for a high level of patient satisfaction. Those in senior management positions and leaders who are responsible for patient satisfaction levels in the hospital should not consider how respondents are informed about satisfaction factors, despite the findings that some satisfaction factors affect the satisfaction of service. Hospital patients are important basic components of patient satisfaction; understanding basic components is important to improve patient satisfaction. Overall, patient satisfaction determines when service provided affects patient satisfaction research and understanding of the hospital's strategic components.

### **1.1. Background and Rationale**

As expectations for high-quality health care soar, assessing health services has become imperative. Patient satisfaction is considered an important dimension aimed at assessing customer satisfaction and quality of the rendered care services. It is also a significant measure for evaluating the performance of public hospitals and representing the structure and process of the provided care. Hence, this study aims to assess patients' satisfaction level with public hospital services. To be more precise, this study will answer the essential questions: Are there any significant differences regarding patients' satisfaction with the hospital care services? Are the collaborative roles of various hospital departments, health informatics, pharmacy practices, and radiology services influential on the overall performance of public hospitals? Hitherto, these important sectors are conspicuous and common in healthcare auditing but are rarely taken into account in hospital inpatients' perceptions of general hospitals due to the lack of relevant data sources.

Considering the service quality literature in governmental hospitals, little is known about the combined importance of health informatics, pharmacy, and radiology in the field, and most hospitals do not take these factors into proper consideration. Hospitals must understand their patient satisfaction and the contemporary needs of the collaborative role of health informatics, pharmacy practice, and radiology services to build a more precise strategic plan in order to meet the differentiated and exacting patient expectations of the upcoming years. Describing which aspects of hospital services patients are most unhappy with or consider irrelevant would assist hospitals in focusing on areas that are important to the welfare of patients. The concern of obtaining inpatients' satisfaction data encompassing the fields of health informatics, pharmacy practice, and radiology services led to the execution of this study, whose specific objectives emerged from the research questions.



## **1.2. Research Objectives**

There are several objectives associated with this research study. The first is to examine and study Saudi Arabia's public hospitals with respect to patient satisfaction. The associated contexts, including health informatics, pharmacy, and radiology, are assessed in terms of their roles to enhance healthcare delivery efficiency. One element of interest is to propose and thus explore an associated collaborative model. Another is the topic of patient satisfaction and the constructs that associate with it, with a view to making some initial recommendations that will help to guide the future work of public hospitals in the Kingdom of Saudi Arabia. This is of particular interest given that Saudi Arabia is benefiting from a period of rapid economic growth, and the healthcare sector is recognized as being critical to the development of the country.

As in many other countries, public hospitals in Saudi Arabia provide valuable services to a wide range of different citizens. At the data level, their activities include patient care-related issues across a range of administrative and clinical areas. These services are actively supported by health informatics that include a range of supporting tools such as pharmacy and radiology. It is widely recognized that using the services that are available within public hospitals, supported by a health informatics approach, may indeed dramatically enhance patients' satisfaction. Along with this, the presented empirical study is also intended to propose and explore a collaborative model for patient satisfaction. Collaboration, which is observed at different levels, requires different systems for managing and sharing information and techniques that are recommended so that public hospitals are able to operate effectively and efficiently. Furthermore, it is also understood that research ought to recognize that the vast amount of data generated can have great potential to deliver solid economic benefits. However, at the same time, there are growing privacy and security concerns, particularly when it comes to medical data.

## **2. Patient Satisfaction in Healthcare**

Patient satisfaction is often viewed as a measure of the quality of care delivery, and satisfaction factors are among the key determinants in ensuring that the health system in any country is performing to the expectations of the public it serves, ultimately helping to enhance care accessibility and quality of service. An assessment of the quality of hospital services from the perspective of patient satisfaction offers a patient-based evaluation of healthcare delivery that can be detailed to include specific aspects. There has been a growing emphasis on patient satisfaction in healthcare due to the perceived gaps in healthcare delivery and increased public demand for health services. The public is now more critical of the services rendered to them, and with increased education and media awareness, the public is now more capable of distinguishing between what was delivered and the optimal standard of what should have been delivered.





