

Artificial Intelligence In The Healthcare System

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ABSTRACT

Introduction: Researchers and health professionals are focusing on the application of artificial intelligence (AI) in the healthcare field. Prior research on this subject matter has been limited in its exploration of various fields of study; including accounting, management and business, decision sciences, as well as medical professions.

Aim of work: To investigate the role of AI and its applications in the healthcare system.

Methods: We conducted a comprehensive search in the MEDLINE database's electronic literature using the following search terms: artificial intelligence (AI), technology, applications, opportunities, problems, healthcare system. The search was restricted to publications from 2020 to 2024 in order to locate relevant content. I performed a search on Google Scholar to locate and examine academic papers that pertain to my subject matter. The selection of articles was impacted by certain criteria for inclusion.

Results: The publications analyzed in this study encompassed from 2020 to 2024. The study was structured into various sections with specific headings in the discussion section.

Conclusion: Presently, it appears that leading hospitals are utilizing AI-powered systems to improve the efforts of medical professionals in identifying and addressing different health conditions in patients. In addition, AI technologies are greatly improving the efficiency of nursing and management tasks within healthcare facilities. While many healthcare professionals are embracing AI with enthusiasm, its applications present both promising opportunities and challenging hurdles that require attention. We thoroughly examine the particular aspects of these possibilities and challenges to offer an unbiased evaluation of the advantages of AI applications in the healthcare industry. The rapid advancement of AI and related technologies will undoubtedly empower care providers to deliver added value for their patients and improve the efficiency of their operational procedures. However, to fully harness the benefits of AI technologies, it is essential to have carefully crafted plans and strategies to revamp the entire care service and operations.

Keywords: Artificial Intelligence (AI), Technology, Applications, Opportunities, Challenges, Healthcare System.

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INTRODUCTION

Digitalized organizations use information and communication technology (ICT) to enhance operational effectiveness and gain a competitive edge (Lee and Lee, 2020). Various industries use advanced digital technology and gadgets to drive innovation and generate profit during the Fourth Industrial Revolution (4IR) (Nyagadza et al., 2022). Digital technologies including artificial intelligence, machine learning, smart sensors and robots, big data analytics, and the Internet of Things are being actively used by hospitals and care providers worldwide, especially in developed nations, to improve both the effectiveness and the quality of treatment.

AI-aided technologies have been widely used in healthcare institutions recently in an effort to maximize the utilization of medical resources and improve the quality of treatment provided (Lee and Lee, 2020). The knowledge-intensive healthcare industry has a lot of opportunities for innovation because to AI-based technologies like machine learning, natural language processing, and smart robots (Briganti and Le Moine, 2020). Furthermore, since AI has the potential to make significant strides in the treatment of human ailments and public health, it has attracted the attention of academics, doctors, technology and program developers, and consumers across a variety of fields (Ghaffar Nia et al., 2023).

AI-supported medical investigations and histories of patient treatment are used to improve doctors' diagnostic and treatment decision-making processes, which is why they are so important (Oikonomou et al., 2020). According to Shalaby et al., breast cancer is detected by artificial intelligence (AI) diagnostic algorithms, which also provide an additional evaluation to radiologists' picture interpretations. Shalaby et al. (2023) report that research indicates AI technology may detect skin cancer more accurately than a board-certified dermatologist. The diagnostic process may be accelerated and enhanced via the use of insights obtained from a vast reservoir of data and information. Furthermore, complex virtual human avatars are being used to have the essential conversations with patients in order to diagnose and treat mental health issues (Lee et al., 2021).

