Effectiveness Of Technology On Organizational Development And Services In The Saudi Health Sector

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Abstract

Background: modernization leads to the entanglement of technology in every aspect of human life. Intervention based on effective and appropriate technologies is one of the most pressing innovations of new and advanced technologies. Through these innovations, organizational development is witnessed based on the structural, functional, and operational paradigms. In the healthcare sector, the effectiveness of new and advanced technology yields the most appropriate interventions for healthcare services. In the kingdom of Saudi Arabia utilization of new and advanced effective technologies for the sake of organizational development results in the prognosis greater level of prognosis for the health services

Aim: To understand the effectiveness of technology on organizational development and services in the Saudi Arabia health sector.

Method: The secondary data-based review was conducted by using published articles, and reports from peer-reviewed journals. The study was conducted on the literature from 2019 – 2022 to understand the initiatives taken by the government of Saudi Arabia.

Results: The effectiveness of technology was studied that had an impact on the services in the healthcare sector and organizational development in KSA. The effectiveness of technology is based on initiatives taken by the Saudi healthcare sector based on their healthcare organizational development. The primary intention of the effectiveness of technology is based on the employee characteristics, instrumentation characteristics, formal application in the hospital setting, and utilization of means of technology along with the type of technology.

Conclusion: the evolution of the healthcare sector in the kingdom of Saudi Arabia is based on an adaptation of different healthcare technologies to develop their organizational reputation, workforce, healthcare mechanism, and general healthcare appearances. Understanding the different types of technologies operationalized for the healthcare sector is usually embedded into the appropriate and effective decision-making regarding the incorporation of technologies regarding health in organizational development.

Keywords: Effectiveness, Services, Technology, organizational development, healthcare sector, Ministry of Health, Kingdom of Saudi Arabia

Introduction:

The organization wants itself to be within the sphere of operational excellence. For this reason, they need to develop, modify, and intervene in the latest technology and equipment. The organizational development process involves creating (Dalmas & Azzopardi, 2019), designing, and implementing the organizational changes that proceed to account for while evaluating the intra and extra-organizational environment impact (Fernandez et al., 2019).

For instance, a turbulent healthcare environment develops theoretical and practical strategies that consistently provide planning strategies and programs of change to ensure the essence of development in the healthcare organization (O'Connor, 2020). Approaching the concept of change is widely accepted as a key constituent of the competitive advantage organization; this is because it keeps the organization consistent in change and quickly as possible to healthcare organizational management (Vaishnavi et al., 2019; Al-Kubaisi & Shahbal, 2021).

The healthcare sector is the largest consumer of public spending (Dash et al., 2019). According to studies, the healthcare sector is the most expanding and growing structure (Frimpong et al., 2022; Atella et al., 2019). Comparison between the healthcare sector with the other sector portrays the result of higher spending related to the organization's advancement (Stević et al., 2020; Papa et al., 2020). Information systems in healthcare organizations portrayed the statistics that structure needs improvement, maintenance, and properly equipped to meet the high challenges of the healthcare organization (Atasoy et al., 2019).

The decline in healthcare services results in the elevation of complex and undesirable health problems among the patient (Lee & Yoon, 2020). In the government healthcare organization, the most important agenda is to reduce the cost of healthcare services i.e., treatment, medication, laboratories, etc. (Babaei et al., 2019; Golden et al., 2021). Through this, the governmental organizations' trust, efficacy, and effectiveness evolve (Toshkov et al., 2020).

The Kingdom of Saudi Arabia (KSA) is working with the World Health Organization (WHO). They share a strong, intimate strategy to evolve the country's healthcare services, organizational management, and global health development (Alomran, 2019; Al-Hanawi et al., 2019; Al-Kubaisi & Shahbal, 2021). The collaboration of those with the KSA results in the advancement of serving globalized healthcare (Yahia, 2020). Both entities work on the achievement of sustainable development goals. The collaborative services that WHO performs with the different ministries of KSA include the ministry of health (Alahdal et al., 2020), foreign affairs (Alsehaimi & Helal, 2021; Shahbal et al., 2022), king Salman humanitarian aid (Alshammari et al., 2020), relief center (Bajow et al., 2019), and Saudi developmental funds (Asmri et al., 2020). All these entities work with the WHO to advance the technology in their country and collaborates with the organizational development for the service of effective healthcare sector development (Tripathi et al., 2020).

