

Proposal of:

The impact of artificial intelligence on the health sector in Kingdom of Saudi

Arabia: Application on Mouwasat Hospital in Khobar city

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1.1 Introduction:

Artificial intelligence (hence referred to as "AI") provides indisputable prospects for economic growth, societal advancement, and research by utilizing computers and machines to do jobs traditionally associated with humans. While a number of researchers have sought to define AI, John McCarthy, who invented the word in 1956, describes it as "the science and engineering of making intelligent machines, especially intelligent computer programs" (Chikhaoui et al, 2022, p5). It is related to the same aim of utilizing computers to study human intellect; however, AI does not have to constrain itself to biologically observable ways. In recent years, the focus of AI has switched from abstract principles to the implementation of data processing and inference. This change was made feasible by the synergistic interaction between AI and big data. When big data is fed into an AI machine, it learns and enhances its decision-making abilities. AI technologies create new potential in a variety of industries, including energy, the environment, education, and healthcare. The focus of this study, however, is on the impact of this change on the medical world through transformative digital advancements in healthcare, such as AI systems that scan medical records and information to identify risks or complications expected in a medical procedure and offer preventative care. AI's effectiveness in healthcare is becoming more apparent. It has become a vital tool for doctors, physicians, and other healthcare professionals (Althubaiti et al, 2024, p22). AI can be used to diagnose, develop drugs, personalize treatments, and modify genes. Furthermore, machine learning can help clinicians examine patients utilizing digitalized diagnostic information, such as diagnosing lung, breast, skin cancer, or any other type of cancer condition. It has also helped to assess the risk of sudden cardiac death and other heart illnesses using electrocardiograms, cardiac MRI images, and medical image categorization. AI has detected indicators of diabetic retinopathy in ocular scans. Saudi Arabia's economy is diversifying as it becomes a worldwide

technological powerhouse. It has launched the most ambitious and far-reaching development plan in contemporary history, driven by the 2030 vision. The vision intends to reduce the country's dependency on oil while diversifying the economy. The country adopted an AI strategy as part of its 2030 goal and is investing billions of dollars in AI initiatives. Without a doubt, AI will significantly enhance healthcare in the country, but it will also raise numerous legal and ethical concerns, such as data transfer accountability and intellectual property rights. Few research has looked into the usage of AI in the Saudi healthcare sector. For example, the authors published a study on staff experiences and sentiments around the usage of AI technologies in healthcare organizations. However, the Saudi government is working to address these issues and make the healthcare system more efficient and effective. The National Transformation Program 2020 is one of the primary programs, with the goal of improving healthcare quality, increasing access to care, and lowering healthcare expenditures (Al Kuwaiti et al, 2023, p23). The program comprises numerous initiatives, such as increasing the number of healthcare providers, improving healthcare infrastructure, and integrating innovative healthcare technologies. Furthermore, the Saudi government's Vision 2030 plan, released in 2016, includes a comprehensive strategy for overhauling the healthcare sector. The strategy intends to make the healthcare system more patient-centered, creative, and accessible to all citizens. It also highlights the significance of preventive healthcare and health education. Saudi Arabia's healthcare system faces various obstacles, and the government is taking proactive steps to address them. One of the important efforts that can play a critical part in altering the healthcare system is the implementation of artificial intelligence (AI) technologies, which have the potential to change healthcare by increasing efficiency, lowering costs, and improving care quality. In Saudi Arabia, AI technologies can be applied in a variety of healthcare settings, including diagnosis, treatment, and patient care. Medical diagnosis is one area

where AI technologies have the potential to make a substantial effect. AI algorithms can evaluate massive volumes of medical data and assist healthcare providers in making accurate and timely diagnoses. This reduces the burden on healthcare providers and improves accuracy. Artificial intelligence technologies can also be utilized to create individualized treatment regimens for patients. By evaluating patient data, including genetic information, AI systems can determine the best therapy options for specific patients. This can improve patient outcomes while lowering the chance of adverse events. In addition to diagnosis and treatment, AI technologies can enhance patient care. For example, AI-powered chatbots can assist patients in scheduling appointments, accessing medical information, and receiving individualized health advice (Saeed et al, 2023). This can lessen the workload of healthcare providers while increasing patient satisfaction. However, there are several hurdles to implementing AI solutions in healthcare. One of the main issues is the requirement for high-quality data. AI algorithms require massive volumes of data to train properly, and data quality is important to algorithm accuracy. Another challenge is creating regulations and guidelines for the usage of AI systems in healthcare. The government must ensure that AI solutions are used responsibly and transparently, and that patient privacy is respected. Finally, AI technologies have the potential to alter Saudi Arabia's healthcare system and improve patient outcomes. However, implementing AI solutions needs meticulous planning, investment in technology and infrastructure, and the creation of regulations and norms. The authors wanted to assess radiologists' attitudes on the use of AI in Saudi Arabia (Serbaya et al, 2024, p22).