In order to monitor COVID-19 patients within isolation wards more effectively, Santos et al. studied how to make wearable ambulatory monitoring systems (AMS) more effective. Heart rate, peripheral blood oxygen saturation and respiratory rate, were measured and sent continuously from ambulatory patients in isolation wards to nursing bays situated at a distance from those individuals using wearable equipment, such as a finger-worn pulse oximeter and chest patch. Reducing the danger of infection for nursing workers was the aim of this. Vital-sign data from wireless Android tablet devices was sent promptly from the virtual High-Dependency Unit system using secure web-based protocols. In isolation areas, these tablets were employed at the bedside to capture patient data. Clinicians might then view the data through any contemporary web browser by using a remote clinician monitoring interface. Nurses no longer have to physically visit the isolation ward to reset the patient monitoring devices since fault-tolerant software programs allow the wearables to be reconnected automatically. The nurses' vital-sign observations, which they had recorded using a different electronic observation technique, were also shown on the remote dashboard. This allowed the nurses to review the data from both sources in a single chart. During the initial wave of the pandemic in the UK, there was a correlation seen between the system's use and the prevalence of local COVID-19 cases. During the height of hospital admissions in the area, wearable technology was used to monitor almost half of the patients in the isolation ward. A median of 31.5 hours were spent observing the patients, which makes up 88.1% of the median amount of time the patients were entered into the system. This implies that at this period, the technology

was used within the isolation ward. During the second and third waves of the pandemic in the UK, the system was updated and put into use (Santos et al., 2021).

It's possible that some individuals would think physicians will become obsolete in the near future given situations in which AI supports or enhances the diagnostic, treatment, and surgical processes. Prior to implementation, it is crucial to evaluate the potential contributions and obstacles that AI might provide in the healthcare sector. The tremendous potential of AI is evident from several real-world instances of its applications, ranging from basic operational process innovation to advanced emergency patient therapies (Ramírez, 2024).

This study investigates several real-world examples in the field of healthcare to determine how AI affects operational processes along with care services. We will be able to suggest many strategies to enhance hospital operational efficiency as well as the efficacy of patient care and preventative medicine thanks to this research. To accomplish this goal, we carried out a comprehensive analysis of the body of literature as well as several real-world examples to uncover the application of AI technologies and their integration into healthcare systems. Because it offers fresh insights into the future of technology-driven service operations management, this study is important. It is expected that the findings of our study will provide noteworthy new perspectives to hospital management, physicians, curriculum developers for medical schools, managers in charge of training and education, experts in human-machine roles and duties, cybersecurity and privacy analysts, as well as medical ethics experts.

AIM OF WORK

To investigate the role of AI and its applications in the healthcare system.

METHODS

A systematic search was performed on reputable scientific platforms such as Google Scholar and Pubmed, using targeted keywords such as artificial intelligence (AI), technology, applications, opportunities, challenges, and healthcare system, in order to compile all pertinent research publications. The articles were selected based on certain criteria. After thoroughly analyzing the abstracts and significant titles of each publication, we removed case reports, duplicate papers, and publications that did not have complete information. The reviews analyzed in this study were published between the years 2020 and 2024.

RESULTS

The current investigation concentrated on the role of AI and its applications in the healthcare system between 2020 and 2024. As a result, the review was published under many headlines in the discussion area, including Applications of AI in the Healthcare System, Real-World Applications of AI in Healthcare System, The Possibilities and Barriers of AI Implementation in Healthcare System

DISCUSSION

AI emulates human cognition in systems such as computers and robots to imitate cognitive abilities such as learning and problem-solving. Data enhances machine learning techniques such as regression and clustering. Deep learning, an emerging discipline rooted on artificial neural networks, relies on data to acquire knowledge and address challenges. The increasing integration of AI technology into everyday life has made them indispensable for organizations (Mele et al., 2022).

1. Applications of AI in the Healthcare System

Artificial intelligence is becoming part of our everyday life. The clever voice-activated AI speaker “Aria” from SK Telecom is one example. For carriers who are unable to use other devices because of accidents, impairments, or other conditions, Aria may make emergency calls. When an old person falls and begs Aria to assist, Aria calls ADT Caps, the care facility, or emergency family members. If it's an emergency, the center will contact 119 (South Korea's emergency number). This help has saved countless elderly singles. Aria helps with recipes. Aria will guide a user through the process of making salmon if they ask her for one. Aria assists with personal budgeting. Users may ask Aria to remind them of the monthly payment deadline or suggest a credit card based on annual fees and interest rate (Lee and Trimi, 2021).