Globalized advancement in the world results in a global village not only for the communication system but also for the health care services that communicated from one end of the world to the other (Ajami, 2020). The modernized and effective medical society of KSA formulate the proper agenda for the healthcare organizational development and service in the healthcare sector (Al-shahrani et al., 2020).

Most often Ministry of Health (MOH) provides a huge amount of funds to healthcare organizations for better treatment and technological advancement (Sajjad & Qureshi, 2020). Whereas some of the volunteer health prognostic agencies also upon constructive organizational development (AlAteeq et al., 2019; Shahbal et al., 2022).

The present study aimed to study the effectiveness of technology on organizational development and services in the healthcare sector in the kingdom of Saudi Arabia. The basic Perspective is to address the different type of Technologies and their effectiveness in organizational development in healthcare settings.

Methodology

The present study operationalized the systematic literature review and it is based on secondary data resources, which include published. literature from the emerald insight database, google scholar, Taylor and Francis, Springer Link, Scopus, Science Direct, and PubMed. The relevant literature on the effectiveness of technology on organizational development and services in the health sector in the kingdom of Saudi Arabia from 2019 – 2022 using the key phrase "effectiveness of technology", "organizational development", "services in the health sector" and "Saudi Arabia". The inclusion and exclusion criteria of the research are demonstrated in the table and Prisma diagram. (Figure 1)

Table 1.

Inclusion and Exclusion Criteria

Sr	Criteria	Discussion
1.	The paper was published in a scientific peer-reviewed journal	Inclusion
2.	The paper should be written in the English language	Inclusion
3.	When the predefined keywords exist as a whole or at least in the title or abstract section of the paper.	Inclusion
4.	Studies that present pieces of evidence on "effectiveness of technology," "organizational development," "services in the health sector" and "Saudi Arabia."	Inclusion
5.	Papers that are duplicated within the search documents	Exclusion
6.	Papers that are not accessible, review papers and meta-data	Exclusion
7.	Papers that are not primary/original research	Exclusion
8.	Papers that got published before January – September 2022	Exclusion
9.	The gray literature	Exclusion

Results

Evaluation of the research indicates that the study from the database indicates syntax, number of articles, and its percentage existence retaining to a particular topic of "effectiveness of technology," "organizational development," "services in the health sector" and "Saudi Arabia" indicated by Table 2 using search items

Search 1 = "effectiveness of technology", "services in the health sector"

Search 2 = "organizational development", "services in the health sector"

Table 2.

Raw data search

Database	Searching string and searching terms		No literature content	%
Emerald insight	Main searching terms using document, title, abstract, and keywords & Secondary searching terms	Search 1	123	0.92
		Search 2	214	
Google Scholar		Search 1	17,000	84.1
		Search 2	13,800	
Taylor &Francis		Search 1	45	.48
		Search 2	56	
Research Gate		Search 1	116	.71
		Search 2	176	
Springer Link		Search 1	134	1.78
		Search 2	245	

Science Direct	Search 1	453	2.89
	Search 2	349	
Scopus	Search 1	1678	8.8
	Search 2	1567	
PubMed	Search 1	348	1.75
	Search 2	293	

More articles have been extracted from google scholar, Taylor and Francis, Springer Link, Scopus, Science Direct, and PubMed. Findings indicate that there is a vast amount of primary research is conducted on the effectiveness of technology on organizational development and services in the healthcare sector. Scopus was assessed to checked for the ranking of the journals.

