International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

AI in Indian Healthcare: A Study of Efficacy, Ethical Considerations, and Educational Advancement

Aslin Shini. S

BBA.L.L.B.(hons), Saveetha School of Law, Saveetha Institute of Medical and Technical Sciences (SIMATS),

ABSTRACT:
AI acts as a transformative force that modern healthcare requires because it revolutionizes medical diagnosis and treatment delivery and patient care management in this era of technological development. The analysis establishes a detailed investigation of the key position of AI in healthcare through studies of various medical applications and effects on medical results while analyzing modern healthcare service advancements under AI domination. Empirical research methodology serves as the research approach used in this study. This paper analyzes how Artificial Intelligence applications affect medical care practices in India through detailed research. This includes understanding the scope of AI's impact on diagnostics, treatment strategies, patient care, and overall healthcare management. The findings of the research shows that the AI applications can significantly improve diagnostic accuracy, leading to early detection of diseases and better patient outcomes.AI-driven telemedicine solutions may enhance remote patient monitoring, diagnostic consultations, and accessibility to healthcare services, particularly in diverse and remote regions. In conclusion, the integration of Artificial Intelligence into the medical sector in India holds immense promise for revolutionizing healthcare practices. The partnership between healthcare professionals and technology remains essential to achieve the maximum potential of AI which will improve patient care and build a more effective healthcare system accessible to all people in India.

KEYWORDS: Artificial Intelligence (AI), Telemedicine, Innovation, Telehealth.

INTRODUCTION:

Medical applications of Artificial Intelligence went through significant advancement. The first AI applications performed basic recognition work for images which assisted medical diagnosis systems. Research progress allowed scientists to create customized treatment regimens while making use of large healthcare datasets for individualized medical care. Telemedicine stands as one of the evolutionary medical inventions which provides remote access to healthcare. Parents face data privacy concerns yet ongoing evolution enables collaborative healthcare-technology alliances which will elevate medical practices in India for the future.

Government initiatives in India create new Artificial Intelligence integrations with the medical sector which leads to advances in technology while bettering healthcare delivery through three main initiatives. Interoperability increases together with capability to develop AI applications which generate better health results. National Digital Health Mission (NDHM) strives to establish a digital health environment through

which AI technologies would enhance efficient healthcare data management as well as patient record maintenance and health analytics capabilities. These elements determine both how healthcare providers use and how AI technologies affect patient healthcare because they define medical regulations.

Healthcare professionals require proper training because it ensures their preparedness to operate and understand AI tools in medical practice. Education initiatives and training programs help healthcare professionals to accept and make effective use of AI applications. The ability of patients to accept and trust AI healthcare applications depends on their understanding of this technological process as well as their attitude toward its medical use. The implementation cost of AI technology as well as healthcare institution resource availability establishes key adoption criteria for AI solutions.

Telemedicine and Remote Monitoring simplify patient consultations through AI-powered diagnostic tools which healthcare providers operate remotely from their patients' locations. The pharmaceutical industry benefits from AI algorithms which both quicken drug discovery research and design better clinical trials and predict possible drug candidates.

AI-powered chatbots together with Virtual Health Assistants help patients by giving information and appointment scheduling and basic medical assistance to increase patient interaction. AI-powered robotic surgery systems now enhance precision while performing minimally invasive procedures to deliver better surgical outcomes. Healthcare applications of AI in the U.S. lead the world since the nation successfully implements AI solutions primarily for diagnostic services alongside customized medicine programs and prognostic analytical tools.

Artificial Intelligence startups partner with healthcare institutions and tech giants to develop their business operations. The implementation of AI in healthcare throughout China includes efforts to develop AI diagnostic capabilities along with discoveries of new drugs and implementation of AI within the national medical system. The Canadian government promotes AI implementation for medical imaging as well as precision medicine and data-based clinical choices. Healthcare providers together with research institutions work jointly on AI projects. The South Korean government directs its efforts toward implementing AI in preventive healthcare together with disease prediction services and robotics surgery operations. The current government system backs public initiatives that encourage the adoption of AI technology in healthcare services.

OBJECTIVES:

- To analyze the multifaceted role of Artificial Intelligence in the medical sector.
- To analyze the potential negative impacts of AI in the medical sector.
- To examine the positive impacts of AI in the medical sector.
- To analyze the effectiveness of AI-powered telemedicine platforms in expanding healthcare access for individuals in remote and underserved areas.
- To analyze the educational benefits of AI-powered tools for medical students and professionals.

REVIEW OF LITERATURE:

Ravi, K., Verma. (2023) A few critical jobs of artificial intelligence in medical care: Clinical Imaging and Diagnostics Man-made intelligence calculations can examine clinical pictures, for example, X-beams, CT outputs, and X-rays to aid the recognition and finding of illnesses as mentioned in this paper . Artificial intelligence plays a significant role in the healthcare sector. **Lipsa, Dash. (2023)**. The paper discusses the use of artificial intelligence in the healthcare sector. - It highlights the benefits of AI in providing access