Healthcare systems using AI provide solutions and services to patients. In order to develop healthcare apps that may provide medication notifications, patient education, and health evaluations, Chavali et al. recommended integrating systems with AI. Chavali et al. further noted that AI-enabled gadgets like personal assistants might help monitor and support patients while medical professionals are absent. AI-supported smart robots may help doctors diagnose, treat, save time, and respond to patients (Chavali et al., 2024).

About 6000–8000 uncommon illnesses affect 400 million individuals globally. Rare illness diagnosis takes five years on average. Therefore, uncommon illness patients spend a lot of time, effort, and money trying to get a diagnosis (Cohen et al., 2020). AI has detected 1200 uncommon illness cases, according to 3Billion, a bio-startup that diagnoses DNA. 3Billion can test 7000 illnesses simultaneously in suspected instances. A doctor diagnosed one case differently than AI-based technology advised. The CEO of 3Billion said that since medical professionals are not specialists in all ailments, they must concentrate on a few. The patient may lose time on "diagnosis wanderings" between hospitals. Rare illness patients worldwide face this issue. Doctors can only treat so many people. In medicine, AI can save hundreds of millions of lives (Faviez et al., 2020).

With a 94% success rate, the Moorfields Eye Hospital in London has created an AI diagnostic system that can correctly prescribe therapies for over 50 eye illnesses (Arora et al., 2021). AI is being used in China to diagnose colon polyps. One clinical study used AI-based technology in conjunction with a gastrointestinal expert to diagnose a patient, whereas another study relied only on a specialist. According to Su et al. (2020), the use of AI resulted in a 20% increase in polyp identification.

Lee and Yoon claimed that AI may not provide equivalent advantages in the medical domain compared to its use in other economic sectors. Although the use of AI may improve patient outcomes, it is not presently anticipated to significantly reduce costs or improve healthcare services in a fundamental way in the next few years (Lee and Yoon, 2021). Nevertheless, prominent healthcare companies, which strive to develop new methods to distribute care units and enhance administration, consistently use AI-powered technology to accomplish unprecedented tasks.

Lee and Yoon observed that customers make a variety of non-urgent health choices on a regular basis. These choices may not need the expertise of a highly experienced medical professional, but they do have a significant impact on patients' well-being and the overall cost of healthcare. Hence, it is important to have a comprehensive perspective on AI-enabled technology in order to assess its potential effects on healthcare (Lee and Yoon, 2021).

2. Real-World Applications of AI in Healthcare System

The World Health Organization states that lifestyle factors such as exercise, diet, sleep patterns, stress reduction, improper use of drugs and medications, and leisure activities account for 60% of the factors that determine an individual's health and quality of life. Digital gadgets may now be used by AI-assisted technologies to provide personalized lifestyle interventions and reminders based on a person's vital signs throughout the day. Through increasing operational efficiency, streamlining patient relations, and upgrading care services, AI-based technologies have the potential to completely transform the healthcare industry. It is anticipated that this change would significantly affect patient outcomes.

2.1 Diagnostic Aid

It is expected that AI would simplify the process of identifying some ailments in people. According to research by Perry et al., false diagnoses account for over 60% of medical mistakes and cause 40,000–80,000 deaths in US hospitals each year. Therefore, using AI-driven solutions across many healthcare domains might potentially reduce errors resulting from human judgment (Perry et al., 2021).

AI was used by the prestigious Mayo Clinic, a US healthcare facility well-known for its innovations in patient care and medical technology, to screen for cervical cancer and identify early indicators of precancerous abnormalities in women's cervixes. In order to identify early signs of cervical cancer, the AI method uses an algorithm that integrates more than 60,000 cervical images from the National Cancer Institute. The algorithm has much superior accuracy (91%) compared to a proficient human expert (69%) according to a study conducted by Schwalbe and Wahl in 2020.