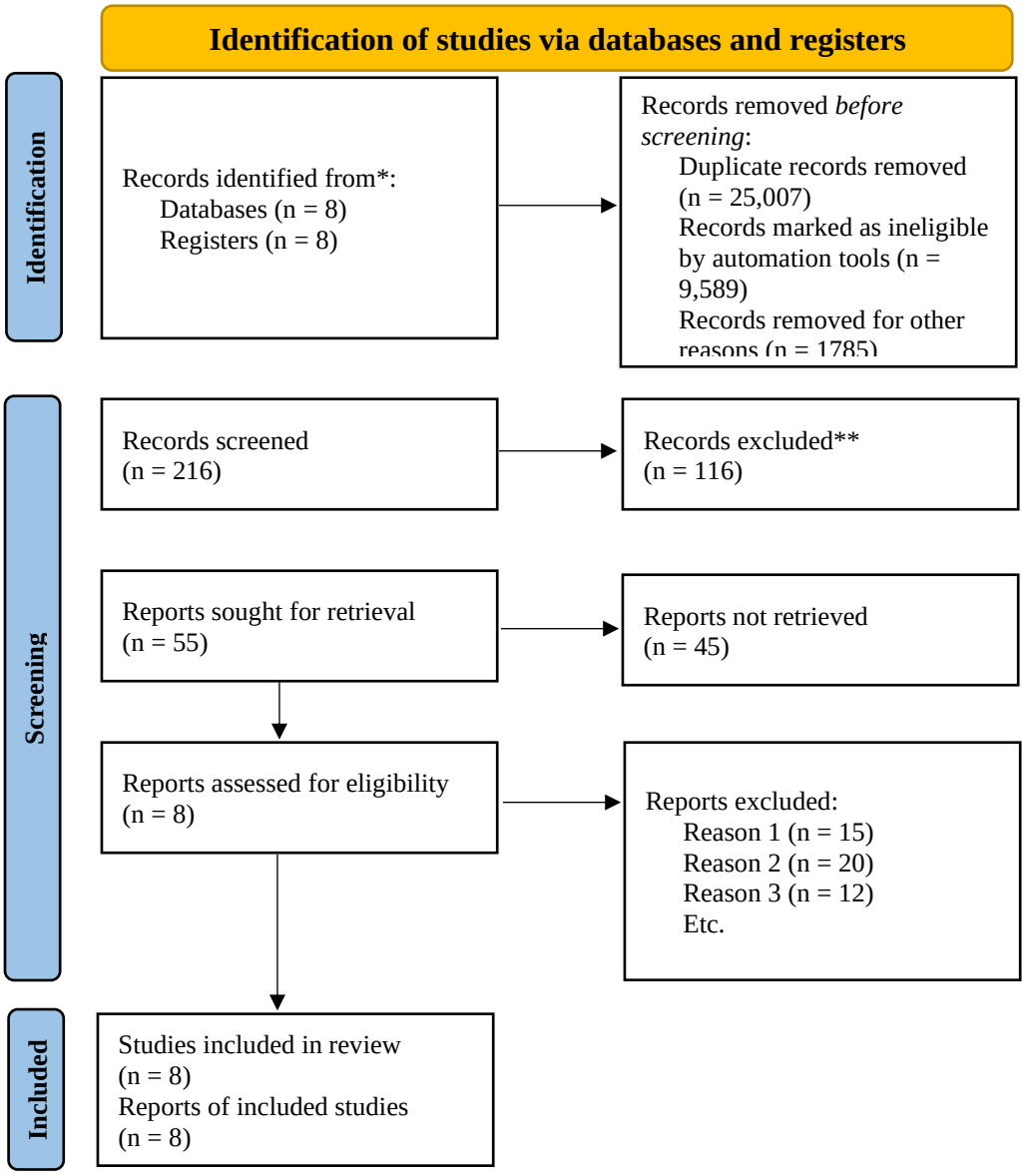

Figure 2 Prisma Diagram

Studies indicated the effectiveness of technology on organizational development and service in the healthcare sector (Usak et al., 2020). Results indicated that a higher amount of effectiveness of new technology in the acute care departments have greater impact on the service in the healthcare sector (Noor et al., 2020). This is because technology has advanced healthcare settings through intervention services (Al-Hanawi et al., 2020). Most often it is observed that previously that treatment required effective invasive strategies such as the use of carbonic acid. Now, all those processes do not require invasive and carcinogenic carbonic acid surgical procedures (De Celis et al., 2009; Sawalha et al., 2021). All these services have been done through the effectiveness of technology in the healthcare service sector (Alharbi et al., 2021). Thus, it should be noted that the effectiveness of technology has a predicting role based on both of those variables in the previous literature (Aljarboa et al., 2019).