1.2 Problem Statement:

This paper explores how AI is transforming healthcare in in Kingdom of Saudi Arabia, especially in Mouwasat Hospital and offers methods for harnessing these technologies to accomplish Vision 2030's human capital development objectives. The study has practical implications for healthcare

practitioners and policymakers seeking to improve care quality through effective AI integration. This study adds to the scientific understanding of AI's impact on the digital revolution of healthcare in Saudi Arabia.

1.3 Research questions

The current research tries to answer the following questions:

- 1) What is the level of application of artificial intelligence in the health sector in Mouwasat Hospital in Kingdom of Saudi Arabia?
- 2) What are the challenges facing the application of artificial intelligence in in Mouwasat Hospital in Kingdom of Saudi Arabia?
- 3) To what extent does artificial intelligence affect the health sector in Mouwasat Hospital in Kingdom of Saudi Arabia?
- 4) What are the recommendations and proposals in light of the results of the study that can enhance the impact of artificial intelligence on the health sector in the Kingdom of Saudi Arabia and in Mouwasat Hospital?

1.4 Research objective:

There are several objectives of the study:

- 1) Determine the level of application of artificial intelligence in the health sector in Mouwasat Hospital in Kingdom of Saudi Arabia.
- 2) Identify the challenges facing the application of artificial intelligence in in Mouwasat Hospital in Kingdom of Saudi Arabia.
- 3) Measure the impact of artificial intelligence on the health sector in in Mouwasat Hospital in Kingdom of Saudi Arabia

- 4) Providing a set of recommendations and proposals in light of the results of the study that can enhance the impact of artificial intelligence on the health sector in the Kingdom of Saudi Arabia and in Mouwasat Hospital.

1.6 Research Variables and framework:

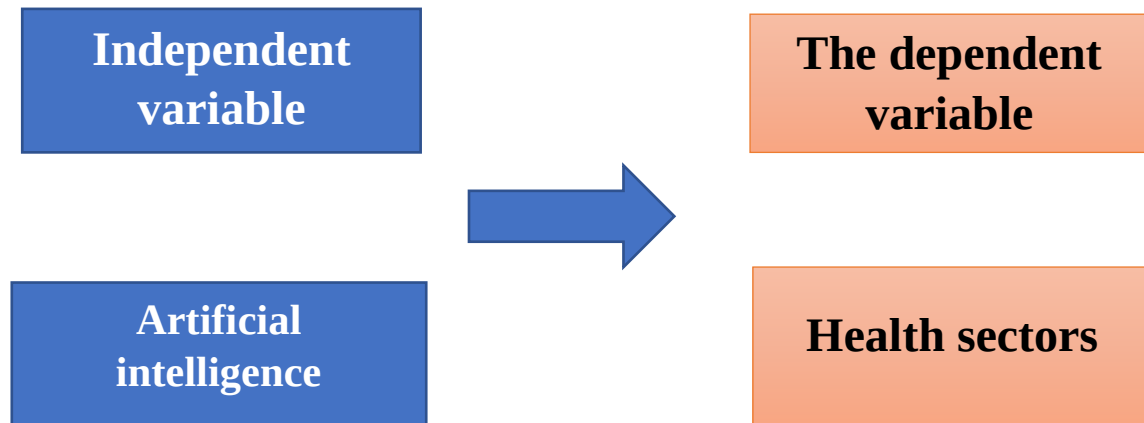


Figure (1): Research Model

From the previous figure, it is clear to see the research variables can be mentioned as the following:

- **Independent variable:** The independent variable is (artificial intelligence).
- **Dependent variable:** The dependent variable is (the health sectors).

