

# AN INSIGHT LOOKS AT THE OPPORTUNITIES OF AI IN THE HEALTHCARE SYSTEM.

## Abstract

The rise of artificial intelligence (AI) in healthcare, have become an integral and powerful tool for better health care result. AI – based technology will improve the treatment quality, clinical outcomes and managerial activities. It will also reduce the treatment costs. It will be true to say that AI will make a miracle change in the field of healthcare in future. AI provides a bunch of opportunities, but with a bundle of challenging risks. The result of AI has not yet been satisfactory and impactful in healthcare. Few common lacking of AI includes: lack of data and too much data exchange, use of cloud storage to make the data accessible and reliable, patient's data privacy and security. How will these be overcome and adopted, to make it truly effective. This study will focus on opportunities and pros & cons of AI in healthcare.

**Keywords:** Machine Learning, Artificial Intelligence, Healthcare, Healthcare system, Future of AI in healthcare, Biomedical data,

## Authors

### Suman Mehta

Department of Mathematics and IT  
Magadh University  
Bodh-Gaya Bihar, India  
suman.nwd12345@gmail.com

### Amar Nath Chatterjee

Department of Mathematics  
K.L.S. College, Nawada, Magadh  
University  
Bodh-Gaya, Bihar , India  
anchaterji@gmail.com

## I. INTRODUCTION

Artificial intelligence is the science of making an intelligent machine [1]. With the rapidly growing advancement in science and technology, almost everyone wants to go for an automated machines and techniques to perform a task, and artificial intelligence is the only way to achieve the same. Artificial Intelligence is an ability for a machine to think and take decision for itself as per the analyzed situation or condition. Machines which are embedded with the AI – based technology can solve a complex or simple task faster and more efficiently than the human. Now a days many researchers and scientists, believe that artificial intelligence will be the next digital revolution [2,3].

John Mc Carthy, the great American Mathematician and Computer Scientist, born on September 4, 1927 in Boston, USA, coined the term Artificial Intelligence (AI) in the year 1956. When he was addressing a conference about technology's future at Dartmouth College, Hanover, United State. India was fortunate to welcome him at IIT Kanpur in 1968. When Indian students were being taught computer science and engineering using second generation computer of IBMs. He is also known as Father of AI, not only this but he also invented the Lips (List Processing) language. This improved machines capabilities of doing the things by its past experiences [4, 5].

The use of artificial intelligence in healthcare is not a new concept. In the year 1970s AI was first use in healthcare to help the biomedical issues with the help of AI – applications and tools. In the year of 2017, an AI driven robot is used in microsurgery by Maastricht University Medical Center, Nederland [6,7]. Now AI is spreading its roots in almost all the relevant fields of medical science like: pathology, cardiology, surgery, clinical tests, major disease detections and medicines suggestions [8]. Recently AI is widely used to identify the symptoms of Covid-19 disease for different variants of SARS-COV-2 virus like Delta, Omicron, etc. WHO provided a facility to the public to get protection's guidelines, virtual medical assistance using AI for Covid-19 [9,10].

- 1. Design of the diagnosis and treatment:** AI is being used more and more in healthcare to create treatment recommendations for patients. Man-made intelligence can provide better systems than treating patients and reviewing treatment plans by looking at data from previous patients. AI can detect symptoms of a disease more accurately and promptly with the help of clinical images such as CT scans, MRI, X-rays, and ultrasound. It makes a difference patient, with quick distinguishing proof of sickness precisely and more exact treatment decisions. IBM's Watson as of late stood out in the media for its capacity to zero in on accuracy medication, particularly malignant growth finding and treatment. Various kinds of AI strategies are being utilized for diagnosing various sicknesses like brain organizations, support vector machines, and choice trees and so on, ANN (Artificial brain network) showed more precision in characterizing diabetes and CVD
- 2. Electronic health records:** Electronic health records are crucial in healthcare since they help with tracing information from a specific past to the present, which influences research on different types of medications and how to use them to treat illnesses. Artificial intelligence can be used to interpret the records and provide the doctors with information. Calculations can utilize EHR to foresee the chance of a sickness in light of the past data and family ancestry. Computer based intelligence calculations are prepared

utilizing a lot of information, and in that cycle, calculation makes specific arrangement of decides that associates its perceptions to the closed analyze. Next time when the information of new quiet is given to AI, it can assess patient utilizing its insight from past information and predicts the similarity of a condition or sickness

- 3. Drug interactions and discovery:** Patients who are taking multiple medications at once are at risk from drug partnerships, and the risk increases with the number of prescriptions being consumed. However, with the help of AI, computations had the option to extract information on drug correlations and potential accidental effects from clinical literature, despite the difficult collaborations and unfavourable effects brought about by them. Drug revelation and improvement is a period consuming cycle as it requires quite a while and costs a few billion bucks. The medication disclosure times are diminished significantly with the assistance of AI strategies.
- 4. Dermatology:** Imaging plays a vital role in dermatology in the medical field. The handling of pictures has greatly benefited from profound learning. In dermatology, there are three different imaging types: pertinent images, miniature images, and full-scale images. Deep learning has demonstrated tremendous progress for each of these picture types. Convolution neural networks have achieved an accuracy of 94% in separating skin illness from skin sores. 'I in healthcare administration

Two of the most important areas where healthcare administration will change as a result of artificial intelligence are automated electronic health records and claims management in health insurance.