The National Health Service Foundation-affiliated Moorfields Eye Hospital in London has debuted AI technology that can identify signs of eye illnesses as accurately as top-tier doctors and experts. By processing data from over 15,000 British patients, AI technologies allowed the application to identify eye diseases using optical coherence tomography. According to the hospital, for over 50 eye illnesses, the AI-powered system achieved a referral decision accuracy of 94%, which is on par with the accuracy of the world's best eye doctors. The pace at which we are doing eye scans is faster than our capacity as human professionals to interpret the results quickly, according to Dr. Pearse Keane of Moorfields Eye Hospital (Korot et al., 2021). Consequently, the use of AI-based technology may significantly decrease the amount of time required for diagnosis.

Zhang et al. used anteroposterior pelvic radiographs to create a deep learning (DL) approach for diagnosing hip developmental dysplasia (DDH) in juvenile patients. They also looked at how feasible it would be to use this method. This experiment comprised 1,138 individuals in all. For hip dislocation detection, the DL system acquired an area under the receiver operating characteristic curve of 0.975, a sensitivity of 95.5 percent, and a specificity of 99.5%. When comparing the deep learning system's predicted acetabular index to the clinical diagnosis, the Bland-Altman 95% limits of agreement were $-3.27^\circ - 2.94^\circ$ and $-7.36^\circ - 5.36^\circ$, respectively, based on radiographs of non-dislocated and dislocated hips. The research demonstrated that the deep learning system exhibited a high level of consistency, more convenience, and increased effectiveness in diagnosing DDH when compared to diagnoses made by clinicians. When diagnosing DDH, it is advisable to use DL methods for the interpretation of anteroposterior pelvic radiographs. The use of the DL system would enhance the existing screening referral procedure, which is now unnecessarily complex (Zhang et al., 2020).

2.2 Nursing and Administrative Support

It is common knowledge that healthcare professionals often face a significant amount of paperwork throughout the treatment process. This burden is forcing the healthcare sector, with the help of AI-based technologies, to embrace electronic systems that combine and digitize medical information. Moreover, the employment of chatbots has been acknowledged as a potentially effective tool for promoting communication with patients and their families within healthcare environments (Miles et al., 2021).

The AI virtual assistant Cortana from Microsoft was first used in 2016 by the nonprofit academic medical center Cleveland Clinic in Cleveland, Ohio, to identify patients in the intensive care unit (ICU) who are in danger by using sophisticated analytics and predictive modeling. Cortana is integrated into the e-Hospital system at Cleveland Clinic, where she monitors 100 beds in 6 ICUs from 7 p.m. to 7 a.m. An artificial intelligence (AI) system at the University of Pittsburgh Medical Center has been created with the capacity to watch and learn from conversations between doctors and patients that take place within hospital rooms (Lee and Yoon, 2021).

The non-profit academic medical center in Baltimore, Johns Hopkins University Hospital, announced in March 2016 that it was partnering with GE healthcare companies to apply AI and predictive analytics in order to improve operational efficiency (Lee and Yoon, 2021). The Johns Hopkins Hospital Command Center receives 500 communications each minute, which is an enormous amount of data. It uses twenty-two high-resolution, touch-screen computer monitors to efficiently integrate data from fourteen different IT systems inside of Johns Hopkins Hospital. James Scheulen, the chief administrative officer of Johns Hopkins' emergency services and capacity management division, claims that the use of AI technology has improved the healthcare system in a number of ways. These involve a 70% reduction in operating room transfer delays, a 63-minute early ambulance dispatch for patients from other hospitals, a thirty percent decrease in the time it takes to assign a bed to emergency room patients, and a sixty percent improvement in the hospital's capacity for admitting patients with complex medical conditions from other regional and national hospitals (Lee and Yoon, 2021).