to new diagnostics, treatments, and outcomes. In this paper , algorithms are outperforming almost all the traditional training algorithms by letting the human's access unprecedented information about new diagnostics, nourishment techniques, various treatments and the outcomes. **Cheng, Yu. (2022)** In this paper , the authors discuss different aspects of AI in healthcare like capabilities, challenges and what values it brings to the table, indicating that the AI is a reflexive field and can adopt with different situations and new cases easily, also making it available for everyone, anywhere, anytime. The paper discusses the capabilities, challenges, and values of AI in healthcare. AI in healthcare brings real-world solutions through technical capabilities in various areas. **Nimishamba (2022)** The emergence of artificial intelligence (AI) has provided many opportunities for improvements in healthcare and major criticisms of using AI and robots in healthcare as discussed by the authors, which involves major claims and developments.AI has provided opportunities for improvements in healthcare. AI can detect, diagnose, and cure a wide range of diseases. **R, Jaichandran.(2022)** In this article , the authors have done deep research regarding the role of automated beds in reducing pressure ulcers or bed sores among patients who are recovering from any chronic disease and provided a detailed data analysis with relevant equations and tables for reaching its proposed outcomes.AI and IoT have revolutionized the healthcare sector. This study focuses on the role of AI and robotics in patient treatment outcomes. **Jhumpa, Sarma. (2021)** Artificial intelligence can significantly reduce drug development time and costs. Different artificial intelligence techniques have been used in clinical practice. The different artificial intelligence techniques are discussed and a perspective on the benefits, future opportunities and risks of established artificial intelligence applications in clinical practice in medical education, physicians, healthcare institutions and bioethics is provided. **Sampurna, Guha. (2021).** The study recommends the use of Artificial Intelligence in healthcare services in both rural and urban areas to reduce the burden on medical professionals, increase personalized and efficient healthcare service provision especially in times of global pandemic and increase people's consciousness towards the need for good health through the adoption of positive lifestyle changes. The paper discusses the potential of Artificial Intelligence (AI) in improving healthcare services in India, including appointment booking, diagnosis, surgeries, and mentoring services. **Sandeep (2021)** AI in healthcare has potential for improved diagnosis and treatment. Funding and support for AI in healthcare research and development is increasing. In this special edition, researchers and clinicians from across the world outline the scale of the use of AI in various contexts and key issues to consider in implementing AI in healthcare strategies. **S., Shyni (2021)** Artificial intelligence (AI) in health-care is an emerging trend identified as a collection of technologies, programmed to sense, comprehend, act, and learn as mentioned in this paper, and its performance is appreciated for the administrative and clinical healthcare functions and also for research and training purposes.AI in healthcare improves effectiveness, value, cost, and reach. **Lushun (2021)** In this paper, the authors analyzed the existing problems in the field of artificial intelligence and proposed possible solutions to solve them and called for the establishment of a process framework to ensure the safety and orderly development of Artificial Intelligence in the medical industry. **Ivana, Ognjanovic. (2020)** Artificial intelligence when applied in health care resulted in intelligent support to decision-making, optimized business processes, increased quality, monitoring and delivering of personalized treatment plans and many other applications.AI in healthcare has resulted in intelligent decision-making support, optimized processes, and personalized treatment plans. There are still challenges in automation, data protection, and waste reduction. **Yamini (2021)** This review will discuss how AI and machine learning can save the life of someone and is also a guide for healthcare professionals to see how, when, and where AI can be more efficient and have the desired outcomes. It also discusses about the

Artificial Intelligence (AI) in healthcare and AI applications in critical diseases and patient care. **Yuri, Yin-Moe (2021)** In this paper, the authors reviewed AI's present applications in healthcare, including its benefits, limitations and future scope, and found that AI can transform physician workflow and patient care through its applications from assisting physicians and replacing administrative tasks to augmenting medical knowledge.AI has the potential to transform healthcare. **Subhashree (2021)** In this article, the importance of AI in the field of healthcare management is shown and discussion of several works published in different areas of medicine based on AI during the past few years is carried out briefly. Entrepreneurs offer smart AI solutions for healthcare management. AI helps in accurate prediction and diagnosis of health conditions. **Ganesh (2021)** In this article, the authors reviewed the applications, ethical issues in the application of AI to Healthcare and concluded about the different AI frameworks and concluded that significant illness areas by making use of AI techniques incorporate cardiology, cancer, neurology, and then they review the applications.AI techniques have strong relevance to the healthcare field. AI in healthcare will not replace humans for a wide range of medical tasks for many years. **Akshara (2021)** This review has shed light on the present usage of AI in the healthcare sector, such as its working, and the way this system is being implemented in different domains, such as drug discovery, diagnosis of diseases, clinical trials, remote patient monitoring, and nanotechnology. AI is being implemented in various healthcare domains. The paper discusses the merits and disadvantages of AI. **Darsh (2020)** AI is being used in medicine and healthcare.AI algorithms are being used to detect various diseases. The goal is to highlight numerous algorithms based on the techniques which rely on artificially intelligent behavior for detecting many diseases, and results for the same for the diseases included in the categories as mentioned above. **Zahra (2019)** AI has a potential role in healthcare in low resource settings. AI can reduce health inequity and improve healthcare services. There is limited literature available on its use in low resource settings, and AI has penetrated the healthcare domain rapidly in high income settings where an estimated USD 150 million could be saved with such applications in the next 5 years. **Abid (2019)** AI is being used in the medical field for various applications. AI helps in improving patient outcomes and decision-making. Ten primary applications of AI in the medical field are identified, along with a brief description, that help to guide the surgeon during medication, treatment and operation and to track, detect, investigate and control the infection in the hospital. **Mohamed (2019)** AI in healthcare shows higher accuracy in diagnosis and risk prediction compared to human approaches. AI implementation in healthcare faces regulatory and data challenges. As per the survey, AI results in higher accuracy of diagnosis and risk prediction compared to human approaches and despite such success and promising future, AI faces regulatory and data related challenges. Thus the paper reviews the application of artificial intelligence technology in healthcare. It discusses the use of machine learning algorithms in medical research.

