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Using Ethical Artificial Intelligence EAI to Improve the Management of Hospitals and Health Care Centers

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ABSTRACT

Modern methods of managing health centers and hospitals are necessary to achieve sustainable development in providing a decent, comfortable life, health and security. The most prominent of these methods is the use of Ethical Artificial Intelligence (EAI), which may help in managing hospitals through predictive analysis, digital monitoring, continuous education, and enhancing inputs. The outputs and building a broad and robust database, helps reduce costs, and enables personalized care. It also changes procedures, makes the most of available resources, diagnoses clinical and radiological examinations and helps improve patient outcomes to the greatest extent possible.

Artificial intelligence in medicine relies on an amazing array of tools and technologies that enable doctors and health professionals to achieve tremendous progress in multiple fields. Artificial intelligence transforms huge medical data into valuable information and smart decisions. It can scan millions of medical records in just seconds and detect patterns and trends invisible to humans.

In addition, artificial intelligence can apply machine learning algorithms to analyze medical images with high accuracy, contributing to the diagnosis of diseases with unparalleled speed and accuracy. Artificial intelligence also has the ability to characterize complex relationships between multiple factors that affect health.

It can analyze genetic, environmental data and individual health habits of patients to better understand the causes of diseases and disorders.

Artificial intelligence may also help guide treatment more accurately and effectively. It promotes better medical decision-making based on accurate evidence and tailor's treatments to meet the needs of each individual patient.

In terms of medical research, AI can accelerate drug discovery and the development of new treatments by analyzing big data and bio information at breakneck speed.

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INTRODUCTION

Artificial intelligence is a set of technologies that enable machines to analyze data, make decisions, and perform tasks intelligently and independently. AI can contribute to improving the quality and efficiency of healthcare and medicine around the world, if ethics and human rights are placed at the heart of its design, deployment and use.

Potential applications of artificial intelligence in health care include: Improving the speed and accuracy of diagnosis and screening for diseases; assisting in clinical care; promoting health research and drug development; and support various public health interventions, such as disease surveillance, outbreak response, and health systems management [1-5]. AI can also enable patients to take more control over their healthcare and understand their changing needs. It can also help bridge gaps in access to health services for countries with limited resources and rural communities, where patients often have difficulty accessing healthcare workers or medical professionals.

But UNESCO also warns that these technologies may also generate risks and challenges stemming from malicious use of technology or deepening inequalities and divisions. We may see an increase in bias based on gender or race, significant threats to privacy, dignity and agency, or risks of mass surveillance, which is why we emphasize the use of ethical artificial intelligence [6,7].

The use of ethical artificial intelligence in the management and operation of health institutions, whether they are hospitals, clinics, laboratories, rehabilitation facilities, pharmacies, accident or emergency centers, intensive care units, etc., requires adherence to ethical and legal principles that ensure that the privacy of patients, their families, and workers in this sector is not violated. In accordance with the laws, customs and traditions prevailing in society [8-10]. In this context, UNESCO presents a recommendation on the ethics of artificial intelligence, which defines the common values and principles that must be followed to ensure the sound development of this technology.

Among the guiding principles provided by the recommendation, we mention the following:

Respect for human rights, dignity, freedom, cultural diversity and ethnicity. Ensuring transparency, accountability, and verifiability of artificial intelligence processes and the data used in them.

Protecting the privacy of individuals and groups from any illegal or unethical use of their personal or sensitive data.

Strengthening solidarity and cooperation between all parties concerned with developing and spreading the culture of using artificial intelligence in the field of health [11].

Supporting education, training, and research in the field of artificial intelligence ethics to increase awareness and confidence among the beneficiaries of this technology.

Encouraging innovation and creativity in using artificial intelligence to improve the quality of life for everyone.