Research in the Kingdom of Saudi Arabia has addressed a similar perspective identifying the construct related to the effectiveness of technology on organizational development and services in the healthcare sector. KSA has introduced several technologies that are congruent with the international standards of healthcare (Alluhidan et al., 2020). Most often, it is witnessed that the international hospitals in the KSA are highly equipped and less with effective technology in their setting (El-Saed et al., 2020). Moreover, in the community departments and healthcare primary sector technology has also produced effective healthcare interventions for public care (Asaad et al., 2019). It is noted that healthcare organization usually ponders upon the services in the healthcare sector, these services depend upon the equipped healthcare fecality, instrumentation, and standardized environment (Albejaidi, & Nair, 2019). Healthcare transformation 2030 is denoted as the most effective and appropriate healthcare treatment for the future. It will provide e-healthcare services, computerized, digitalized, and electronic means of healthcare interventions (Rahman & Al-Borie, 2021). Consequently, it should be noted that the present condition of the healthcare sector in the KSA demonstrated the most effective and appropriate interventions to deal with organizational development and services in the healthcare sector (Alshammari & Wahi, 2019).

Initiatives

In KSA, the healthcare initiative has introduced a massive amount of investment approximately 65 billion to develop the country's infrastructure regarding the healthcare setting (Alotaib et al., 2022). Its most important aim is to increase productivity in the private sector which will contribute around 40 - 65% by 2030. During this period around 290 hospitals and 2,300 primary healthcare centers will be introduced in the different regions of KSA based on the necessity and essentialness (Alotaibi et al., 2021). Effective technologies in the healthcare setting through this organizational development is being witnessed by healthcare prognosis development (Alshahrani et al., 2019). More often it is also associated with the identification of several health concerns. These health concerns are pertaining to services of the healthcare sector (Mohamed et al., 2019). Several advancements in technology have been introduced in the oncology department stating that healthcare settings of the oncology department advance to several extents. Through the modification of invasive treatment into non-invasive Technology based healthcare intervention. Through this development healthcare services in clinical settings improve twofold in the present and will increase sixfold in the future (Amran et al., 2020). Moreover, each year, the ministry of health and other public health organizations formulate public healthcare awareness services for inhabitants free of cost, less expensive, and healthcare treatment related services country (Rahman & Qattan, 2021).

Technology revolution in KSA

The healthcare sector is the most expanding sector in the KSA because of the growth of the population and inlet migrants from various countries (Gailey et al., 2021). By 2030, KSA will require a tremendous amount of healthcare hospitals, clinics, and technological innovation (Alsufyani et al., 2020). That enforces the government as well as non-government organizations to enforce the new innovative technology establishment in the country (Alshammari & Wahi, 2019). This also ponders upon the perspective that the services of healthcare are affected by every technology

through advancement in the operational form (Mohammed et al., 2021). That not only affect the healthcare sector in patient care, but also new training and research purposes in healthcare settings (Almaghaslah & Alsayari, 2021).

Advancement leads to the patient's hospital stay in a minimal period. This is because of the improvement in diagnostic technologies and patient treatment, technological interventions evolve the organizational development through the effective utilization of new and advanced technologies. It should be noted that the treatment will become more advanced, digitized, and highly equipped by 2030 (Nair, 2019; Oraibi et al., 2022).

The digitization of healthcare

Outbreak of pandemic all over, the world influences the new means of treatment. the KSA health ministry and private healthcare organizations work on a new way of adapting various health preservation strategies that were unlikeable a few years ago (Salem & Nor, 2020). The spontaneous and remarkable increase of patients during the pandemic has evaluated the uncertainty of life and healthcare treatments. This is because such damage does not appear in the past with such a potential rate of mortality (Fahmy et al., 2020). In response to this governmental of Saudi Arabia has developed a unified vision of e-health across the KSA (Li & Liu, 2020). Healthcare efforts in KSA have introduced effective, streamlined, appropriate, and high-quality of technology to in their health care sector (AlBar & Hoque, 2019).

Digitalization of healthcare services is the heart of the transformation of care. Innovation in the digitization and utilization of new and advanced technologies such as the cloud make the new globalized connection of care (Almazroi et al., 2022). It not only increases the health care services but also increases the potential rate of patient recovery no matter the location and the care delivery place (Alsahafi et al., 2022).