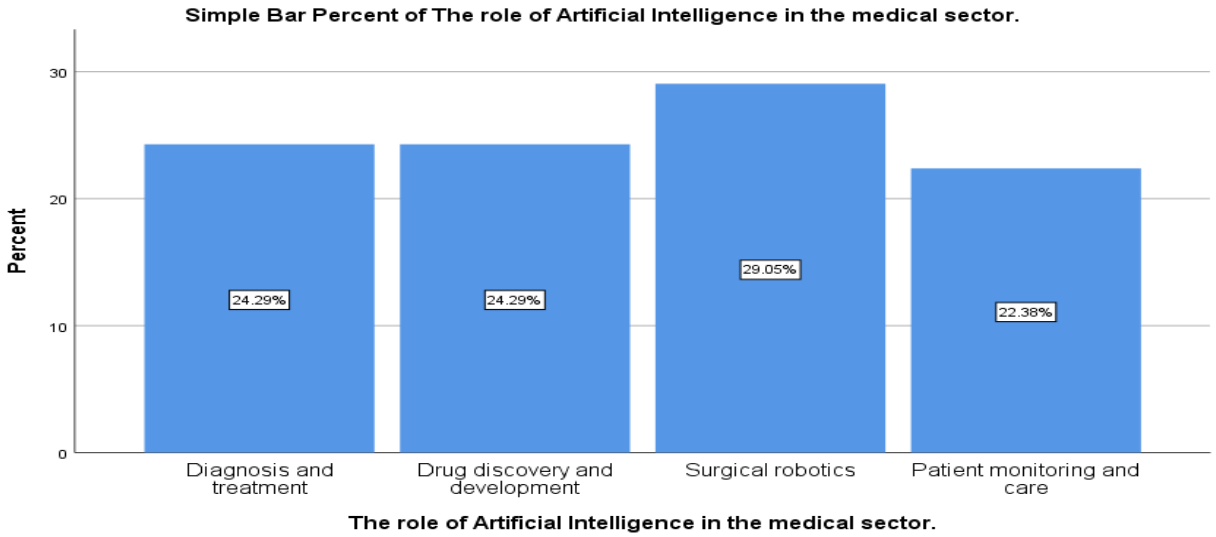
METHODOLOGY:

The study deals with empirical research. The statistical tool followed here is graphical representation and charts. Convenient sampling method was used for the purpose of this study. 210 samples were collected for this study. The responses were collected in the places over Chennai. The independent variables are Gender, Age, Occupation, Educational Qualification, Place of living of the respondents. The dependent variables are the role of Artificial Intelligence in the medical sector. The negative impact of AI in Medical sector. The positive impact of AI in Medical sector. AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas. AI-powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical adv-

ances.

ANALYSIS:

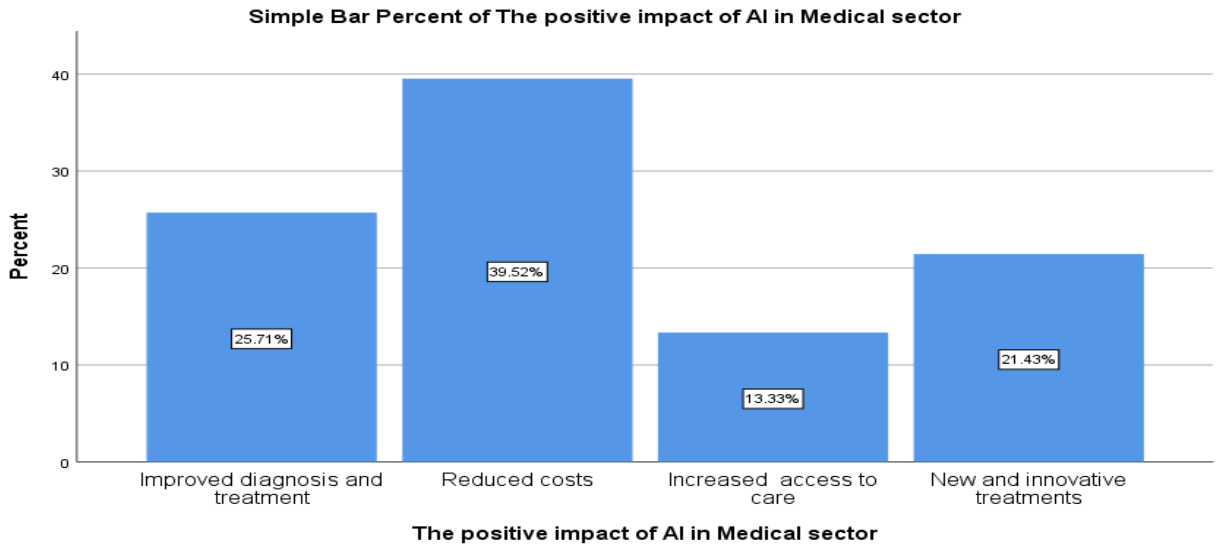
FIGURE: 1



LEGEND:

Figure 1 shows the role of Artificial intelligence in the medical sector.