LITERATURE REVIEW

Along with these principles, users of AI in health must consider its potential benefits and risks, and how to balance them. On the one hand, AI can make it easier for health professionals to make accurate and effective clinical decisions, based on the analysis of large, complex and diverse data that includes patient records, examinations, medications and medical literature [12-15]. Artificial intelligence can also help improve the quality, efficiency and cost of health services, by reducing errors, delays, repetition and waste. Artificial intelligence can also contribute to enhancing population health, by supporting preventive, therapeutic and promotional interventions, and providing information and awareness to the public.

On the other hand, artificial intelligence can pose risks to the health and safety of patients and workers in this field, if it is not applied ethically, legally, and comprehensively. For example, artificial intelligence can lead to the illegal or irresponsible collection and use of health data, threatening the privacy and confidentiality of patients and their families. AI can also incorporate biases or discriminations into its algorithms, affecting the quality and fairness of its results and decisions. Artificial intelligence can also pose a risk to patient safety, whether due to human error, technical failure, or a cyberattack.

Therefore, it is very important that we do not use artificial intelligence in the field of health without considering its implications for the rights and interests of patients and workers in this field. Rather, we must seek to implement it in a responsible, transparent and comprehensive manner, so that it achieves its benefits without causing risks. We must also keep in mind that artificial intelligence cannot replace health workers, but must be their partner and assistant, increasing their efficiency, creativity and satisfaction.

Among the potential benefits of artificial intelligence in the field of health

Improving the speed and accuracy of diagnosis and examination of diseases, which helps to detect them early and treat them better.

Providing clinical support to health professionals, such as providing treatment recommendations, risk alerts, or assistance with surgical planning [16].

Promoting health research and drug development, through the use of artificial intelligence to analyze large and complex data and reveal patterns, trends, and relationships [17].

Support public health interventions, such as disease surveillance, outbreak response, and health systems management, in addition to providing information and awareness to the public.

Empowering patients to take more responsibility for their health care and understand their changing needs, through the use of smart device applications.

Bridging gaps in access to health services for countries with limited resources and rural communities, where patients often have difficulty accessing healthcare workers or medical professionals.

As for the potential risks of artificial intelligence in the field of health, we mention, for example.

Unethical or illegal collection and use of health data, which threatens the privacy and confidentiality of patients, their families, and workers in this field.

Incorporating bias or discrimination into artificial intelligence algorithms, which affects the quality and fairness of its results and decisions.

The danger of artificial intelligence to patient safety, whether due to human errors, technical failure, or electronic attacks.

The danger of artificial intelligence to the environment, whether due to its consumption of energy and various resources without regard to its impact on the environment.

Therefore, it is essential that users of AI in health follow an ethical and legal framework that protects the rights and interests of all parties involved. In this regard, the World Health Organization calls for six guidelines for the design and use of artificial intelligence in health:

Protecting humanity: The goal of artificial intelligence in health should be to improve the health and well-being of all individuals and groups without discrimination or marginalization.

Strengthening solidarity: Artificial intelligence in the field of health must contribute to reducing disparities in the health and opportunities of patients and workers in this field at the local, regional and international levels.

Respect for individual rights: Artificial intelligence in the field of health must respect the rights, freedom and privacy of every individual, and not interfere in their decisions, authority or will.

Ensuring transparency: The process of developing, deploying and using artificial intelligence in the field of health must be transparent, interpretable and verifiable, so that individuals and groups can understand how its decisions are made and its impact on their lives.

Promoting responsibility: All participants in the development, deployment and use of artificial intelligence in health must bear legal and moral responsibility for its outcomes, whether positive or negative.

Ensuring accountability: There must be effective mechanisms to ensure accountability at all levels, so that individuals and groups can demand and obtain fair compensation when any harm or negative effects occur; Due to the use of artificial intelligence in the field of health.

AI can play an important role in improving the health and well-being of millions of people around the world, if applied ethically, legally and comprehensively. For this purpose, all those involved in the development, dissemination and use of artificial intelligence in health must follow the ethics of the use of artificial intelligence, which defines rules and standards that guarantee respect for human rights, solidarity, individual rights, transparency, responsibility and accountability. Users must also be aware of the potential benefits and risks of artificial intelligence in health, and how to balance them [18-20].