- 5. Electronic health records (EHRs) have** gained widespread acceptance around the globe, with many countries attempting to use them to increase patient access, service quality, and efficiency. EHRs have drawn criticism as it has been demonstrated that they negatively affect the relationship between patients and providers, despite their claims to improve care. For every hour they spend providing direct patient care, primary care doctors spend nearly two hours on EHR tasks. The majority of that time is used on administrative and clerical tasks. EHR systems are frequently considered to be a significant factor in professional discontent and physician burnout among medical professionals. Solutions that decrease physician data entry, like using scribes, have been implemented to increase physician satisfaction. From the perspective of artificial intelligence, there is another strategy.

Administrative and clerical operations such as writing chart notes, filling up prescriptions, and ordering testing can be automated using AI-based technologies such voice-to-text transcription and natural language processing. The use of AI for these administrative workflow assistant capabilities provides a large economic opportunity with a near-term value of \$18 billion. When these time-consuming tasks are eliminated, healthcare professionals can devote more time to actively caring for patients. Nuance Communications is putting this concept to use through Ambient Clinical Intelligence. Several microphones, computer vision sensors, and a deep learning model can be used to transform conversations into clinical documentation. This technology can eliminate the duplication of effort prevalent in the current system by speaking with a patient before entering all of that information into the EHR. This technology has the potential to reduce

labor costs, greatly improve physician satisfaction, and return the focus of healthcare to the patient as it is used and developed.

- 6. Health protection:** Due to manual claim management systems, health insurance currently confronts tremendous labour costs. Up to 70% of received claims are marked as odd for manual evaluation, according to a McKinsey analysis that looked at the German market. Additionally, only 10% of these instances receive a successful intervention. Health insurers and providers both lose time and resources as a result of these claim checks. The claims that are most likely to benefit from intervention would be identified and given priority by an AI-based claims management system. This would make it possible for improved labour allocation. The system may also offer advice on how to carry out the intervention. The final result is a more efficient claims management system that is advantageous to all parties. The more specialised instance of healthcare fraud is a continuation of the aforementioned. The yearly cost of healthcare fraud in the US is put at between \$100 and \$170 billion. Accenture estimates that fraud detection will be worth \$17 billion in the near future. Solutions based on artificial intelligence can spot fraud that has already occurred and gather proof. In order to prevent "upcoding," artificial intelligence can help sift through data to validate the services offered, spot irregularities, and examine additional behavioural data in addition to transactional data to spot possible fraudsters. As technology develops, using AI in conjunction with human assessment has the potential to significantly reduce losses due to healthcare fraud.

## II. AI FOR MEDICAL RESEARCH

The significant ways innovative work in medical services will change because of man-made reasoning incorporate the choice enrolment of clinical preliminary members and new strategies for drug revelation.

- 1. Clinical preliminary members:** The opposite of Moore's Law in the semiconductor industry, Eroom's Law is a peculiarity in the medical care industry's creative work: "the quantity of new pharmaceuticals getting administrative endorsement per billion USD spent has divided approximately every nine years". Due to setbacks in clinical preliminary studies, which occur in the areas of patient companion selection and patient recruitment, many novel drugs fail to receive administrative endorsement. AI and artificial reasoning can assist in improving both of these components. Electronic phenotyping, which was recently improved through the use of hand-crafted rules, can reduce populace homogeneity in the selection of a patient companion. A significant increase in phenotyping complexity would be taken into account by switching to AI and ML methods. Key biomarkers can also be imprecisely inferred from less intrusive tests using ML techniques. Alzheimer's disease and congestive cardiovascular failure are two specific conditions when these procedures might be used. Without proven treatments, cardiovascular breakdown with protected launch portion is phenotypically heterogeneous. However, artificial reasoning techniques could identify subsets of the illness that might benefit from therapies that failed in clinical trials in other ways. Additionally, it has been shown that artificial intelligence has the capacity to exactly predict the onset of diseases like Alzheimer's. By identifying these individuals at the onset of the illness, clinical preliminary treatments aimed at slowing its progression can be effectively and right away recruited in them.

- 2. Drug revelation:** Another strategy for addressing the problems identified in the creative work of medical services focuses on the fundamental advancements in therapy: drug disclosure. Support vector machines and unconventional backwoods approaches, for example, are two AI tools that are now used in the drug discovery process. Future developments in the discipline, particularly those related to brain organisations, are expected. Deep learning has been used to predict the properties of new combinations and has proven to be more effective than Random Forest methods. To promote a generative artificial consciousness capable of doing computational design, an intermittent brain network was used. The generative AI model can produce new mixtures inside the preparation data space by prepping on already-existing mixtures. With these two approaches, it is possible to create entirely new mixes or discover novel drugs from known chemicals. AI and artificial reasoning approaches will speed up, reduce the cost, and improve the quality of drug disclosure in the upcoming era of massive information analysis.