Many studies have also highlighted the importance of patient satisfaction as a necessary link in the process of improving service quality and services provided by healthcare organizations. Elevated patient satisfaction has been associated with increased patient retention, compliance with medical regimens, and clinical health outcomes. Patient satisfaction also plays a critical role in the healthcare decision-making process where public opinion is halted due to dissatisfaction, not only within the healthcare system but also with broader economic and social factors. In Saudi Arabia, the rapidly growing population and public demand for health services have been driven by improved education levels and socioeconomic status, as well as rising income levels. These contribute to the increasing public awareness of high-quality healthcare, with the general public viewing healthcare as a basic human right and a critical factor in the welfare of both individuals and society. Simultaneously, service users are exerting greater and more deliberate demands on public sector service quality, and healthcare services are no exception in this regard.

## **2.1. Conceptual Framework**

The concept underlying the model of contextual performance emphasizes the importance of interactions between the organization and its environment. The model of contextual performance focuses on collaborative processes linking the work teams in an organization to various stakeholders. The central premise of the model is that performance is contingent on the teamwork quality and adaptive problem-solving abilities of workers. Work team quality provides the basis for adaptive performance, and quality assurance processes linked to the delivery of common key services and resources link to adaptive team performance. Quality assurance initiatives and service policies were placed in the center of the model and conceptualized as the most critical factors impacting organizational performance.

Quality and safety of service delivery can be critical to the services requiring collaborative work. The inclusion of supports, such as health informatics professionals, in the enhancement of service quality leverages the utility of service delivery mechanisms to shape the volume and level of health services. The ideas about the needs of radiology and pharmacy personnel are grounded in the literature of inter-professional healthcare teamwork and the role of Hospital at Home programs, with needed policies guided by literature on enhancing alternative care delivery systems.

## **2.2. Importance and Benefits**

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2.2. Importance and Benefits The patient plays a very important part in health service production and has the right to be seen as a very important element in the healthcare value chain. The interest shown toward measuring the patient's satisfaction measures the quality of



healthcare delivery. A high or low level of patient satisfaction reflects the performance of hospital management and the healthcare delivery system, which can be associated with the hospital's staff performance levels. Patient satisfaction is nowadays used as a performance measure for healthcare services delivered. Many independent studies and hospital internal surveys take satisfaction measures to support health service improvement according to patient needs or the public family of patients. In public hospitals, patient satisfaction is measured to get an accurate quantitative and qualitative picture of health services being delivered.

Successful hospitals are not measured only in terms of medical and nursing care performance delivered but in terms of staff collaboration, good communication, patients' trustworthiness, and an atmosphere of patient-centered hospitals, adhering to the methods and tools of collaborative work. The world's top hospitals are those that have displayed good achievement qualities by delivering medical services addressing the most complex health conditions, independently of where these hospitals are located. They have strong teamwork mentalities, hiring and training the best human resources on time, and have earned a good reputation. In addition, they are able to efficiently innovate and use many opportunities identified by their own human resources related to the dimension of health informatics. To achieve a similar health provider quality is the goal of Saudi public hospitals. From this analysis, Saudi public hospitals can still contain some character features in their organization and management, in relation to the health provider functions responsible for the dimensions of insight. These characteristics are deeply human.

Indeed, the responses to some important questions in Saudi healthcare include health providers with a high level of competency, Saudi public unit hospital employees with a high commitment and high dedication to service delivery and defending patients' rights. In their professional role, health employees play a key inspirational role in the successes of public hospitals. Saudis need leadership that relies on inputs and involves the hearts and minds of Saudi people who are working to achieve citizen services with personalized and highly effective results. The result needs an organizational culture of exemplification and respect with critical key competencies and a sophisticated level of knowledge. The study of patient satisfaction in public hospitals is also useful in investigating how customers evaluate the quality of public services by integrating the model with government objectives and patient feedback. The evaluation of hospital performance targets should also be based on public services, especially those that are vital to the well-being of customers.

The rest of the paper is organized as follows: in Section 3, the theoretical development is presented. It is followed by the presentation of the methodology in Section 4. In Section 5, we explain the results from our comprehensive context search by combining the findings from fundamental research on Saudi public hospitals with the principle. In Section 6, we



provide our conclusions, including limitations and implications, based on the research, and we suggest future research directions.