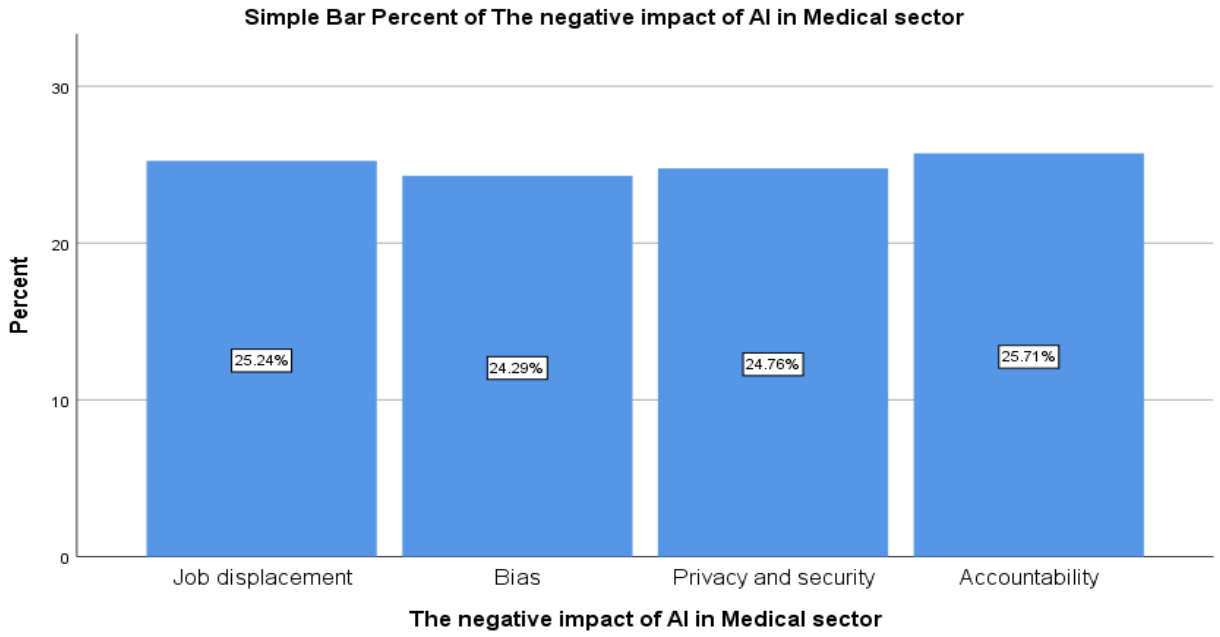
FIGURE: 2



LEGEND:

Figure 2 shows the positive impacts of AI in the medical sector.

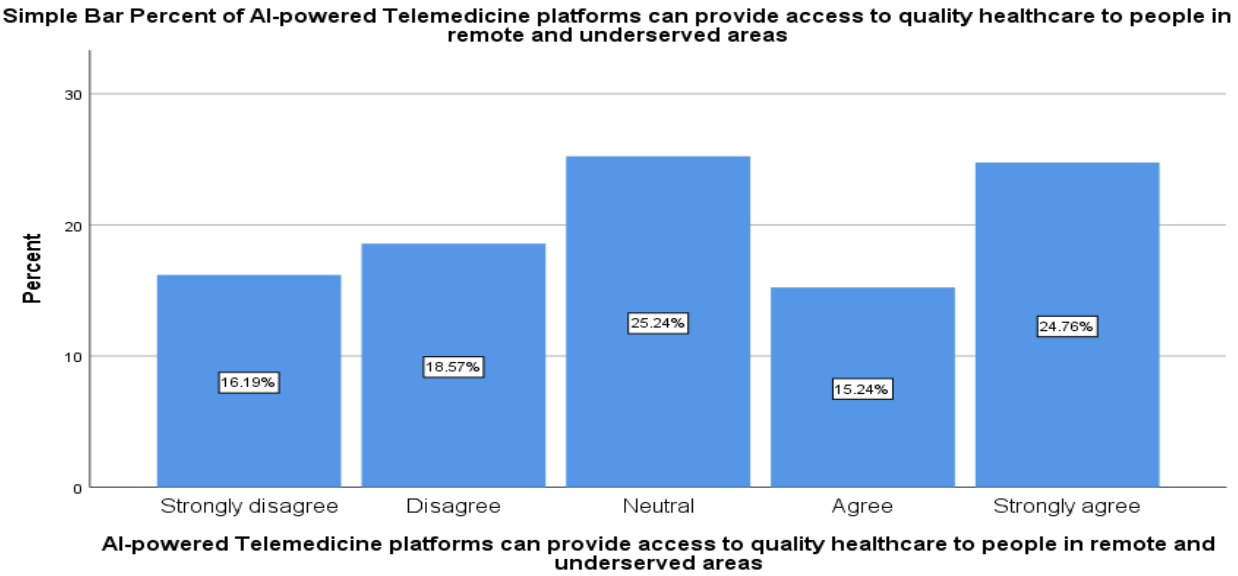
FIGURE: 3



LEGEND:

Figure 3 shows the negative impact of AI in the medical sector.

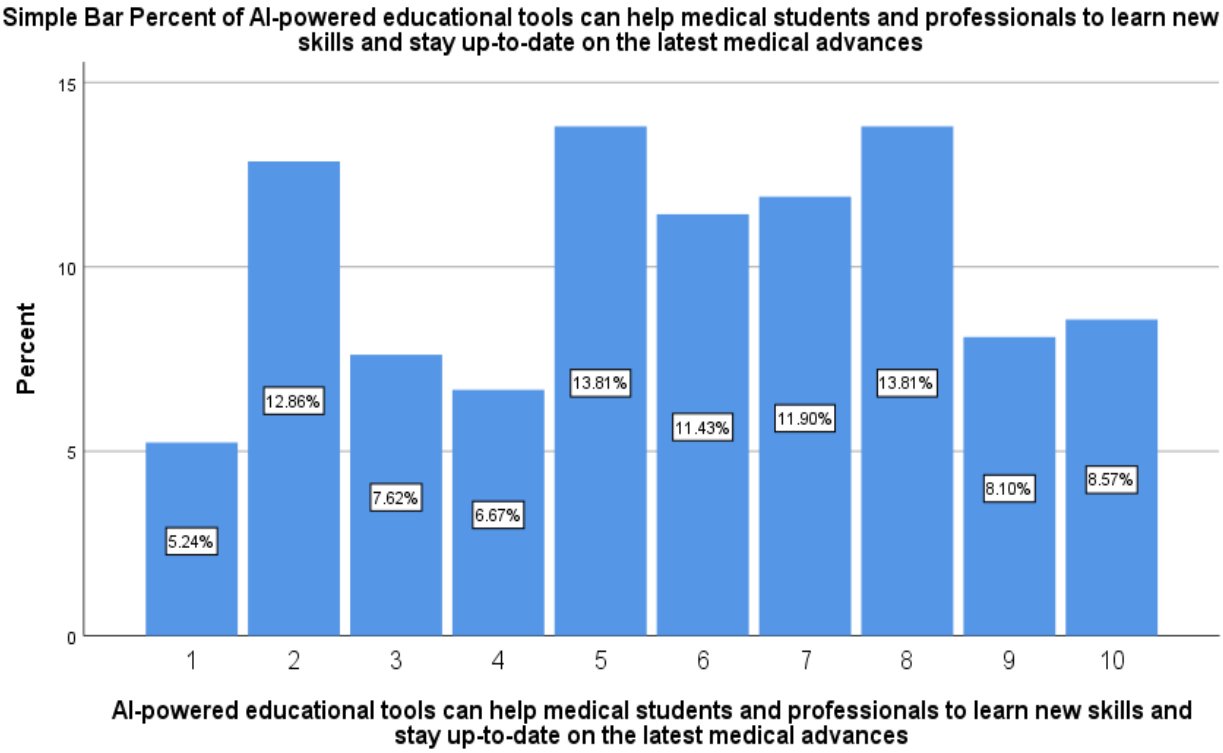
FIGURE: 4



LEGEND:

Figure 4 shows the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas.