Approximately 150 health tech startups are fully operational in the KSA (Rahman & Al-Borie, 2021). Cura (Figure 2) is one of the locally developed applications that allowed the inhabitant of KSA to remote consultancy based on consultant videos and audio calls at spontaneous hours. Moreover, these digitized setups introduced highly advanced technologies into society to keep up with the globalized world (Hassounah et al., 2020).

Figure. 2

Digitalization in the hospital setting is also affected by the mediation of supply chain management that is potential threat to the organizational development. In Saudi Arabia, this management system has evolved through the cloud ERP technique that facilitates the industries, supply, and consumers in various disciplines of conducting the medication unavailability. Cloud system has evolved the check and balance on inventory control, coordination, product lifecycle management, demand management, vertically integrated partnership, and product lifecycle management. (Alsahafi et al., 2022). The cycle of healthcare management in emergency or normal situation could be assumed through the Figure 3.

Figure.3

Healthcare management in various disciplines has introduced several healthcare geometrics for oncology medicine improvement, orthopedic instrumentation, and dentistry equipment management (Amran et al., 2020). All the department

of healthcare premises operationalize in the KSA use several advanced technologies based on health conservation. Through technology-based cloud interventions (Alshammari & Wahi, 2019).

Healthcare scenarios operationalizing the social and community services for the KSA provide already developed programs under the MoH (Almaghaslah & Alsayari, 2021). Moreover, precautionary health measurements and public health services are based on civil services and social construction management. All the services are observed in the healthcare settings not only in the critical care unit but also in child health development and maternity care (Moafa et al., 2020; Khan et al., 2020; Al-Kubaisi, Shahbal & Khan, 2022). Crisis management such as covid-19 pandemic was also an impressive explanation of the MOH's respective duties and emergency precautionary measurement. After all these rehabilitation services have been provided across the kingdom to the effective medication and validated procedure of technological intervention of care (Sajjad & Qureshi, 2020).

Legal industry and technology advancement:

With the advancement of the cloud healthcare services based on advanced and effective organization development (Alassafi et al., 2021). Ministry of Health has introduced certain legal landscapes that are mandatory for health legislation and laws that prohibit and does not allow healthcare services to receive the data of the consumer (Justinia, 2022). All these advancements in the healthcare setting developed a new era in KSA. Therefore, proper monitoring by the ministry of health on the technology has led to the effectiveness of technology in every individual life in Saudi Arabia (Algumzi, 2022).

Organizational development:

In KSA, 80% of the healthcare organizational development fund are received from the MOH. The remaining 20% is from non-government organizations and civil services (Moafa et al., 2020). Though 11 agencies of government along with non-government organizations participate in providing the best healthcare (Almalki et al., 2021). Health delivery services and programs are based on the already defined population and set of criteria for the area. Whereas the ministry of health is a primary health governance providing effective healthcare establishment to be 65% of the healthcare services. (Alhodaib & Alanzi, 2021).

Organizational development under the ministry of health works for primary healthcare organizations (Alomari et al., 2021). They all work in proper administrative channels and effective intervention-formulated programs (Al-Omar et al., 2020). Specialist hospitals including the King Faisal specialist and king Fahad specialist hospital provide highly specialized healthcare services along with the Red Crescent society of KSA (Chowdhury et al., 2021). This is a remarkable explanation of organizational development. Moreover, Yanbu and the Royal Commission for Jubail provide effective healthcare services to the patients (Albejaidi & Nair, 2019).

KSA is divided into six regions. These are specialized for healthcare programs and agenda management (Almaghaslah & Alsayari, 2021). MOH has developed surgeon responsibilities in every region to facilitate their inhabitants with effective and highly specialized healthcare services (ElGibreen, 2020). Organizational development in the healthcare setting focuses on the remarkable responsibilities provided by the MOH to the region and state commission (Memish et al., 2021). Through this, highly specialized and effective healthcare scenarios have been used in the communities (Khan et al., 2020; Hassan et al., 2021).

MOH primary healthcare center

"Prevention is better than cure" is the motto of MOH (Chowdhury et al., 2021). According to their healthcare conservation and hacks, the predictability of successive development plans has come to the objectivity and strength through the primary healthcare services corporation allies in the community healthcare centers (Al Anazi et al., 2020).

