THE IMPACT OF HEALTH INFORMATICS ON HEALTHCARE QUALITY AND PATIENT OUTCOMES IN SAUDI ARABIA IN 2022

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Abstract:

Background: Hospitals are investing in health information technology (HIT) to improve the nation's healthcare system. HIT uses computer hardware and software to organize health-related data, promote dialogue, and assist in decision-making. Saudi Arabia has made significant progress in HIT, enhancing patient care, safety, and overall healthcare quality. However, challenges such as low computer literacy and IT staff support remain. A survey in Jordan and Palestine found that most hospital departments use computer systems, but half need specialized training in health informatics (HI).

Objective: The general objective of this study is to assess the impact of health informatics on healthcare quality and patient outcomes in Saudi Arabia in 2022.

Conclusion: This research project evaluates the impact of health informatics on healthcare quality and patient outcomes in Saudi Arabia in 2022. Health informatics improves treatment quality, reduces care-processing time, and increases patient satisfaction. It also aids clinicians in acquiring diagnostic data, providing drugs, reducing medical errors, and managing physician/nurse teams. However, challenges like low computer literacy persist. Health informatics positively impacts healthcare workforce development, training, research, and innovation, facilitating new treatments and improving patient outcomes.

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Introduction:

Hospitals' growing interest in and investment in health information technology (HIT) is a direct response to the urgent need for a swift digital transformation in the nation's healthcare system. This pressing demand has also led to a significant increase in the need for Health Informatics (HI) graduates from various fields, including Information Technology and Healthcare professions. Health informatics greatly influences modern healthcare systems, commonly called healthcare information technology (HIT). It includes using information processing, which includes computer gear and software, to organize health-related data, promote dialogue, and assist in making decisions. Saudi Arabia has had notable progress in health informatics in the past several years, which has had a revolutionary impact on patient care, safety, and the general quality of healthcare (1)

Healthcare technology plays an essential role in hospitals by enhancing treatment quality and performance while indirectly increasing profit. Electronic medical records and electronic provider order input can help reduce care-processing time while increasing patient outcomes. However, without contemporary information technology, healthcare services may become inefficient and lose patient trust. Healthcare technology may also improve operational efficiency by allowing doctors to gather diagnostic data, deliver medicine, decrease medical errors, identify patients, manage physician/nurse teams, and improve service quality and safety. Patients in Turkey prefer private hospitals to government institutions because they are better satisfied with the care given by physicians, nurses, and support personnel who employ cutting-edge medical equipment. Technology enhances treatment approaches and strengthens data links among hospitals, physicians, health centres, pharmacies, and patients (2).

Healthcare information technology (HIT) is defined as "the application of information processing involving both computer hardware and software dealing with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making." It comprises a wide range of technologies, from simple charting to complex decision assistance and medical device integration. HIT provides several chances to improve healthcare, such as minimizing human mistakes, enhancing clinical outcomes, simplifying care coordination, increasing practice efficiency, and monitoring data over time. Since the initial IOM study, there has been faster development and implementation of health information technology, with differing degrees of evidence on its influence on patient safety (3).

In 1998, the Committee on the Quality of Health Care in America, established within the Institute of Medicine (IOM), was asked to identify strategies for improving the quality of health care in the United States. As part of this effort, the committee published a seminal report in March 2001, Crossing the Quality Chasm: A New Health System for the 21st Century, which focused on issues relating to healthcare quality in this country. The report concluded that the current system does not consistently provide the high-quality care Americans expect and deserve. It proposed a strategy for redesigning the system to improve quality, highlighting the importance of information and communication technology (IT) in achieving substantial improvement. The report also called for a national commitment to building an information infrastructure to support healthcare delivery, consumer health, quality measurement, public accountability, clinical research, and clinical education (4).

The Saudi Arabian Ministry of Health introduced the electronic health system in 1988 to improve the country's healthcare system. The 2011 National E-Health Strategy aimed to facilitate the transition from paper-based to electronic platforms for improved healthcare services. Despite significant efforts to adopt EHRs in healthcare facilities, challenges such as low computer literacy, lack of IT staff support, and customization for different hospital systems remain. Both Saudi and non-Saudi healthcare professionals in Saudi Arabia exhibit high levels of knowledge and utilization, highlighting the need for further development and adaptation to meet the diverse needs of the healthcare industry (5).

A survey conducted in Jordan and Palestine found that most hospital departments use computer systems for services, with over half receiving computer skills training. However, half needed specialized training in health informatics (HI). Hospitals provided the necessary support for HI systems, with 58.0% and 73.6% agreeing. The majority of health professionals (86.0%) needed skills to monitor diagnosis and treatment, including access to clinical findings. Other skills needed included using shared hospital services (85.6%), medical records (84.7%), managing electronic patient data (84.5%), using patient medical records for clinical research (83.4%), and effectively using

telecare services and technologies (74.9%). The study concludes that health professionals in Palestine and Jordan need training in HI and recommends educational programs (6).

General Objective:

The general objective of this study is to assess the impact of health informatics on healthcare quality and patient outcomes in Saudi Arabia in 2022.

Specific Objectives:

1. To evaluate the effectiveness of health informatics in improving the quality of healthcare services in Saudi Arabia.
2. To assess the impact of health informatics on patient outcomes, such as patient satisfaction, morbidity, and mortality rates.
3. To investigate the role of health informatics in enhancing the efficiency and effectiveness of healthcare delivery in Saudi Arabia.
4. To identify the challenges and barriers facing the implementation of health informatics in Saudi Arabia and propose solutions to address them.
5. To evaluate the impact of health informatics on healthcare workforce development and training in Saudi Arabia.
6. To assess the impact of health informatics on healthcare research and innovation in Saudi Arabia.

Conclusion:

In conclusion, this research project aims to assess the impact of health informatics on healthcare quality and patient outcomes in Saudi Arabia in 2022. The use of healthcare technology, particularly health informatics, has become crucial in improving treatment quality and performance in hospitals, ultimately enhancing patient outcomes. The implementation of electronic medical records and electronic provider order input systems has shown promising results in reducing care-processing time and increasing patient satisfaction. Furthermore, healthcare technology helps clinicians acquire diagnostic data, provide drugs, reduce medical mistakes, and efficiently manage physician/nurse teams, all of which contribute to improved operational efficiency. Patients' preference for private hospitals over government facilities highlights how technology may help provide cutting-edge medical equipment and superior services. It also enhances data connectivity between hospitals, physicians, health centres, pharmacies, and patients, allowing for communication that is more efficient and collaborative. The literature review revealed notable progress in health informatics in Saudi Arabia, with a focus on the transition from paper-based to electronic platforms. However, challenges such as low computer literacy and the need for further development and adaptation to meet diverse healthcare industry needs persist. The impact of health informatics on healthcare workforce development and training in Saudi Arabia has been significant, with healthcare professionals exhibiting high levels of knowledge and utilization. Health informatics has also had a positive impact on healthcare research and innovation in Saudi Arabia, facilitating the development of new treatments and improving patient outcomes.

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