### III. ARTIFICIAL INTELLIGENCE IN DIAGNOSIS

The significant ways demonstrative methodology will change in light of computerized reasoning incorporate the mechanized examination of clinical pictures and the improvement of customized treatment plans.

- 1. Clinical imaging:** Perhaps the pharmacological area that has made the biggest strides thanks to the application of current thinking is clinical imaging. The employment of artificial mental capacity to picture evaluation has advanced significantly in the fields of radiology and ophthalmology specifically, with radiology participating in the most FDA supports for contemporary thinking-based estimates in medicine. In one audit, convolutional neural networks were used to depict aspiratory tuberculosis. The experts employed two brain associations, and when these classifiers faltered, a board-certified radiologist made the decision, attaining a responsiveness of 97.3% and expressness of 100%. In ophthalmology, retinal images must be responsive and expressive by a few groups above 90% in order to diagnose diabetic retinopathy. The current state of mechanised thinking in clinical imaging is one in which task-express artificial cognizance has started to match the presentation of humans, occasionally even outperforming individuals; going forward, common artificial mental capacity will completely outperform individuals. In any event, manually surveying these photographs today proves to be tedious and repetitive. By providing radiologists with pre-screened images and perceived features, the computerised assessment and finishing of the photos will eliminate these time and labour expenditures while increasing accuracy and reducing errors. As a result, patients will receive quicker turnaround times on thoughtful decisions and eventually quicker, better treatment.
- 2. Customized treatment:** One of the most inspiring applications of electronic thinking is the advancement of redesigned treatment regimens. Probably the most well-known employee in this industry is IBM Watson. In 2016, researchers from the University of Tokyo discovered that IBM Watson had successfully predicted that a lady had a rare form of leukaemia, an assertion that had eluded researchers for months. Watson had a huge selection of evaluation papers to choose from and the option to differentiate the patient's genetic alterations. When the contamination was noticed, the course of treatment may be

adjusted rationally. This is the premise behind incorporating contemporary thinking while creating revised treatment plans, to identify and seize opportunities that may be overlooked by qualified experts.

Man-made consciousness has additionally seen outcome in prescient examination when applied to electronic wellbeing record (EHRs). Applying profound figuring out how to EHR information to get general and strong highlights, trailed by an irregular timberland strategy considered the probabilistic expectation representing things to come improvement of a few diseases. Applying profound figuring out how to EHR information has likewise considered the expectation of ongoing mortality, readmissions and long lengths of stay. Man-made reasoning makes it conceivable to make models of analysis and care undeniably more intricate than previously. Instead of utilizing a couple of basic elements, man-made brainpower can consider large number of these straightforward highlights and further consolidate them to produce further highlights for thought. By and large, this considers the improvement of treatment plans intended for the patients, in view of their information and what can be anticipated from it.

#### IV. REVIEW OF LITERATURE

- 1. Adele parmentola et al. (2019)**, eludes innovation dispersion as an inescapable reception and use of specific innovation. In wide term it is of a wide range of recently arisen advancements which are continuously taken on by social orders. Dispersion of Innovation and Technology is the moving progress in embracing most recent computerized advances into the business to make straightforward cycle advancement and administration conveyance close by to likewise make brilliant client's insight. Particularly Artificial Intelligence is among the most remarkable advanced innovations that is changing the conventional approach to carrying on with work in the ongoing advanced time. There are a few investigates that are cantered around mechanical dissemination.
- 2. Diego a comin and bart hobijn (2008)**, directed a cross-country study to comprehend the inclinations, innovation reception choices and the market structure by thinking about the information from 166 nations and 15 advances, spreading over the period somewhere in the range of 1820 and 2003. Their concentrate on viewed as six ordered classifications of innovations; telecom, data innovation, power, transportation innovation, clinical innovation and steel. They fostered an innovation dispersion model with two key elements, like total level and disaggregate level. This examination centres principally around the slacks in reception. Such slacks are described as the time allotment among advancement and innovation reception. Their principal discoveries were a) reception slacks are wide that is 47 years overall and fluctuate a great deal b) Japan and East Asian nations' development marvels in innovation reception were definitely in excess of 100 separated c) they utilized a demonstrated model to gauge the impacts of country-explicit fluctuation and found that separates between the cross-country per capita pay on reception slacks.
- 3. Dan Andrews and Giuseppe Nicolette (2018)**, inspected the impact of computerized innovation dispersion with two pointers determined as firms abilities and motivating forces building up the organizations with the constructive outcomes of upgrade on advanced innovations, and saw that as three rendition of determinations as benchmark

computerized innovation reception model like a) to test the point, they test the joint impact of sets of abilities and motivations c) for a diminished arrangement of factors they checked the potential arrangement correspondence between set of underlying variables which includes adding a communication of abilities and motivation pointers to the model.