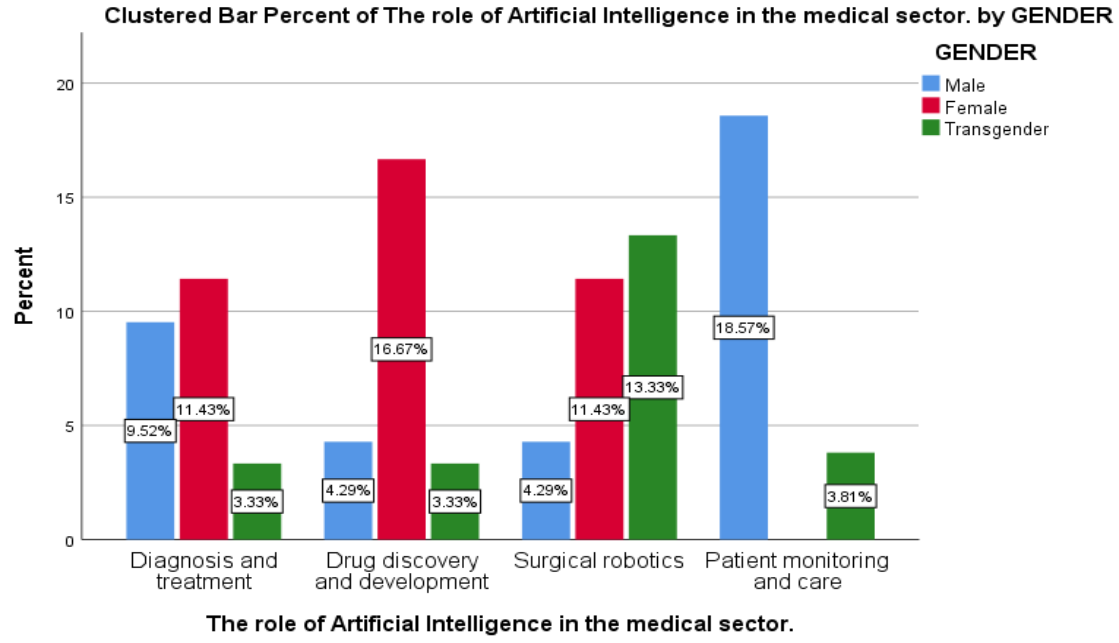
FIGURE: 5



LEGEND:

Figure 5 shows the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances.

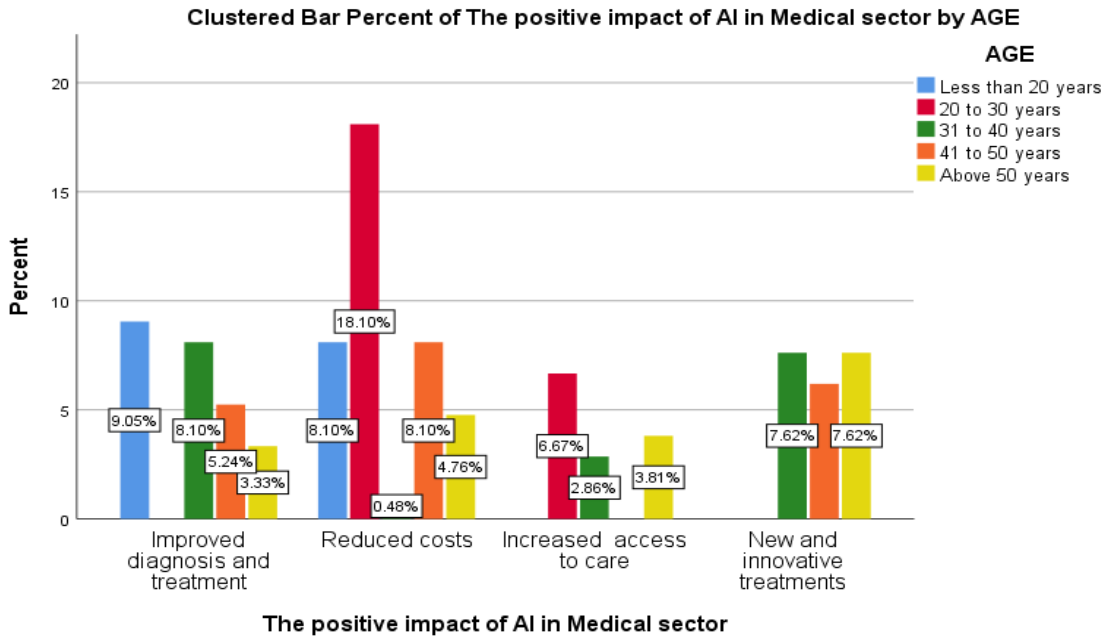
FIGURE: 6



LEGEND:

Figure 6 shows the role of Artificial intelligence in the medical sector with the influence of gender of the respondents.