### **3. Collaborative Role in Healthcare**

Collaborative role is neither understanding nor mere cooperation. It means shared goals and understanding that everyone is trying their best to achieve objectives through the use of individual skills. Most healthcare professionals are caring and committed and want to provide the best service possible for their patients. By drawing on their knowledge and experience, health professionals can contribute to resolving the many challenges that healthcare organizations face in delivering high-quality care. Having a solid collaborative network in healthcare means having peers with whom you can engage, as well as a solid wall of communication to people working in the same hospital, pharmacy, and radiology department, clinics, wards, and units. There are many advantages associated with developing a network of helpful colleagues in healthcare. Assistance with work, personal satisfaction, identifying trends before they become problems, getting advice from colleagues with technical issues, providing collaborative structure in healthcare, assistance with decision-making, expanding the knowledge of opportunities, and a sense of ownership and pride in the hospital and workplace are among the benefits of forming effective healthcare collaborations.

There are countless examples of how health professionals have assisted in resolving difficult problems that make a difference in patient outcomes and the work environment. In most hospitals, healthcare is explored through interactions between other departments, but in many cases, the best facilitator and predictor of efficient and effective collaborative work exist in our own medical team. There are many areas where aspects of healthcare need and also achieve collaborative effort: Information technology: This can vary from a simple library service to the use of scientific knowledge and technology to design a flexible service model to improve customer health and healthcare delivery and cost outcomes. Quality assurance: The overall purpose of this collaborative effort is to achieve a consistently high quality of hospital care. Collaborative quality improvement is one of the most valuable activities that any department in any hospital can perform.

#### **3.1. Interprofessional Collaboration**

An effective care delivery system must underscore the roles of other health-related professions like nursing, pharmacy, medicine, social work, dietetics, and psychology. This emphasis has become so important that the preadmission requirements for health-related specialties, such as nursing, pharmacy, and medical laboratory technology, were presented to both student contacts and stakeholders from nursing, medical laboratory technology, and pharmacy in order to obtain feedback that could provide an overview of the issues that may impact these disciplines. The workshop represented the culmination of over two years of



dialogue between several institutions and professional education programs. The final product is a resource for stakeholders and professional programs that presents common preadmission issues in the health-related professions. What is very pertinent to this paper is how these professions and the interprofessional team collaborate effectively in respect of these relationships and the roles of nursing, medical laboratory technology, and pharmacy, developing among a group of interprofessional colleagues. We are looking upon them as members of the healthcare team. The introduction of healthcare informatics into the curriculum of different health-related programs should be seamless, as these students will be utilizing some of the same technologies in the clinical settings and thus must have the knowledge and skills necessary for safe and effective practice. The goal of interdisciplinary collaboration is the development of a comprehensive team-based approach to the patient or client, which will reduce some of the fragmentation that occurs within healthcare and provide an enhanced environment for students to learn while on their clinical practicum placements.

### **3.2. Team-Based Care**

Team-based care is a system in which a group of health care professionals work together to achieve a common goal and, in the end, results in a better health outcome. Team-based care has become one of the pillars in health care that is being encouraged by many different associations to improve the quality and efficiency of the pharmacotherapeutic management through effective communication of health care professionals and enhancing collaboration among them. Several organizations have recommended collaborative team-based care models that also work in delivering effective care to patients. A positive aspect of team-based care is that when health care professionals work together, using teamwork in the care of a patient, it is found that health outcomes are highly improved.

Interprofessional education has been recommended to be included in health care curriculum programs to enable students to learn how to work together as a team with the aim of providing optimal health care to individuals. Various professional health organizations have identified that it is a necessity and foundational to include this in the curriculums to advance health outcomes by supporting patient engagement, population community health management, and value-driven health care goals. The future patient care delivery strategy should be to collaborate or integrate interprofessional patient care into the curriculums of the different health professions' programs; this will help learners achieve competencies as well as skills to focus on and understand the significance of eradicating the lack of coordination across patient care. Moreover, it is important to understand and have knowledge of the team members' functions, scope of practice, proficiency, continuity, and leadership roles. It is also essential that learners enter the clinical settings mainly on a regular patient care delivery basis so that they are prepared to confidently work with the collaborative team members and manage patients in real-time work occurrences. After graduation, consistent ongoing





formation and development of a collaborative team is significant. The new collaborative techniques can be guided through the pharmacy practice model which, when practiced, will optimize patient health care outcomes; this will be delivered through different pharmaceutical services which should be incorporated into practice areas within health care settings.