- 4. David sheffield and beck morris (2016)**, has stressed the impact of artificial intelligence at the present status i.e., in the year 2016 and that representing things to come in a hypothetical focal point. The creator expressed from the conversations with the people who were consulted on the period of artificial intelligence reception on the times of Industry 3.0 with the artificial intelligence rehearses in work environment then, at that point, and presently on how artificial intelligence is utilized in recognizing extortion and lessening the imperfections pace of thickness while performing dreary errands and furthermore having the option to spot and perceive dubious exercises and conduct intelligence. This Study considers the job of brain design by transferring information through a product variant on human intelligence taking into account the elements like memory, feelings, senses and considerations are been prepared through a memory driven calculation that does expectation and produce intelligence in deciding what's more, considers these two capacities as the design of reality that are encompassing us. As expressed in the review as per Hawkins the memory framework likewise adds a bunch of sense to extricate the examples of responsiveness like light, sound, contact and feel attributes as in machine terms referenced as sonar, radar and infrared.
- 5. Gaurav Kumar and Pradeep Kumar Bhatia (2014)**, concentrated on the effect of deftness on computerized reasoning in extraction and picture handling. This study sorts out the effect as for quality inside the medical services association, in light of the social and purposeful system that exists. This review is achieved by direct client contribution in the improvement process, little deliveries, regular cycle and fast emphases for testing the computerized reasoning arrangements at different medical services capabilities. To make more steady prerequisites as far a shortcoming identification, less lead times for testing, expansion in correspondence adoptability building nimble arrangements live up to the assumptions and capabilities in more proficient way while controlling and playing out the undertakings. This examination sorts out that taking on deft strategies being developed and conveyance of man-made consciousness based-arrangements will predict a positive effect on both the efficiency, nature of administrations furthermore, patient consideration. Subsequently forward the aftereffect of carrying out the man-made brainpower arrangements in the process from the finish of figuring out how to support is seen as acceptable.
- 6. David Devins and George Lodorfos (2016)**, analyzed centers around the viability of the innovation empowered medical care administration framework and reconsidered the viability of fake insight on understanding consideration' with saw administration. This study features on the requirement for administration framework plan fully supported by advances that deals with advanced and controlled help normalization process and to empower the bleeding edge biological system to perform successfully and proficiently with the outcomes on tolerant analyses and treatment. This review sorts out that man-made reasoning arrangements empowers to meet the patient experience and concentration on opportune consideration conveyance in light of the examples of information discernment covered with the assistance of patient's electronic wellbeing records.

- 7. Michael Matheny et al. (2020)**, led a concentrate on how computerized stage suppliers secure clients and potential objective market in the medical care area and its beginning phase of building the medical services environment effectively, utilizing man-made brainpower arrangements in learning wellbeing frameworks wit and taking into account the dangers, trust, commitments and publicity on the lookout for fake knowledge empowered arrangements sent in the clinical settings, grasping the potential outcomes in changing the medical services climate with the fitting counterfeit knowledge advancements, and understanding the reasonable difficulties in propelling the use of man-made reasoning. This paper plans to investigate the issue through contextual analysis techniques to send the computerized administration that record fields and characterizes the purpose for the dynamic market regions to tackle the two-sided market issues. The review directed likewise investigation the experimental nature of the favored client bunches on towards the upgrade of counterfeit knowledge arrangements and ease of use rates in the medical services by taking on a broad review study from an exploration information base and the investigation discovered that the standard web client ways of behaving arthe fundamental part of the development and utilization of organization and client connections that are more essential to current site client content.
- 8. Guoguang Rong et al. (2020)**, led a concentrate on medical care venture man-made reasoning benefits and uncovered that how specialist organizations are coordinating different arrangements of related and man-made reasoning empowered arrangements as well as instruments and frameworks inside the setting of medical care administration conveyance. The discoveries were on how man-made consciousness converges with Mechanization and Analytics. It reports that man-made consciousness empowered administrations in medical services is among of the quickest developing business sections, appearing (HFSS) income figures of \$1.6 billion of every 2018. Calculates that blast of man-made reasoning new businesses is coming about in association biological systems with the corporate emergency clinics for creating man-made reasoning empowered arrangements. Significant finding of this study came about another review's report imagining on condition of mechanization in 2017 attempted by them expressed that patient assistance showing 46% and electronic wellbeing record taking care of demonstrating 41% as the primary cycles for which counterfeit insight has been conveyed. This study prescribed towards specialist organizations to contribute in directing clients around business issues and uses cases, drive man-made reasoning as an establishment layer across the medical services area, investigate the industrialization of information science, rethink accomplice biological system for fostering the man-made reasoning arrangements.
- 9. Jatinder Bali and Rohit Garg (2019)**, depicted applying man-made consciousness rehearses with lean standards in medical services and biomedical exploration where shrewd frameworks will make solid computational system to deal with the progression of medical services exercises alongside esteem creation, It helps in building the scholarly frameworks arrangements customized for explicit activities finding different guides to improve the medical services administration and patient consideration quality what's more, make serious areas of strength for an administration framework that will follow along on reliable patient wellbeing and clinical records. And furthermore, material to create, plan and convey new encounters which will have an enormous shift ever from time to time. In medical services application change idea of lean standards are to be taken



on by the medical services associations to have a long run estimating upper hand and make easy human exercises