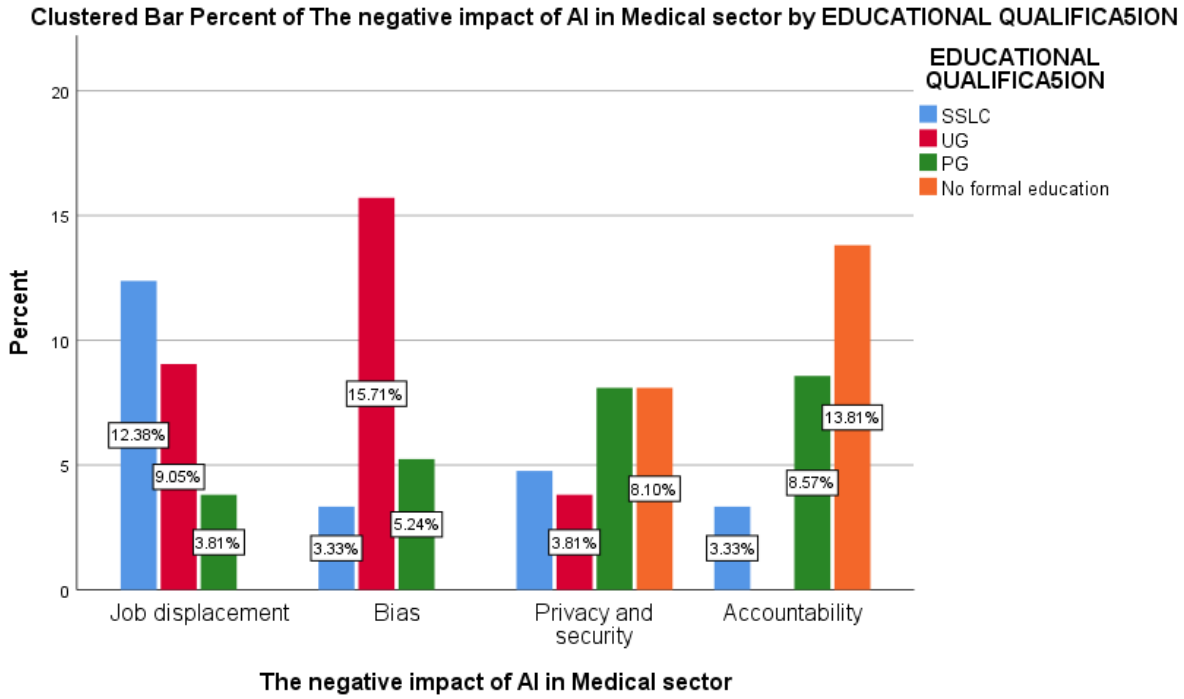
FIGURE: 7



LEGEND:

Figure 7 shows the positive impact of AI in the medical sector with the age group of the respondents.

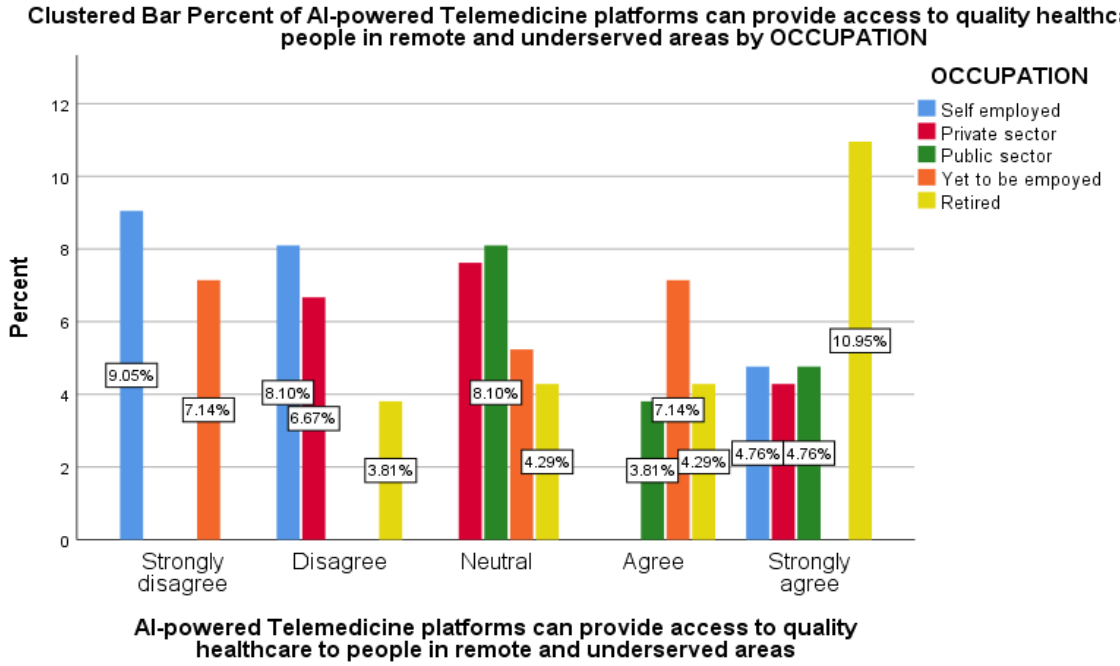
FIGURE: 8



LEGEND:

Figure 8 shows the negative impact of AI in the medical sector with the influence of educational qualification of the respondents.