AI-powered healthcare technology is also being used in real-world applications such as robotically assisted surgery and virtual nurse assistants. Robotic-assisted surgery is popular among surgeons because to its remarkable precision, controllability, and adaptability. With the use of robotic assistance, surgeons may now perform very difficult or previously impractical surgical operations with great success. Thanks to recent advances in technology, doctors may now access critical patient information in real-time throughout surgery. This entails fusing real-time data with medical records and using AI tools to examine previously effective procedures of the same kind (Bohr and Memarzadeh, 2020).

The administrative workflow and diagnostics using AI examples that were previously stated serve to highlight the increasing number of areas in which artificial intelligence is being used in the healthcare system. To continuously improve the quality of AI-assisted solutions, we examine several issues that need to be addressed in the healthcare industry.

3. The Possibilities and Barriers of AI Implementation in Healthcare System

In order to enhance AI-based diagnostics, the market must create systems that are specific to various industries by using machine learning algorithms and a significant amount of patient data that is culturally and ethnically diverse (Paul et al., 2020). Healthcare academics and practitioners may provide educational illustrations to AI systems to enhance their intelligence. Similar to other emerging technologies, medical AI systems have both positive and negative impacts. The utopian viewpoint presents several innovative approaches to enhance disease

treatment, optimize care and patient satisfaction, promote patient engagement, minimize medical mistakes and healthcare expenses, and enhance the efficiency of care provider management. The dystopian worldview presents several severe challenges. The use of advanced patient data analytics may exacerbate issues about cybersecurity, specifically in relation to privacy and security, responsibility for medical errors, and potential employment displacement (Barreiro-Ares et al., 2023). It is important to do research on the main advantages and disadvantages of AI-based technologies in order to guarantee responsible use and general acceptance in the healthcare sector.

3.1 Possibilities with AI Applications

The health care system has greatly benefited from the increased use of AI-based technology, leading to a broad range of new prospects. Here, we will explore some of the significant ones.

• Enhanced Disease Therapies

The public's enthusiasm for using innovative digital technology to enhance patient care and public health was prompted by the launch of IBM Watson, which also marked the beginning of data-driven medical research (Faheem and Dutta, 2023). AI applications in healthcare are being used in real-world settings, showing how cutting edge technology is helping doctors with almost every facet of patient care. Swift et al. demonstrated the potential of an AI-assisted MRI-based cardiac motion algorithm to enhance the management of high blood pressure and pulmonary disease (Swift et al., 2021). A rare DNA illness diagnostic algorithm was created by 3Billion in 2019. According to Mollura et al., AI-based solutions have the potential to greatly improve healthcare for patients on rural farms in developing countries (Mollura et al., 2020).

AI has more success when it has access to large amounts of radiological data, which may be used to improve medical imaging and therapy. AI software that enhances patient diagnostics will provide advantages to both patients and medical professionals. Examining the frequency of mitosis in cancer cells by visual analysis utilizing photos or a microscope is a straightforward but labor-intensive process. AI software can do this task with more precision and speed, assisting healthcare personnel in their responsibilities and minimizing tedious work. AI-assisted medical software has the potential to acquire knowledge from a larger pool of data and medical research. It has been proved that AI-supported medical software currently surpasses physicians in sickness diagnosis. The development of AI systems will be advantageous for medical staff as it may identify areas that are often overlooked by humans and minimize medical errors during patient care (Langs, 2024).

• Enhanced patient participation and involvement

Noom is a well-known application for smartphones that functions as a diet tool and offers health coaching. Additionally, it has the capability to prevent diabetes (Ju et al., 2022). The company collaborates with clients worldwide to assist them in developing better behaviors, minimizing their susceptibility to chronic health issues, reversing diseases, and cultivating stronger self-relationships. To attain targets with this coaching software, entire dedication is required (Ju et al., 2022).

Active participation of patients in treatment is crucial for accurate disease diagnosis and ensuring safety. Patients also highly appreciate their individual medical consultations (Zaghini et al., 2020). Patients exhibit more interest in their medical treatment when they are actively encouraged to engage, resulting in an enhancement in the quality of care. Anderson et al. found that patients' active engagement in the therapy process enhances treatment results and safety.