## **V. RESEARCH METHODOLOGY**

This piece of the examination paper will talk about and make sense of the different exploration strategies utilized and how they were carried out and used such that helped us in noting our research question. The strategy for research utilized in this paper was a current one where scholarly exploration was directed in regards to AI supplanting specialists in the healthcare business. Both subjective and quantitative exploration has been led as we utilized the two insights and words to support our discoveries. The technique for procuring and tracking down information to help our discoveries was to search for scholastic sources on sites like Google Scholar and World cat, from that point onward, the assets assembled were broke down to check whether they can be utilized to help our discoveries or to add worth to our examination paper. Both essential sources and auxiliary sources were utilized in this paper, the optional sources were the scholarly examination directed about the point and the essential source was a study of 6 inquiries that reviewed 100 specialists in the UAE asking them inquiries about AI being carried out in their field, as examined prior. The inquiries posed to in the overview will be expressed alongside their responses in additional detail in the examination segment. We included both short response questions and rating inquiries in our study to get both subjective and quantitative exploration material. We attempted to exclude many inquiries in the overview to oblige the bustling timetable of specialists in the UAE, the more inquiries we have, the less certified answers we can get. The study results will be utilized in the examination paper to show how much and how much AI has been carried out in aiding specialists in their positions, and to show whether the execution of AI is really useful for specialists or whether it is making their lives harder.

- 1. Sample Size – 100**
- 2. Test - SPSS**
- 3. Tools - Correlation**

## **VI. DATA ANALYSIS**

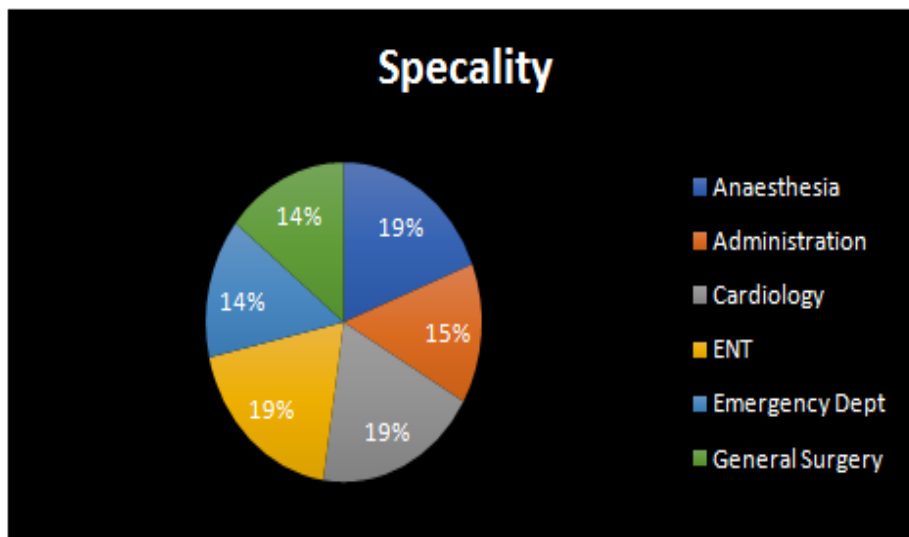
As you definitely know at this point, we had led an overview with a rundown of 6 questions shipped off specialists to figure out the effect that Artificial Intelligence has on the healthcare business. We first started by getting some information about their Specialty. This was significant on the grounds that this would give us knowledge into whether there was a particular office in healthcare that was ahead when it came to reception of Artificial Intelligence.

The accompanying pictures are the consequences of the study alongside the inquiry proclamations:

**Q 1** what is Speciality?

**Table 1: Specialty**

Variable	Frequency
Anaesthesia	20
Administration	30
Cardiology	10
ENT	20
Emergency Dept	10
General Surgery	10