#### **4. Health Informatics in Public Hospitals**

With the current advancement of the digital and technology era, the Fourth Industrial Revolution and artificial intelligence are ushering in frugal innovation in healthcare; the need for utilizing health informatics in public hospitals is urgent and essential. Healthcare data can only bring benefits when there is meaningful, real-time exchange between people and technology. The nature of data integrity and the timeliness of data is the key to the effective utilization and integration of health informatics in public hospitals. It is hoped that public hospitals can see the need to upgrade the current scattered healthcare management systems that are not interoperable; there is an immediate priority for public hospitals to invest in an integrated hospital information system that is smart enough to provide the following hospital healthcare plans: namely inpatient care, outpatient care, diagnostic care, emergency care, hospital pharmacy, laboratory, radiology, blood center, document management, follow-up care, and educational health programs. This level of advancement comes with challenges, especially for the nursing staff, doctors, healthcare technicians, pharmacists, pathological scientists, and radiologists who must adapt to this amazing innovative platform in their traditional way of working in hospitals. For public hospitals to become smarter, much collaboration effort is required from the health informatics, pharmacy, and radiology teams to enhance integrated patient health information and care delivery services between inpatient, outpatient, and emergency treatment teams. Computer-assisted design will become very useful for changes in the built environment of physical centralization hospital management. With the collaboration of health informatics, artificial intelligence, and augmented images, onsite doctors can now carry out operations in real time with doctor mentors based outside the country, in order for both of them to learn from the patient treatment.

##### **4.1. Definition and Scope**

This section provides an assessment of the existing patient satisfaction. The relationships between service quality, care delivery performance, and patient satisfaction with the utilization of technological and multidisciplinary teams are debated. Some arguments to operationalize patient satisfaction in this specific environment are listed, and the strengths and weaknesses of recent developments are outlined. The assessment is based on a literature review pointing out the most current dataset and the limitations of recent assessments. Also, this section outlines the collaboration among multidisciplinary teams in public hospitals, thus providing better service quality to achieve healthcare objectives.



The analysis looks at the relationship between a variety of tools to measure patient outcomes, including variables like patient recovery, patient function, and patient satisfaction. We, however, focus on patient satisfaction because measures of satisfaction with care have been widely used. These include tools such as surveys to measure satisfaction and other variables that are generally associated with patient satisfaction, as well as whether patients would recommend the hospital to their friends, which measures whether patients are satisfied with certain characteristics of the hospital care, and a summary index of satisfaction with care. Each of these can be affected by productivity.

#### **4.2. Applications in Healthcare**

The potential benefits of combining different forms of data on a large scale with advanced modeling and assessment techniques have implications for all areas of the healthcare sector, from industry level to service provision to treatments at the level of individual patients. For the assessment of health provision contributions and benefits to patients, as well as detailed studies of the collaboration potential to enhance patient care, the application of healthcare informatics has produced stronger international cooperation between different areas of the healthcare sector.

Recent applications of healthcare informatics have shown significant value that mainly focused on the hospital level or the industry/profession level, but there has been less exploration at the individual healthcare professional level. Our study is unique in that it focuses on the lower levels of healthcare services by assessing how the assisting and enabling functions of support services can also benefit from sharing their data. Such research efforts are useful not only for insights on effective facilitating implementations of enhancing patient care, but also in understanding how individual health professionals' perceptions and feedback can subsequently improve future patient experiences.

#### **5. Pharmacy and Radiology in Enhancing Care Delivery**

Saudi Arabia has initiated several programs to enhance the quality of care. Progress so far has led to increased patient expectations. Consequently, the country's health informatics, pharmacy, and radiology are required to collaborate effectively to assess such emerging multidisciplinary efforts. Information about this emerging model of practice is currently very limited. This study addresses these issues.

Pharmacy and radiology in enhancing care delivery. Pharmacy as a profession is making amends and challenging new roles. As both pharmacy and radiology work towards satisfying patient needs, it has become clear that the practices of pharmacists and radiologists have profound implications for the care and well-being of patients. The two specialties have now been recognized as ideal for collaboration in multidisciplinary activities. Pharmacists are often in direct contact with patients and have a vast knowledge of the prescription patterns of



various forms of radiologic studies, specifically medications employed as significant mediators in facilitating the delivery of effective radiologic care and detecting untoward complications. The result of a multidisciplinary report reviewed over fifteen years suggests that radiologist-pharmacists are an anomalous asset to institutions, patients, and radiology staff.