Therefore, it is important for healthcare providers to give priority to patient engagement and participation in order to improve the quality of treatment and increase the overall patient experience (Anderson et al., 2020).

Patients who lack knowledge of AI or AI-assisted medical systems are more inclined to engage in treatment supported by such systems if they are informed via popular media or by their doctor about the benefits, such as quicker and more precise diagnoses, decreased medical mistakes, and reduced medical expenses. Healthcare companies should implement initiatives to educate patients and their family members about the advantages and risks of AI and AI-integrated medical systems, considering their fast expansion. Knowledgeable clientele will use AI medical systems more readily, expanding their therapy options (Zidaru et al., 2021).

- **Reduction of Medical Errors and Increased Service Quality**

Su et al. discovered a 20% increase in the detection of polyps in Chinese colonoscopies when using AI. Gastroenterologists often fail to detect small (5 mm or less) or early-stage polyps during colonoscopies, but the AI-supported method can accurately identify them. AI technologies assist physicians in the removal of small polyps that may lead to future complications, therefore improving treatment outcomes and reducing medical mistakes (Su et al., 2020).

Researchers from the University of Tokyo Medical School have created an AI system combining innovative algorithms and order parameters. For a particular group of patients, the maximum accuracy attained was 83.5% when this system was linked to a medical deep-learning AI application. Accuracy increased to 87.3% with the addition of a deep-learning and decision tree AI system. Advanced AI systems have the potential to reduce mistakes and enhance the quality of treatment (Zeng et al., 2022).

AI is anticipated to largely replace radiologists in the future. Radiologists have the ability to interpret 50-100 X-rays every day, whereas AI-assisted systems have the capability to interpret 10-100 times more. AI has a higher level of precision compared to radiologists. By augmenting radiologists, the AI system allows doctors to save time, which can then be used to engage in more meaningful and friendly talks with patients, so enhancing the quality of therapy. The enhanced precision of AI's data enables medical personnel to foresee and prevent errors (Gore, 2020).

3.2 Barriers Associated with AI Implementation

Although AI applications provide new prospects for enhancing people's everyday lives, they also pose issues that need to be adequately addressed. The issues in the healthcare system are particularly formidable because of the potential impact on human lives. Several difficulties that need prudent management include the following.

- **Accountability of the System Use**

Although AI-related technology has made rapid progress and is widely used, there is a lack of ethical study on AI. Dr. Stephen Hawking cautioned that the fast proliferation of AI and intelligent robots might lead to a loss of human control over them. In addition, he suggested the establishment of a global artificial intelligence regulatory body (Russell, 2022). Currie et al. emphasized the importance of AI morality in promoting societal well-being. Given the expected growth of AI-based technologies/systems across many sectors, it is important to ensure that they are designed to function in a manner consistent with societal norms and values, resembling human behavior. In the field of groundbreaking healthcare, it is imperative that AI

applications be held responsible for any adverse consequences via social agreements (Currie et al., 2020).

- **AI Divide**

One characteristic that sets the healthcare industry apart from other service sectors is the general public's propensity to have blind confidence in medical professionals. The placebo effect might be the cause of this phenomenon. Research has shown that a therapeutic response occurs when a patient has unshakeable trust in a doctor's treatment and really believes that their disease will be addressed (Benedetti, 2020). Trust between a doctor and patient is essential since it increases the effectiveness of medical treatment. The patient will participate in a care delivery process that creates a link with an artificial system rather than a human doctor if an AI-based technology or system assumes the role of a doctor. Trust is necessary for this new partnership between the patient and an AI-enabled device or system to be effective (Currie et al., 2020). But it would be difficult for someone who is unfamiliar with digital technology—especially artificial intelligence—to put their trust in an AI system. If the physician can reassure the patient about how the system would improve their access to high-quality healthcare, then this AI gap could be bridged.