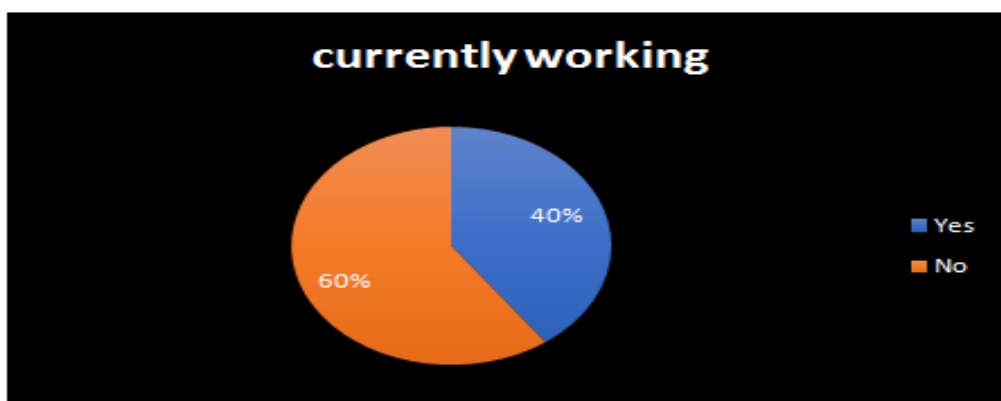


**Figure 1: Specialty**

**Q 2** Are you currently working with Artificial Intelligence (AI) at your Workplace?

**Table 2: currently working with Artificial Intelligence**

Yes	No
40	60

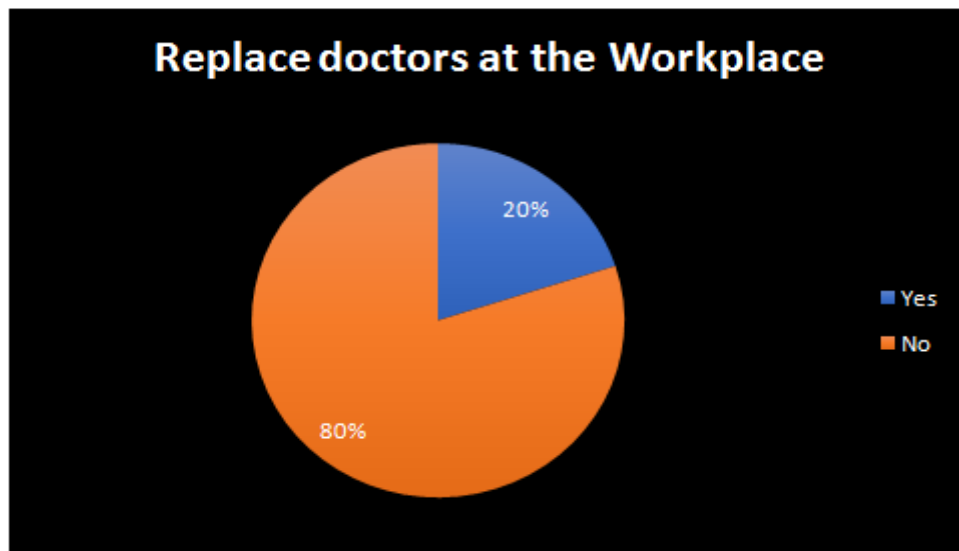


**Figure 2: currently working with Artificial Intelligence**

**Q 3** Do you Think AI will replace doctors at the Workplace?

**Table 3: AI will replace doctors at the Workplace**

Yes	No
20	80

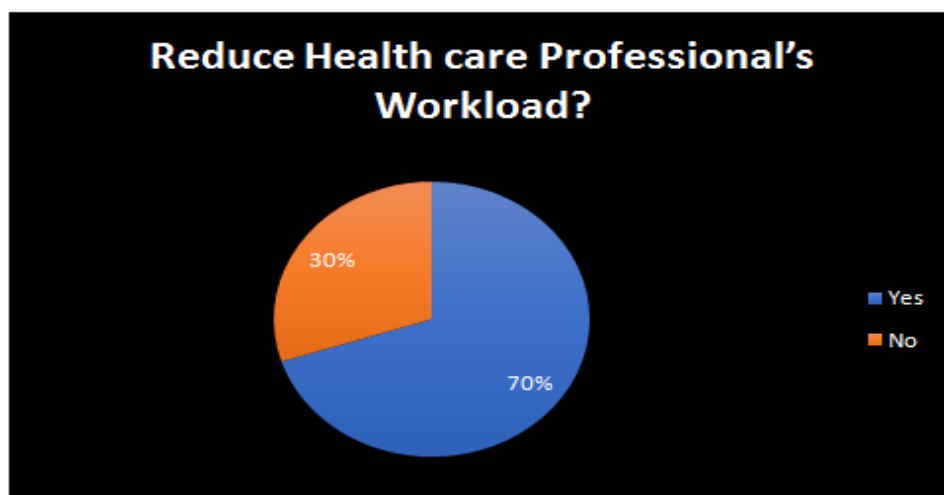


**Figure: 3 AI will replace doctors at the Workplace**

**Q4** Can AI help Reduce Health care Professional's Workload?

**Table 4 : Help Reduce Health care Professional's Workload**

Yes	No
70	30

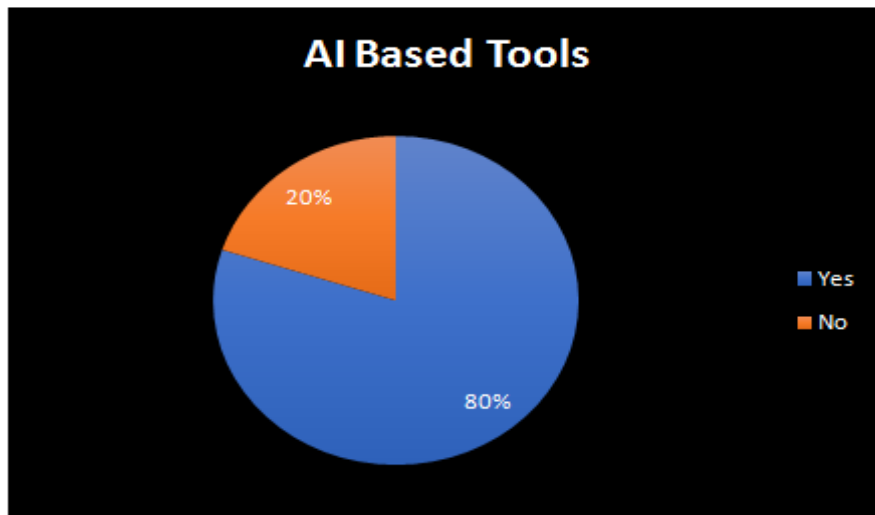


**Figure 4: Help Reduce Health care Professional's Workload**

**Q5** Using AI Based Tools for healthcare purpose is something I would consider?

**Table 5: AI Based Tools for healthcare purpose is something I would consider**

Yes	No
80	20



**Figure 5: AI Based Tools for healthcare purpose is something I would consider**

## VII. RESULT AND DISCUSSION

As talked about in the past segment, among specialists, radiologists have the most elevated openness to AI and this is likewise affirmed by a paper named: overview of Artificial Intelligence in Medication. This article further talks about the progresses made lately in Artificial Intelligence in the clinical field. Another article reviewed healthcare experts remembering specialists and medical caretakers for the benefits of AI that included question articulations like "Artificial intelligence can accelerate the cycle in healthcare?" and "Man-made intelligence can help diminish the quantity of mistakes?", larger part of the respondents concurred with the assertion The reaction for a comparative inquiry presented in our review likewise gave a comparative outcome with almost half of the respondents being supportive of the assertion "Man-made intelligence can give more precise and quicker reaction in determination" with the rest being unsure or against it.

We have arrived at our decision; our discoveries are the accompanying:

1. Healthcare AI in UAE is fundamentally spread in the specialization of radiology.
  - 62% of specialists in the UAE are not involving AI in their working environment.
  - 65% of specialists in the UAE accept that AI in the healthcare business gives a quicker and that's just the beginning precise reaction in conclusion.
  - 80% of specialists in the UAE concur that AI wouldn't supplant specialists in the healthcare business.
  - 80% of specialists in the UAE believe that AI would help in decreasing the responsibility on specialists.

We can recognize that Artificial Intelligence is invited by UAE specialists in the field. Specialists are persuaded by its significance and help with the healthcare business; be that as it may, it couldn't supplant their significant presence and obligations.