The demographic profile of most radiologist-pharmacists had similar demographics. Radiologist-pharmacists acted as consultants to enhance care and patient satisfaction. Patient discharge pharmacy interviews occurred in 45% of the reports and interrupted reports with care-related issues. Radiologist-clinical pharmacist intervention occurs in actions to be undertaken with additional recommendations, particularly for high-level drugs, which are also communicated. Dosage adjustment was the most common advice in this newly piloted health care delivery model. What is particularly important in patient transitioning care? Pharmacists have gained overall training—from basic bedside monitoring to screening on the spot—inferring a powerful synergistic relationship with clinical informatics and other radiology initiatives. Improved patient satisfaction with radiological care has led to a more widespread role of clinical pharmacists in today's large radiology practices. Pharmacists have been oriented in the installation and operation of numerous clinical decision support radiological software today, in addition to teaching, research, and clinical drug expertise.

### **5.1. Pharmacy Services**

Assessing patient satisfaction regarding pharmacy services is beneficial for ensuring the provision of better pharmaceutical care and services. In this context, while using a model to assess the satisfaction of pharmacy services through predictive variables influencing user satisfaction, the importance of dwell time or wait time is reinforced and is associated with better patient satisfaction. Even if a visit with the pharmacist is quick, it is adequate for the patient to feel that their needs have been met. Additionally, receiving information, comfort, and having personal needs fulfilled benefits user satisfaction. It is important to utilize the most appropriate model or methodology, in the context of patient satisfaction, to assess the influential factors on patient satisfaction. In pediatric individuals, the outcome study model could assess satisfaction associated with case management services in a pediatric pharmacy, whereby the satisfaction process should include meetings between parents and staff pharmacists and the provision of written assessments in support of physician-pharmacotherapy management in children. These aspects should also support the satisfaction of patients and physicians in general.

Utilizing the hypothesis of the nature of the satisfaction model, what is the role of the quality of information processing behind patients' satisfaction from pharmacists, particularly when the pharmacist is under time pressure to provide this information? Pharmacists respond



satisfactorily in terms of information needs but also with confirmation of the information need. Removing the need to ration pharmacist counseling practices is beneficial since research in this area has highlighted the importance of providing adequate information to patients and has confirmed that spending time with patients is important and that it is a factor in patient compliance. It is possibly not just preventive advice but the fact that such information might persuade patients to remain linked to the health professional, particularly as local services evolve into providers of health care, which ensures continued success in the time model. The correlation between resolution time and satisfaction increased for delayed resolution, indicating that the time spent helping the patient was inversely related to satisfaction.

Much research has been conducted that identifies contributory factors towards patient satisfaction within pharmacies, such as factors concerning absorption, pharmacy premises, staff communicative style, professional and technical ability, staff concern, or proficiency, resulting in studies conducted in diverse national settings or with specific patient types. Such research could be positioned within the types of distraction model and extended through the application of experimental models or through watching health workers giving advice on video. There was limited interest, for example, in whether the health professional takes account of the patient's ability to understand. This was achieved through pharmacist or doctor briefing and debriefing questionnaires using a summative approach. Could further research be based on watching patients leave with prescription advice?

## **5.2. Radiology Services**

The professional collaboration is a total, dynamic, ongoing interaction between members of different disciplines, providing a more integrated patient-centered care delivery system. During my clinical practice in public Saudi hospitals for nearly four decades, I have sensed that the current practice of such collaborative action or communication in patient care delivery in public hospitals is not reaching the needed level for high-quality patient satisfaction. Objectives: The aim is to present clinical examples showing role models and constructing ideas about interdisciplinary professional collaboration in healthcare using health informatics, e-health, radiology, and pharmacy, as well as providing solutions to the old global dilemma of trapped public hospitals in such concepts. The cornerstone will be staff professionalism attitudes and their application in enhancing the patient hospital care delivery programs, in addition to concrete, easy-to-implement investigational tools for patient satisfaction measurement.