- **Loss of Managerial Control**

In the digital age, several industries have become interconnected and no longer operate in isolation. The field of healthcare is not exempt from this. Medical professionals, including doctors and nurses, provided medical treatment to patients within the healthcare sector. In the present day, optimal physical well-being is achieved by the consumption of a nourishing food, regular physical activity, and consistent self-care practices, in addition to access to high-quality healthcare services. Therefore, the importance of preventive medicine has increased significantly, causing the boundaries between a healthy way of life, medical practices, and technology to become less distinct (Mudgal et al., 2022). A closed healthcare system is thus no longer appropriate or efficient. A variety of smartphone applications, including Aria, Alexa, Robot Maria, and others, may assist in integrating many facets of well-being. AI technologies are used to remotely diagnose, treat, and manage patients who are receiving care at home.

In the healthcare industry, care providers are becoming more dependent on consultants, experts, and professionals in the fields of ICT, convergence, and human resource management due to the widespread use of AI technology. Therefore, a number of external and internal specialists work together on providing care services. Therefore, bureaucratic governance is not suitable for modern hospitals. Hospital administrators may experience a loss of control over their managerial authority. The new governance is an interactive and adaptable system that integrates and connects all systems, technologies, and people to provide optimal patient care (Khang et al., 2024).

- **Job loss, Skill Development Requirements, and the Challenges of Transition**

Amazon announced its intention to provide training for 100,000 employees in emerging technologies by 2025, particularly for occupations related to artificial intelligence. According to Jeff Wilke, CEO of Amazon's global consumer business, people may develop in their careers and reap benefits from technological breakthroughs as they arise. The Health Innovation Big Data Center at Asan Medical Center in Seoul, Korea, is another example. This center has just started the training of developers and commercializers specializing in AI algorithms (Dauvergne, 2020).

There is a prevailing belief that radiography may become obsolete in the future due to the superior ability of AI to analyze diagnostic medical images compared to humans. Nevertheless, artificial intelligence has the potential to empower radiologists to provide more precise diagnostic services (Cacciamaninet al., 202). AI-related technologies will automate several repetitive vocations. While some positions may be eliminated, many new professions will be generated to sustain AI-driven systems and devices.

Artificial intelligence has the potential to enhance the interactions between healthcare providers and patients by solving the existing weaknesses in the system. Hence, it is imperative that the medical school curriculum include training and technologies pertaining to AI. The effectiveness of Medical AI is limited by the availability of patient datasets, so there is a need for more precise AI applications. Early and passionate involvement from medical professionals is required for the growth of AI research (Singh et al., 2020). To address this problem, it is essential to give a skilled workforce numerous opportunities to learn about modern technologies, including the use of artificial intelligence, so they can work with medical professionals and quickly meet the needs of the customer-focused healthcare industry. To encourage job creation, we suggest that medical schools implement new curriculum that include human-machine convergence, data analytics, cyber responsibility, morality, and innovation in technology.

CONCLUSION

AI applications are revolutionizing healthcare delivery, diagnosis, treatment, and patient lives, transforming the industry and requiring innovation. This paper examines AI-based healthcare innovations to inform academics and practitioners about the possibilities of new technologies, particularly AI in care delivery and operations. AI-based systems require data collection and analysis, including patient ethnicity and culture, for proper diagnosis. To improve healthcare AI, a legal framework for information access and exchange is needed, with data quality improving output confidence, reducing risk, and boosting efficiency. Socially agreed AI data sharing, secrecy, and responsibility must be promoted, and healthcare AI research, accessibility, and utilization must increase. Collaboration among professionals is essential for AI application development, application, and analysis. Instead of focusing on AI's job-destroying potential, healthcare institutions should focus on creating value by converting lost radiologists into medical technicians. Medical professionals, ICT companies, and the government should study medical informatics to create a platform for analyzing and exchanging healthcare big data. AI education should be mandatory for college majors, and information security systems should be tightened to prevent cyber-attacks and operational failures from leaking patient data. AI in healthcare services is predicted to grow with the 5G network, and long-term, AI-enabled technology should be used holistically.

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