The policies of the ministry of health aim to provide the best and healthcare services through primary healthcare establishment in both urban and rural areas of KSA (Alharbi et al., 2021). MOH has introduced facilitation that ponders upon the territory level care and facilitates the various organization via productive approaches. The family healthcare system has been introduced into the KSA based on the proper file management and family diagram (Alsulamy et al., 2022).

Services in the healthcare sectors

KSA must use a wide variety of healthcare organizations of services. That not only portrayed productive healthcare management but also demonstrated the beneficial, strengthen, and effective strategies. This reduces the potential decline of health services and establishment national transformational program (NTP) in KSA have introduced a wide range of goals for health conservation and service development at healthcare centers. That includes the privatization of government services, works under digitalization, and digital recording (Al-Hanawi et al., 2019).

Healthcare policies

The Ministry of Health of Saudi Arabia has introduced the innovative ideas to invest, monitor, empower and produce effective private sectors to develop healthcare services (Alharbi, 2019). Moreover, Gulf Cooperative Council has also introduced numerous services to the health care settings. After the crisis of the pandemic, the worldwide introduction of the latest technologies and services in healthcare settings has been revived and treatments are well-equipped (Noor, 2019).

Other intuitive

The healthcare system in Saudi Arabia is composed of two distinct identities Saudi residents and other is for foreign non-Saudi inhabitants (Almalki et al., 2019). Saudi citizens use government-funded hospitals and primary health care centers. Whereas the foreign Saudi population compulsory employer board health insurance CEBHI and The Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) have introduced the technological innovation to develop the organizational development. The public hospital via business centers usually in a form of out-of-pocket provide private healthcare services and emergency to outpatient services to enhance the technology for appropriate care (Alharbi et al., 2022; Hazazi & Wilson, 2022). Whereas in the same context number of agencies are working for human rights and dignity. They provide free of cost treatment to the non-Saudi (Asmri et al., 2020).

Discussion

Previous literature provides an ample amount of information about the collaborative working of the federal resource ministry, and the ministry of overseas (Al Rawashdeh & Campbell, 2022). All these are working on a cooperative health structure to introduce an effective healthcare setting in the KSA (Krane, 2019). The crucial role of all the healthcare organizations formulates an entangled mechanism for healthcare conservation and protection (Ali Manian et al., 2022). Moreover, the ministry of information and technology also takes part in security management and public health engineering services (Alyami et al., 2020). the government of Saudi Arabia introduced have introduced a variety of changes to the health sector (Rahman & Alsharqi, 2019). Moreover, Vision 2030 is known to be an impressive and accurate system for future health conservation (Balabel & Alwetaishi, 2021). The ministry of health along with the ministry of health resources put a high impression on the identification of various biological issues that may be revealed in the future (Alghamdi et al., 2021).

Therefore, technology is an effective strategy for developing organizations and services in the healthcare setting (AlBar & Hoque et al., 2019). But certain limitations need to be addressed before leaving for the higher functionality level (Alsaati et al., 2020). This includes the effective monitoring of the database of healthcare services, suppliers, and

managing the appropriate health promotion services (Sridhar & Rabbani, 2021). To deal with a large country excessive amount of fundraising is required which is not only the responsibility of MOH but also the private, and non-governmental organizations (Alqanatish et al., 2022). Consequently, the fundamental procedure for fundraising is based on the privatization of the government-based healthcare organization and providing more effective strategies for enhancement to the development of health services (Haque & Khan, 2019: AlSawahli, 2019).

Conclusion

The current study attempted to explain the recent initiatives regarding the effectiveness of technology on organizational development and services in the healthcare sector in KSA that managed to evolve their healthcare settings based on the new and advanced technologies. Most of the initiatives that has been studied in this present literature was based on the ministry of health, ministry of human resources. and climate-funded programs. Moreover, country-based healthcare management mobile apps have been introduced for the sake of E-health services. The suggestion is based on the government as well as non-governmental organizations to take part in the productive, proactive, and positive outlook initiative programs to effective technology in KSA.

Technology effectiveness is related to the personal preceptor, organizational acceptance and decision making for development purpose in health sector. Utilization of different perspective of technology results into management of care and health sector development in KSA.

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