1.7 Research Hypothesis:

H1: There is no statistically significant impact of artificial intelligence on the health sector in Mouwasat Hospital in Kingdom of Saudi Arabia at the level of (0.05).

1.8 Research concepts:

I) Artificial intelligence

Define by (Arora et al., 2020) Artificial intelligence is a branch of computer science and one of the most important elements of the technology industry in the current era. It is a term consisting of two words (intelligence and artificial). Intelligence refers to the ability to understand and perceive new concepts, while artificial intelligence is related to things that resulted from elements Certain, in contrast to natural things that appeared as a result of human income

1.9 Research Limits:

- **Topic boundaries:** The impact of artificial intelligence on the health sector in the Kingdom of Saudi Arabia.
- **Human limitations:** The current research will be applied on doctors and employees in Mouwasat Hospital in Kingdom of Saudi Arabia in the Kingdom of Saudi Arabia.
- **Spatial limitations:** The current research will be applied to the health sector in the Kingdom of Saudi Arabia, especially in Mouwasat Hospital in Khobar city.
- **Time limits:** The research will be carried out in 2024.

1.10 Literature Review:

- Study Chikhaoui et al, 2022, titled: **Artificial intelligence applications in healthcare sector: ethical and legal challenges**

The study aimed to present the main healthcare applications based on artificial intelligence; Exploring the use of artificial intelligence in the Saudi healthcare sector; Addressing ethical and legal challenges, as well as policy issues in Saudi healthcare; Also studying the benefits of these AI-based applications and the acceptance of professionals to use AI in daily practice; Introducing

the new Personal Data Protection Law (PDPL) in Saudi Arabia; Discussing the importance of artificial intelligence for the future of Saudi health care, a survey method was used, and the study showed that artificial intelligence should not only lead to better health, but it should also lead to saving manpower and simplifying health care operations. Participants agreed that artificial intelligence helps reflect human intellectual competencies and goes beyond their limits.

- **Study Muafa & Al-Obadi, 2024, titled: The Impact of Artificial Intelligence Applications on the Digital Transformation of Healthcare Delivery in Riyadh, Saudi Arabia (Opportunities and Challenges in Alignment with Vision 2030).**

The study aimed to evaluate the current applications of artificial intelligence in the healthcare sector in the city of Riyadh and their impact on digital transformation, identify the opportunities available through expanding the adoption of artificial intelligence to improve healthcare services in line with Vision 2030, and study the challenges facing further integration of artificial intelligence technologies into the system. Health care in Riyadh. The study used a survey method, and the sample size was (300) individuals. The study concluded that artificial intelligence has the ability to bring about a major transformation in the health care sector in Riyadh, which contributes to achieving Vision 2030. The study recommended the necessity of effective application of intelligence. Artificial technology in the health system, emphasizing the importance of innovation and technical integration of the health sector and the future of health care in the Kingdom.

- **Study Al-Jehani et al, 2021, titled: Development of artificial intelligence techniques in Saudi Arabia: the impact on COVID-19 pandemic.**

The study aimed to identify advanced artificial intelligence technologies in the Kingdom of Saudi Arabia, which are divided into two types. The first type is the NEOM project, a planned city that

will integrate smart city technologies in the northwest of the Kingdom, located in the city of Tabuk, Saudi Arabia. The second type is robots, which are machines that can perform a complex series of actions automatically, especially those that can be programmed by a computer such as the Sophia robot, the Sarah chatbot robot, the medical robot, etc. The paper also described global artificial intelligence efforts to confront the Covid pandemic. -19. In addition, the study concluded that the speed with which artificial intelligence is implemented in various fields will lead to a revolution that will be consistent with the aspirations of Saudi Arabia's Vision 2030. Artificial intelligence technology occupies most positions in workplaces, factories, and even hospitals in the Kingdom of Saudi Arabia. It will work to increase productivity, enhance decision-making processes in all sectors, provide the Saudi people with more innovative services, and open new horizons for promoting entrepreneurship. Digital transformation and artificial intelligence are critical drivers of these large-scale reforms, and the study also showed that educational reform is the most important step in these initiatives, starting with introducing digital skills in K-12 education to meet changing demands in the workplace, and the Ministry of Education is working on These schools and universities meet the needs of the future and develop expertise in the field of education. Areas of artificial intelligence, data science, data security, etc. This is important to prepare for the future jobs of the next generation. Healthcare systems in the Kingdom of Saudi Arabia have recently begun to rely on artificial intelligence applications, because they can store and process massive patient data, which leads to improving the quality of medical care, improving the decision-making process, and reducing costs.