## VIII. LIMITATIONS

Taking note of a couple of limits of this study is significant. One constraint being that our example has a somewhat little example size of 100 and in this manner, it was hard to decide measurable importance in reactions and the distinctions between them, particularly between callings. The reason the example was made little is with the goal that we can urge members to take the overview and not cloud the reactions. Furthermore, there is additionally the issue of determination predisposition, as certain respondents may have been simply intrigued by AI and in this manner gave a positive reaction to their biased ideas of AI. Finally, our study members were from numerous strengths instead of one. A not many examinations in the past have zeroed in exclusively on radiology experts since this field is most high level in AI reception.

## IX. CONCLUSION

The commitment of AI in medical care industry is proven in this writing. Artificial intelligence is a route to turn out to be more helpful at many levels, which leads to better and quicker persistent results. Artificial intelligence, AI, profound learning can assist us with legitimate consideration in helping medical procedures, diagnosing infections like disease at beginning phases and so on. A variable that should be thought of while doing explore on AI is additionally referenced in this paper. We mean to advance and foster this subject with a more confounded, modern, and high level subject to be concentrated on from now on. It is to check the degree that can be reached by artificial intelligence in the healthcare business and give exact and exact outcomes. This subject would persuade the head of divisions in clinics or clinical focuses by real and useful results of looking at the productivity among AI and specialists in tasks. As AI rises out of exploration labs and trial and error to execution and spreads into the standard and as people and machines team up more intently, the groundbreaking prospects of AI for rising above the medical care industry will become gigantic.

## REFERENCES

- [1] Rapaport, W. J. (2020). What is artificial intelligence? *Journal of Artificial General Intelligence*, 11(2), 52-56.
- [2] Makridakis, S. (2017). The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms. *Futures*, 90, 46-60.
- [3] Helbing, D., Frey, B. S., Gigerenzer, G., Hafen, E., Hagner, M., Hofstetter, Y., ... & Zwitter, A. (2019). Will democracy survive big data and artificial intelligence? In *Towards digital enlightenment* (pp. 73-98). Springer, Cham.
- [4] Andresen, S. L. (2002). John McCarthy: father of AI. *IEEE Intelligent Systems*, 17(5), 84-85.
- [5] Rajaraman, V. (2014). JohnMcCarthy—Father of artificial intelligence. *Resonance*, 19(3), 198-207.
- [6] Koch, M. (2018). Artificial intelligence is becoming natural. *Cell*, 173(3), 533.
- [7] Szolovits, P. (2019). Artificial intelligence and medicine. In *Artificial intelligence in medicine* (pp. 1-19). Routledge.