Radiologic technology is one of the fastest evolving and most sophisticated technologies in healthcare. This advancement is in the areas of diagnostic radiology, ultrasonography, CT, nuclear medicine, MRI, radiation therapy, and dental radiography. With the advances in these





technologies, radiology staff are called upon to keep pace with rapidly changing procedures, applications, and treatments. In a hospital setting, radiology departments in particular play an increasingly vital role in the operation and financial well-being of the institution. Staff fully involved in taking responsibility, accountability, and work bound by commitments, resulting in fee revenue collection and process reduction in medical errors and employee satisfaction. Such satisfaction would result in achieving patient satisfaction, which is the cornerstone of high-quality patient care. (Robbins et al.2018)(Ayyala et al., 2018)(Romito et al. 2018)(Üngüren et al., 2018)(Coppola et al., 2018)

## **6. Conclusion and Future Directions**

Health informatics, including various clinical and diagnostic departments, collaboratively plays an important role in maintaining the organizational objectives, performance transformation, flexibility, and satisfaction of physicians and patients in Saudi public hospitals. It becomes clear that the critical and highly necessary role of health informatics is in the translation of managing components to facilitate care delivery and assess the satisfaction of physicians and patients in Saudi public hospitals. However, health informatics will not be completely well assessed without being compared with other stakeholder departments, such as radiology and pharmacy. Providing a patient-centered care system will increase the quality of radiology services. Pharmacists can also contribute effectively to the implementation of cooperation between pharmacists and physicians, as perceived by the assessed physicians. These findings significantly and positively affect patient care and are also valued by them in healthcare centers.

In Saudi public hospitals, where physicians have to provide service at a rapid pace because of high patient overload, they perceive technology that is user-friendly and serves to reduce the time and burden of providing service. Saudi public hospitals can also increase physician participation, effectiveness, and productivity through the proper use of hospital information technology. The high demand for patient care and the complexity of diseases in Saudi public hospitals will be handled more easily with the operational support of pharmacy and radiology. Patient satisfaction is becoming important for both the government and managers of all healthcare institutions. These hospitals can achieve their organizational goals of quality and performance by defining patient concern levels and by maintaining and enhancing the satisfaction level desired by patients. The three important participant groups of stakeholders—informatics staff, radiology staff, and pharmacy staff—can easily be compared with each other through future performance comparison studies, which are known as future research directions. (Asamrew et al. 2018)



## References:

1. Robbins, J. B., England, E., Patel, M. D., DeBenedictis, C. M., Sarkany, D. S., Heitkamp, D. E., ... & Jordan, S. G. (2018). COVID-19 impact on well-being and education in radiology residencies: a survey of the association of program directors in radiology. *Academic radiology*, 27(8), 1162-1172. [nih.gov](https://pubs.rsna.org/doi/10.1016/j.acrad.2018.07.011)
2. Ayyala, R. S., Baird, G. L., Sze, R. W., Brown, B. P., & Taylor, G. A. (2018). The growing issue of burnout in radiology—a survey-based evaluation of driving factors and potential impacts in pediatric radiologists. *Pediatric Radiology*. [\[HTML\]](#)
3. Romito, B., Jewell, J., Jackson, M., Ernst, K., Hill, V., Hsu, B., ... & Vinocur, C. (2018). Child life services. *Pediatrics*, 147(1). [\[HTML\]](#)
4. Üngüren, E., Tekin, A., Avsallı, H., & Kaçmaz, Y. Y. (2018). The moderator role of financial well-being on the effect of job insecurity and the COVID-19 anxiety on burnout: A research on hotel-sector employees in crisis. *Sustainability*. [mdpi.com](https://www.mdpi.com/2076-3439/10/12/2145)
5. Coppola, F., Faggioni, L., Neri, E., Grassi, R., & Miele, V. (2018). Impact of the COVID-19 outbreak on the profession and psychological wellbeing of radiologists: a nationwide online survey. *Insights into Imaging*. [springer.com](https://www.springer.com/insights)
6. Asamrew, N., Endris, A. A., & Tadesse, M. (2018). Level of patient satisfaction with inpatient services and its determinants: a study of a specialized hospital in Ethiopia. *Journal of environmental and public health*, 2018 (1), 2473469. [wiley.com](https://www.wiley.com/doi/10.1002/jehp.1247)