- **Study Abdullah & Fakieh, 2020, titled: Health care employees’ perceptions of the use of artificial intelligence applications: survey study**

The study aimed to explore the perceptions and attitudes of health care employees towards the application of artificial intelligence technologies in health care institutions in the Kingdom of Saudi Arabia. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The sample size was (250), and the study concluded that 3.11 of 4 Participants feared that AI would replace employees and had a general lack of knowledge regarding AI. In addition, most participants were not aware of the most common advantages and challenges of AI applications in the health sector, indicating a need for training. The results also showed that technicians are most affected by AI applications due to the nature of their jobs that do not require much direct human interaction. The study also showed that the Saudi healthcare sector represents a useful market potential that should be attractive to researchers and developers of artificial intelligence solutions .

- **Study Albinsaad et al, 2022, titled: The Saudi Community View of the Use of Artificial Intelligence in Health Care**

The study aimed to evaluate society's views regarding the use of artificial intelligence in health care. The study used the descriptive analytical method, and the questionnaire was relied upon as a tool for this study. The study reached 771 individuals, 42.5% of whom had a positive view of the use of artificial intelligence in health care, and 31.8% have a neutral point of view, and 7.5% have a negative point of view. The only factor associated with positive opinion was regional differences ($P = 0.006$). Furthermore, participants who used medical apps or software ($P = 0.026$), and wearable devices ($P = 0.027$), felt more confident in using technology ($P < 0.001$), enjoyed using

technology ($P < 0.001$), and found that Easier to recognize. new hardware or software ($P < 0.001$), had more knowledge about AI ($P < 0.001$) and had more positive views regarding the use of AI in healthcare. Conclusions: The study found that most Saudis, especially those who were familiar with the use of technology, supported the use of artificial intelligence in healthcare, with a positive or neutral view. However, targeted campaigns in specific regions are also needed to educate the entire community about the potential benefits of AI.

- **Study Serbaya et al, 2024, titled: Knowledge, Attitude and Practice Toward Artificial Intelligence Among Healthcare Workers in Private Polyclinics in Jeddah, Saudi Arabia**

The study aimed to assess awareness, attitudes, and practices regarding artificial intelligence (AI) among healthcare workers in private clinics in Jeddah, Saudi Arabia. Methods: We conducted a cross-sectional study among health care workers in private clinics in Jeddah. The study used the descriptive analytical method. The questionnaire was relied upon as a tool for this study. The sample size was (361) individuals. The study reached approximately 62% of workers in healthcare field were female. The majority of healthcare workers (36%) were nurses, while 25% were doctors. The median awareness, attitude, and behavioral scores were 5/6 (IQR 3-6), 5/8 (IQR 4-7), and 0/3 (IQR 0), respectively. Nearly three-quarters (74%) of healthcare workers believe they understand the basic computational principles of AI. Only half of the participants were willing to use AI when making future medical decisions. We found that male healthcare workers had better knowledge scores regarding AI compared to female healthcare workers (beta = 0.555, 95%, p-value = 0.010), while for attitude scores, being a managerial staff compared to male Others had a negative impact. Attitude towards AI (beta = 0.049, 95%, p-value = 0.03), the study also showed that healthcare workers have an overall good awareness and optimistic attitude towards AI. Despite this, the

majority are concerned about the potential consequences of replacing their jobs with artificial intelligence in the future. There is an urgent need to educate and sensitize healthcare professionals regarding the potential impact of artificial intelligence on healthcare.