Advantages of artificial intelligence

Accurate diagnosis, as artificial intelligence is used and the patient's clinical data and health history are accurately analyzed. It may be able to detect complex patterns in data, helping to identify rare diseases or early diagnosis of diseases.

Improving personalized treatments: Artificial intelligence uses health record data and individual patient information to guide the most appropriate treatment. It can predict drug interactions and optimal doses to ensure patient safety.

Medical image analysis: Artificial intelligence is used to analyze medical images such as X-rays, CT scans, and dermatology images.

It can identify subtle changes and visible signs of diseases, which helps in diagnosing diseases early.

Accelerating medical research: AI can analyze big data from clinical trials and research studies. Artificial intelligence may contribute to the discovery of new drugs and the development of better treatments by analyzing the relationships between genes, diseases, and therapeutic effects.

Increase administrative efficiency: Artificial intelligence is used to manage hospitals and improve resource allocation. It can improve planning operations, managing treatments, and scheduling appointments.

Contributing to improving patient care: Artificial intelligence can help doctors make quick, informed decisions. It contributes to providing personalized and effective care to patients based on their individual needs.

Reducing medical errors: Artificial intelligence reduces the possibility of medical errors by providing accurate guidance to doctors, and it also reduces misinterpretation of data and human errors.

Save time and effort: Artificial intelligence eases administrative and routine burdens on doctors and surgeons, as it allows them to focus on more specialized operations and better patient care.

The advantages of artificial intelligence in medicine highlight the importance of its use in improving health care and increasing effectiveness and accuracy in the field of medicine.

The advantages of artificial intelligence in medicine show enormous potential to improve healthcare and change the face of medicine and human nature for the better.

By enabling accurate diagnosis, directing effective treatments, and accelerating medical research, AI contributes to a better quality of life for individuals and increased chances of survival and recovery.

In addition, it reduces medical errors and contributes to saving time and effort for health professionals, allowing them to focus on care based on individuality and humanity.

Artificial Intelligence is an innovative solution to complex health challenges and paves the way for a better health future.

In short, AI brings together technology and healthcare in a way that raises hope for delivering more personalized, efficient and precise care, contributing to improved human health and happiness.

DISCUSSION

The model for using artificial intelligence to manage hospitals, clinics, and health care centers.

First of all, if you are interested in using artificial intelligence to improve hospital or clinic management systems, then this is the model that we applied in this study in reality and obtained amazing results in response to the technological revolution in the field of health care, smart solutions and action steps that you can take to start applying the model as follows.

You must determine your needs. What are the biggest challenges facing your hospital or clinic? And what areas do you think AI can have the greatest impact.

You should look for artificial intelligence solutions. There are a number of different AI solutions available for hospital and clinic management systems. You should do some research and studies to find solutions tailored to meet your specific needs.

Carefully implement AI solutions. It is important to implement AI solutions carefully and monitor their performance closely. AI solutions must be integrated with existing systems and workflows in a way that minimizes disruption.

Artificial intelligence has the potential to revolutionize the management of hospitals and clinics. By using AI to automate tasks, improve patient care coordination, reduce costs, and improve the patient experience, hospitals and clinics can improve their efficiency and provide better care to their patients.

CONCLUSION

The use of artificial intelligence in hospital and clinic management systems has a positive role if it is done ethically, as great tasks and achievements begin with a small step. In this sense, do not try to implement too many AI solutions at one time. Start with some of the key areas where you think AI can have the biggest impact.

And get approval from employees. It is important to get employee buy-in before implementing any new AI solutions. The benefits of artificial intelligence and how it can help them perform their jobs better must be explained.

Then monitor the results. Once AI solutions are implemented, it is important to monitor their performance closely to ensure that they meet your expectations.

By following these tips, you can use AI to improve your hospital or clinic's management systems and provide better care for your patients.

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