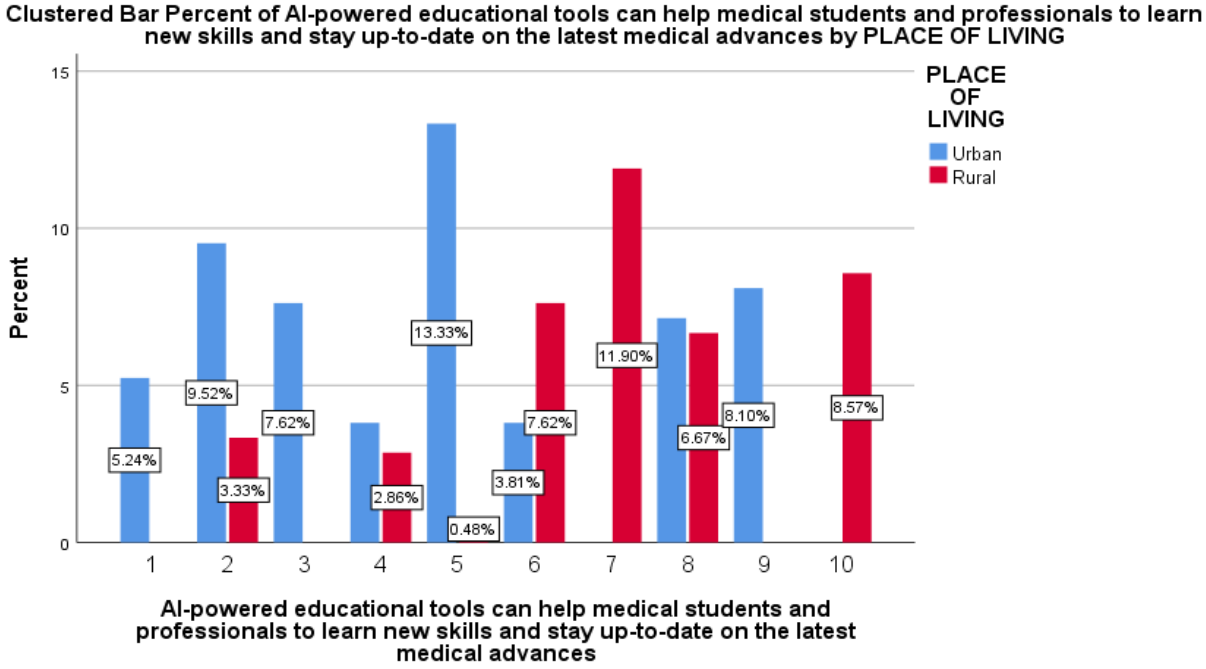
FIGURE: 9



LEGEND:

Figure 9 shows the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas with the influence of occupation of the respondents.

FIGURE: 10



LEGEND:

Figure 10 shows that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances with the influence of place of living of the respondents.

CHI-SQUARE ANALYSIS:

Hypothesis:

Null Hypothesis: There is no association between AI-powered telemedicine platforms that can provide access to quality healthcare to people in remote and underserved areas and place of living of the respondents.

Alternate Hypothesis: There is association between AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas and place of living of the respondents.

AI-powered Telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas * PLACE OF LIVING Crosstabulation

Count

		PLACE OF LIVING		
		Urban	Rural	Total
AI-powered Telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas	Strongly disagree	27	7	34
	Disagree	17	22	39
	Neutral	53	0	53
	Agree	9	23	32
	Strongly agree	17	35	52
Total		123	87	210

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	73.758[a]	4	.000
Likelihood Ratio	93.172	4	.000
Linear-by-Linear Association	20.195	1	.000
N of Valid Cases	210		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.26.

INTERPRETATION:

The calculated p value is 0.000. Since the p value < 0.05. Null Hypothesis is rejected. Therefore, there is an association between AI-powered telemedicine platforms that can provide access to quality healthcare to people in remote and underserved areas and place of living of the respondents.

RESULTS:

Figure 1 states that 29.05% of the respondents responded to surgical robotics and 24.29% of the respondents responded to diagnosis and treatment and drug discovery and development as the role of Artificial intelligence in the medical sector. **Figure 2** shows that 39.52% of the respondents responded to reduced costs as the positive impact of AI in the medical sector and 25.71% of the respondents responded to improved diagnosis and treatment as the positive impacts of AI in the medical sector. **Figure 3** shows that 25.71% of the respondents responded to accountability as the negative impact of AI in the medical sector and 25.24% of the respondents responded to Job displacement as the negative impact of AI in the medical sector. **Figure 4** shows that 25.24% of the respondents neutrally agreed with the statement and

24.76% of the respondents strongly agreed with the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas. **Figure 5** shows that 13.81% of the respondents neutrally agreed with the statement and 12.86% of the respondents disagreed with the statement AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances. **Figure 6** shows that 18.57% of the male respondents responded to patient monitoring and care and 16.67% of the female respondents responded to drug discovery and development and 13.33% of the transgender respondents responded to surgical robotics as the role of Artificial intelligence in the medical sector. **Figure 7** shows that 18.10% of the respondents in the age group of 20 to 30 years responded to reduced costs as the positive impact of AI in the medical sector and 8.10% of the respondents in the age group of 31 to 40 years responded to improved diagnosis and treatment as the positive impact of AI in the medical sector. **Figure 8** shows that 15.71% of the UG respondents responded to bias as the negative impact of AI in the medical sector and 13.81% of the respondents with no formal education responded to accountability as the negative impact of AI in the medical sector. **Figure 9** shows that 10.95% of the retired respondents strongly agreed with the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas and 9.05% of the self- employed respondents disagreed with the statement. **Figure 10** shows that 13.33% of the urban people neutrally agreed with the statement and. 11.90% of the respondents in the rural areas agreed with the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances.

DISCUSSION:

Figure 1 illustrates that surgical robotics received the highest responses for artificial intelligence's medical functions because the AI-powered robotic systems improve surgical accuracy while carrying out automated medical procedures which leads to better treatment results. Real-time surgical data processing through AI enables surgeons to receive beneficial decision-making support in their complex procedures. The respondents mentioned medical image assessment by AI algorithms to detect and diagnose medical conditions with accuracy as the central functions of Artificial intelligence in the medical field. Through biological data analysis AI systems help identify prospective drug targets which speeds up the beginning of drug discovery procedures. Most medical professionals in Figure 2 identified reduced costs as AI's main medical sector benefit because its systems automate processes to cut administrative expenses and operational costs (**see Figure 2**). According to research findings better medical diagnosis tools and treatment options emerged as the positive effects of AI in healthcare since these AI diagnostic systems improve medical diagnosis precision and eliminate superfluous medical tests and their related expenses because of wrong diagnoses. **Figure 3** illustrates how participants mainly identified the responsibility issue as the negative aspect of AI applications in medicine because AI algorithms base their choices on extensive data and mathematical formulas. Healthcare professionals may encounter difficulties in determining accountability when AI systems produce unfortunate outcomes since responsibility might rest with AI systems, healthcare workers or developers of the AI software. The operation of some AI algorithms enables complete opacity in the decision-making mechanism since their processes stay hidden from view. The inability to understand the decision-making process has a negative effect on accountability measurements because proper oversight becomes difficult. The respondents indicated that Job displacement emerged as a negative impact of AI in healthcare since some medical professionals feared AI-mediated care protocols would dissuade human interactions in patient care thus impacting healthcare