- **Study Wazgar et al, 2022, titled: The Use of Artificial Intelligence and Deep Learning in Medical Imaging: A Nationwide Survey of Trainees in Saudi Arabia**

The study aimed to identify the role of artificial intelligence in the health sector in the Kingdom of Saudi Arabia. The descriptive analytical approach was used, and the questionnaire was relied upon as a tool for this study. The sample size was (98) individuals, and the study concluded that the level of use was low. Few of them used it in routine practice (7%). The impact of AI on radiology workflow was positive across all steps of the radiology workflow (range, 3.64-3.97 out of 5). There was a positive impact on the radiology profession more frequently in technical and performance aspects (81%-85%) than in prestige and legal aspects (64%-71%). Ease of use and behavioral intention to use AI were associated with current professional activity, level of AI use, and perceived impact on the profession and on radiology workflow ($P < 0.05$). In short, AI is being used at a very low level in radiology. The perceived positive impact of AI on radiology workflow and the profession is associated with increased behavioral intention to use AI. Therefore, increasing awareness about the positive impact of AI can improve its adoption.

- **Study Nallamotheu & Cuthrell, 2023, titled: Artificial Intelligence in Health Sector: Current Status and Future Perspectives**

The study aimed to identify the role of artificial intelligence in the health sector, as the advanced fields of artificial intelligence (AI) and machine learning (ML) provide great potential for improving health care services. Many areas of clinical practice, scientific research, and healthcare

administration have incorporated AI/ML technologies, and the study finds that there are significant obstacles to widespread use of AI/ML in healthcare, including high installation and maintenance costs, and potentially harmful medical errors., lack of ethical frameworks for AI, unemployment, and low-capacity building within the human workforce. Several business initiatives have now been established in the field of AI/ML healthcare innovation. They offer everything from advanced diagnostics to vital monitoring in their products and services. In summary, AI/ML can be very important in addressing difficulties related to the complexity and data explosion in the healthcare system. AI/ML is a component of contemporary health care, and its further reliance depends on comprehensive treatment of relevant issues.

- **Study Sabra et al, 2023, titled: Utilization of artificial intelligence in health care: Nurses' perspectives and attitudes**

The study aimed to evaluate the nurses' point of view and their attitudes towards benefiting from its Artificial intelligence in health care. The study used the descriptive analytical approach. The questionnaire was relied upon as a tool for this study. The sample size was (200) individuals. The study concluded that 92.0% of the participants had a moderate perception of the use of artificial intelligence in health care, and 64% were They also have a positive attitude towards the use of artificial intelligence in healthcare. There was a statistically significant difference between nurses' perception toward AI, gender, and marital status. Likewise, there were statistically significant differences between the nurses' attitudes towards. Artificial intelligence, age, qualifications, marital status, and years of experience. Conclusion: No, the majority of nurses had a moderate perception and positive attitude towards the use of AI in Health care, the study recommended that health policy makers should develop strategies to increase Institutions' readiness to apply artificial intelligence and increase nurses' capabilities Appropriate use of artificial intelligence through good

training. Doctors, nurses and patients must adopt the use of artificial intelligence in the field of work.

- **study Imam et al., 2023, entitled Employing artificial intelligence applications in health awareness among sports leaders in light of national health standards.**

The study aimed to identify the reality of employing artificial intelligence applications in health awareness among sports leaders in light of the national health standards. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The sample size reached (250) individuals, and the study reached a conclusion that sports leaders use Applications of artificial intelligence in health awareness to a moderate degree. . The majority of respondents believe that using artificial intelligence techniques saves them time and effort. The use of artificial intelligence techniques - chatbot applications in sports health awareness is a modern and effective means, in which there is a comprehensive explanation of various topics in the sports health field. Users follow the applications' instructions regarding proper nutrition and sleeping habits. The sample members do not have sufficient knowledge of the uses of artificial intelligence applications. The sample members do not rely on smart chat applications (chatbot) to obtain general health and sports information or to obtain answers to my frequent questions about sports health. One of the most important recommendations was to benefit from the results of the study and the questionnaire form. In implementing the proposals presented by Al-Durra to employ artificial intelligence applications in health awareness in educational institutions and sports.