- [8] Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., ... & Wang, Y. (2017). Artificial intelligence in healthcare: past, present and future. *Stroke and vascular neurology*, 2(4).
- [9] Vaishya, R., Javaid, M., Khan, I. H., & Haleem, A. (2020). Artificial Intelligence (AI) applications for COVID-19 pandemic. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(4), 337-339.
- [10] McCall, B. (2020). COVID-19 and artificial intelligence: protecting health-care workers and curbing the spread. *The Lancet Digital Health*, 2(4), e166-e167.
- [11] Burton, R. J., Albur, M., Eberl, M., & Cuff, S. M. (2019). Using artificial intelligence to reduce diagnostic workload without compromising detection of urinary tract infections. *BMC medical informatics and decision making*, 19(1), 1-11.
- [12] Manne, R., & Kantheti, S. C. (2021). Application of artificial intelligence in healthcare: chances and challenges. *Current Journal of Applied Science and Technology*, 40(6), 78-89.
- [13] Cho B-J, Choi YJ, Lee M-J, Kim JH, Son G-H, Park S-H, et al. Classification of cervical neoplasms on colposcopic photography using deep learning. *Sci Rep*. 2020;10(1):13652.
- [14] Doyle OM, Leavitt N, Rigg JA. Finding undiagnosed patients with hepatitis C infection: an application of artificial intelligence to patient claims data. *Sci Rep*. 2020;10(1):10521.
- [15] Eren A, Subasi A, Coskun O. A decision support system for telemedicine through the mobile telecommunications platform. *Journal of Medical Systems*. (February 2008;32(1):31–5.
- [16] Erguzel TT, Ozekes S. Artificial intelligence approaches in psychiatric disorders. *The Journal of Neurobehavioral Studies*. 2014;1:52-53.
- [17] Hamid S. The opportunities and risks of artificial intelligence in medicine and healthcare [Internet]. 2016 [cited 2020 May 29]. [http://www.cuspe.org/wp-content/uploads/2016/09/Hamid\\_2016.pdf](http://www.cuspe.org/wp-content/uploads/2016/09/Hamid_2016.pdf)
- [18] Jiang F, Jiang Y, Zhi H, Dong Y, Li H, Ma S, Wang Y, Dong Q, Shen H, Wang Y. Artificial intelligence in healthcare: past, present and future. *Stroke and Vascular Neurology*. 2017;2(4):230–243. DOI:<https://doi.org/10.1136/svn-2017-000101>
- [19] Lee SI, Celik S, Logsdon BA, Lundberg SM, Martins TJ, Oehler VG, Estey EH, Miller CP, Chien S, Dai J, Saxena A, Blau CA, Becker PS. machine learning approach to integrate big data for precision medicine in acute myeloid leukemia. *Nat Commun*. 2018 Jan 3; 9(1):42.
- [20] Meskò B, Drobni Z, Bényei E, Gergely B, Gyorffy Z. Digital health is a cultural transformation of traditional healthcare. *Mhealth*. 2017;3:38.
- [21] Minsky M. Steps toward artificial intelligence. *Proc IRE*. 1961;49(1):8-30. CrossRef 10. Weng J, McClelland J, Pentland A, Sporns O, Stockman I, Sur M, et al. Autonomous mental development by Robots and Animals *Science*. 2001;291(5504):599- 600
- [22] Panch T, Szolovits P, Atun R. Artificial intelligence, machine learning and health systems. *J Glob Health*. 2018;8(2):020303.
- [23] Pisarchik AN, Maksimenko VA, Hramov AE. From Novel technology to novel applications: Comment on "An Integrated Brain-Machine Interface Platform With Thousands of Channels" by Elon Musk and Neuralink. *Journal of Medical Internet Research*. October 2019;21(10).
- [24] Ravi Manne. Machine learning techniques in drug discovery and development. *International Journal of Applied Research*. 2021;7(4):21-28.
- [25] Salman M, Ahmed AW, Khan A, Raza B, Latif K. Artificial intelligence in biomedical domain an overview of ai based innovations in medical. *Int J Adv Comput Sci Appl*. 2017;8:319-27.
- [26] Shortliffe EH, Sepúlveda MJ. Clinical decision support in the era of artificial intelligence. *JAMA*. 2018;320(21):2199–200.
- [27] Tagliaferri SD, Angelova M, Zhao X, Owen PJ, Miller CT, Wilkin T, et al. Artificial intelligence to improve back pain outcomes and lessons learnt from clinical classification approaches: three systematic reviews. *NPJ Digit Med*. 2020;3(1):1–16
- [28] Tran BX, Vu GT, Ha GH, Vuong Q-H, Ho M-T, Vuong T-T, et al. Global evolution of research in artificial intelligence in health and medicine: a bibliometric study. *J Clin Med*. 2019;8(3):360.
- [29] Yang X, Wang Y, Byrne R, Schneider G, Yang S. Concepts of artificial intelligence for computer-assisted drug discovery | chemical reviews. *Chem Rev*. 2019;119(18):10520–94.