- **Al-Khalayla, (2021). Titled The impact of artificial intelligence applications on the quality of health care: an applied study on Jordanian Ministry of Health hospitals.**

This study aimed to identify the applications of artificial intelligence on the quality of health care in hospitals of the Jordanian Ministry of Health. The study used the descriptive analytical approach. The questionnaire was relied upon as a tool for this study. The sample size reached (239) individuals. The study concluded that the general arithmetic mediation level of applications Artificial intelligence was rated average, and the general arithmetic average level of quality of health care in Jordanian Ministry of Health hospitals was rated average. There was also a statistically significant effect at the level of significance (as 0.05) Dimensions Applications of artificial intelligence on quality Health care in Jordanian Ministry of Health hospitals. The study recommended the necessity of conducting continuous training programs to develop and develop the skills of workers in the health sector on using artificial intelligence applications, and intensifying introductory and awareness courses on the importance of using artificial intelligence applications in providing health care services, especially in government sector hospitals, due to the increase in patients, in addition to working to survey opinions. Visitors after providing the health service to them. Their degree of satisfaction with the quality of service, with the need for Ministry of Health hospitals to adhere to the speed and accuracy of providing health services on time, and to pay more attention to the cleanliness of health facilities inside hospitals.

- **study by Al-Dhafiri et al, 2022, entitled the role of using artificial intelligence technologies and their impact on the quality of health services and their outcomes in Hafr Al-Batin Governorate.**

The study aimed to identify the role of the use of artificial intelligence and its impact on the quality of health services in government medical centers in Hafar Al-Batin Governorate. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The sample size reached (592) individuals, and the study concluded that there is a positive relationship between the role of artificial intelligence and the performance and behavior of employees within the health institution, in addition to the existence of a strong relationship between smart programs and artificial intelligence techniques and the efficient and effective work of employees, and the contribution of artificial intelligence to solving many problems. The results also indicated that there is a discrepancy between the training and development process and the use of available technologies, with the presence There is a positive relationship between the uses of artificial intelligence and the quality of health services, and the results indicated the presence of administrative deficiencies represented in some departments, especially in the vocational training process. The study presented a number of recommendations, including expanding the field of vocational training and working to spread the culture of technology and artificial intelligence further to motivate employees to professionally develop their performance.

- **Study Lau, (2019). Titled Artificial intelligence in health: new opportunities, challenges, and practical implications.**

The study aimed to summarize the latest developments during 2018 in the field of consumer health informatics and education, with a particular focus on the special theme of the 2019 International

Medical Informatics Association (IMIA) Yearbook: “Artificial Intelligence in Health: New Opportunities, Challenges and Implications.” In the process, the study used a descriptive approach. The study found that only a small number of 2018 papers on artificial intelligence (AI) research for patients and consumers found any studies on AI applications specifically designed for patients or consumers, nor were there any studies Eliciting Patient and Consumer Input on AI Currently, the most common use of AI for patients and consumers lies in secondary analysis of social media data (eg, online discussion forums. In particular, the top three papers shared a common methodology for using algorithms. Data-driven e.g., text mining, topic modeling, latent Dirichlet personalization modeling), combined with vision-driven methods (e.g. visualization, qualitative analysis, manual review). To uncover patients' and consumers' experiences regarding health and illness in online communities.

- **study Elnaggar et al, (2023). Titled Assessment of the perception and worries of Saudi healthcare providers about the application of artificial intelligence in Saudi health facilities**

The study aimed to evaluate the perceptions and concerns of Saudi health care providers about the application of artificial intelligence in Saudi health care facilities. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The sample size was (1026) individuals, and the study concluded that

More than half (55.2%) of the participants have good knowledge of artificial intelligence, and (48.1%) of them are familiar with the application of artificial intelligence in their specialty. A good percentage of participants (57.9%) knew at least one term about the difference between machine learning and deep learning. More than half of participants (69.9%) indicated that they had at some point used a speech recognition or transcription application in their work. A large portion (73.3%)

of healthcare providers believe that AI will replace them in their work. The vast majority (84.9%) of participants agreed that collaboration between medical schools and colleges of engineering and computer science could be a game-changer and provide a path to integrating AI into medical curricula. The mean perception of AI in this study was 37.6 (SD = 8.41; range 0–241). Age, health level, health profession, and work experience all significantly influenced the positive perception score ($P = 0.021$; $P = 0.031$; $P = 0.041$; $P = 0.026$). However, there was no significant association between gender, nationality, and Saudi regions with an average positive perception score.

- **study Abdullah, & Fakieh, 2020. entitled Health care employees’ perceptions of the use of artificial intelligence applications: survey study.**

The study aimed to explore the perceptions and attitudes of health care employees towards the application of artificial intelligence technologies in health care institutions in the Kingdom of Saudi Arabia. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The sample size was (250) individuals, and it was concluded that 3.11 of 4 Participants feared that AI would replace employees and had a general lack of knowledge regarding AI. In addition, most participants were not aware of the most common benefits and challenges of AI applications in the health sector, suggesting a need for training. The results also showed that technicians are the most affected by artificial intelligence applications due to the nature of their jobs that do not require a lot of direct human interaction. The study showed that the Saudi healthcare sector represents a useful market potential that should be attractive to researchers and developers of artificial intelligence solutions.

- **Study Esmaeel et al, 2024. entitled Perceptions of healthcare providers on artificial intelligence integration into dermatology clinical practice; A cross-sectional study in the Kingdom of Saudi Arabia.**

The study aimed to understand the perceptions of health care providers in the field of dermatology in the Kingdom of Saudi Arabia about the use of artificial intelligence and to know their attitudes and expectations towards applications of artificial intelligence in the field of dermatology. The study used the descriptive analytical approach, and the questionnaire was relied upon as a tool for this study. The study concluded that Dermatologists in Saudi Arabia have a positive attitude towards artificial intelligence in dermatology. In general, gender and nationality did not influence their attitudes toward AI (p value > 0.05). It is worth noting that the majority of participants (75.5%) were already familiar with AI, indicating a certain level of familiarity within the healthcare community. Furthermore, a large proportion of participants (72.9%) believed that AI technology could reduce errors in clinical practice and reduce differences in judgment between medical professionals.

- **study Syed et al, 2024. entitled Assessment of Saudi Public Perceptions and Opinions towards Artificial Intelligence in Health Care.**

The study aimed to evaluate the perceptions and opinions of the Saudi public regarding artificial intelligence in health care. The study used the descriptive analytical method. The questionnaire was relied upon as a tool for this study. The sample size was (830) individuals. The study concluded that 69.4% of the sample members were male, and 46% Some of them are over 41 years old. A total of 84.1% of participants know about AI, while 61.1% of them believe that AI is a tool that helps healthcare professionals, and 12.5% of them believe that AI may replace a doctor,

pharmacist or nurse in the healthcare system. Regarding the opinion about the widespread use of AI, 45.8% of the study population believe that healthcare professionals will be improved with the widespread use of AI. The mean AI perception score among males was 38.4 (SD = 6.1) and this was found to be higher than among females at 37.7 (SD = 5.3); However, no significant difference was observed ($p = 0.072$). Likewise, the average cognition score was higher among young people aged 20 to 25 years at 38.9 (SD = 6.1) compared to other age groups, but indicates no significant association between them ($P = 0.198$). The study showed that the Saudi public He had a positive opinion and perceptions about AI in healthcare. This suggests that health management recommendations should be made regarding how to successfully integrate and use medical AI while maintaining patient safety.

1.11 Methodology:

- Research method:

In the current study, the researcher uses the descriptive analytical method to collect the primary data necessary to conduct the research

- Research sample:

The aim of the current study is to produce reliable data. Hence, it applied on doctors and employees in Mouwasat Hospital in Kingdom of Saudi Arabia.

- Data collection:

Testing the impact of artificial intelligence on the health sector in the Kingdom of Saudi Arabia is the primary goal of the current study. Therefore, in order to collect the information and data necessary to achieve the study's objective, the current study used primary and secondary data sources, which can be explained as follows:

A) Secondary data:

Through the efforts of others these facts were found. Data for the current study were collected from reliable sources, current publications, and reference books.

b) Primary data:

The researcher personally collected data from a private community for the study for the first time. Relying on raw data often requires a significant investment of time and energy. These are demographics collected from their birth environments. In the current study, the researcher used the descriptive analytical method. In order to collect the primary data necessary for analyzing artificial intelligence on the health sector in the Kingdom of Saudi Arabia, the researcher created a questionnaire tool and deliver it through the community of Mouwasat Hospital in Kingdom of Saudi Arabia

- Statistical method:

The current research will use the statistical program (SPSS) in order to analyze the results of the study from the data collected from the sample. The study will use some of the statistical tools used, which can be mentioned as follows:

- Cronbach's alpha coefficient and half division to verify the validity and reliability of the scale.
- The arithmetic mean and standard deviation will be used to answer the study questions.
- Regression analysis to measure the impact of artificial intelligence on the health sector in the Kingdom of Saudi Arabia.

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