workforce numbers. **Figure 4** shows that most of the respondents strongly agreed with the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas because AI-powered telemedicine allows individuals in remote areas to access medical consultations with healthcare professionals without the need to travel long distances, overcoming geographical barriers.AI enables remote monitoring of patients' health conditions, facilitating proactive interventions and ongoing care management without the need for frequent in-person visits. Most of them agreed on the statement that AI- powered educational tools can help medical students and professionals to learn new skills and up with the latest medical advances and many of the times education is a blend of traditional methods and emerging technologies **(Figure 5**). It could involve a sense of neutrality concerning the belief that AI is potentially helpful but not a full replacement for preexisting educational techniques. However, some respondents disagreed with the statement because some respondents might doubt the quality and accuracy of the educational content which is being provided by AI tools and therefore some of them may doubt the information. **Figure 6** depicts that artificial intelligence can be helpful in the medical sector by allowing eighty percent of the respondents to treat the patient and enabling continuous real time monitoring of the patient critical health parameters and values so that the healthcare professionals can be in the position to receive real time notification regarding any changes or improvement. Off the work, some of the female respondents had responded to drug discovery and development as the role of Artificial intelligence in the medical sector, where AI analyzes existing data to discover different ways that would work for the existing drugs and allows researcher to explore new therapeutic applications without needing to start from scratch. In some cases, surgical robotics was chosen as a role of Artificial intelligence in the medical sector due to the contribution of artificial intelligence in personalized healthcare through surgical approaches tailored to individual patient characteristics suitable in gender confirming surgeries which have unique specifications to be performed by individual patients. **Figure 7** shows that most of the respondents in the age group of 20 to 30 years responded to reduced costs as the positive impact of AI in the medical sector because They may value AI for its potential to optimize operational efficiency, potentially leading to lower overall healthcare expenses and some of the respondents in the age group of 31 to 40 years responded to improved diagnosis and treatment as the positive impact of AI in the medical sector because with an increased likelihood of facing health challenges in this age range, respondents may place a higher importance on AI's role in improving healthcare quality, including more accurate diagnoses and effective treatments. **Figure 8** shows that most of the UG respondents responded to bias as the negative impact of AI in the medical sector because UG students, often exposed to discussions on ethics in their education, may be attuned to the ethical implications of biased AI in healthcare, recognizing the need for responsible AI development and implementation and some of the respondents with no formal education responded to accountability as the negative impact of AI in the medical sector because individuals with no formal education might have a limited understanding of how AI works, leading to concerns about holding AI systems accountable for their decisions. The advanced nature of AI algorithms generates problems regarding people's knowledge of how these systems function. **Figure 9** shows that most of the retired respondents strongly agreed with the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas because AI-powered telemedicine platforms can overcome geographical barriers, allowing individuals in remote areas, where healthcare resources may be limited, to access medical consultations and services and some of the self-employed respondents disagreed with the statement because Self-employed individuals may prefer in-person healthcare interactions or have personal preferences for traditional healthcare

settings, leading to a reluctance to fully embrace telemedicine, even if AI is involved. **Figure 10** shows that most of the people residing in the urban areas neutrally agreed with the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances because Neutrality may reflect concerns about the effective implementation of AI-powered educational tools. Individuals in urban areas might be considering factors such as accessibility, infrastructure, and the integration of these tools into existing educational frameworks and some of the respondents in the rural areas agreed with the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances because AI-powered educational tools can provide individuals in rural areas with access to a wealth of medical knowledge and resources that might not be readily available through traditional means. The flexibility of AI-powered tools can be particularly advantageous in rural settings where individuals may face geographical challenges. Online and AI-driven education can offer learning opportunities without the need for extensive travel.

LIMITATION:

The sampling method followed in this study is a convenient sampling method. The study is unable to collect data sufficiently due to the reduced geographical arena. Since the study is restricted to the territory within Tamil Nadu and therefore the conclusion derived by average is not perfectly accurate. Since the study collected responses from the public at large, the findings are mostly based on generalized opinion rather than legal or scientific background.

SUGGESTION:

Be aware of data privacy. To understand how the incorporation of AI in the healthcare sector encompasses privacy measures, take time to review and understand such policies. Ensure that data is handled responsibly and that the platform has clear privacy measures in place. Share only necessary personal information. Avoid sharing extensive details unless required for the service in question. Secure your accounts connected to AI applications with strong, unique passwords.

CONCLUSION:

Artificial Intelligence has made a significant impact in the field of healthcare, especially with respect to making it more accessible and quality-based. AI technologies are diverse, with types like predictive analytics and telemedicine platforms, providing a huge potential to change the way an individual accesses and experiences healthcare services. The objective of this study is to analyze the role AI plays toward improved accessibility for healthcare in remote and under-served areas. The other aspect of this study is to assess the effectiveness of AI-based Telemedicine platforms in providing timely and quality healthcare services. The findings from the study show visible substantial positive impact due to AI on healthcare accessibility. Telemedicine platforms based on AI have proved effective in filling geographical distances by remote consultations and prompt interventions. Further, AI applications in predictive analytics help in early detection and preventive actions enhancing overall healthcare outcomes. The suggestion is to enhance the awareness programs among the communities to highlight the benefits and responsible use of AI in healthcare. Future directions in this respect will be toward further development of AI technologies to combat emerging challenges in healthcare. In conclusion, the study has identified some significant steps taken by AI in revolutionizing healthcare accessibility. But equal caution must be exercised toward the

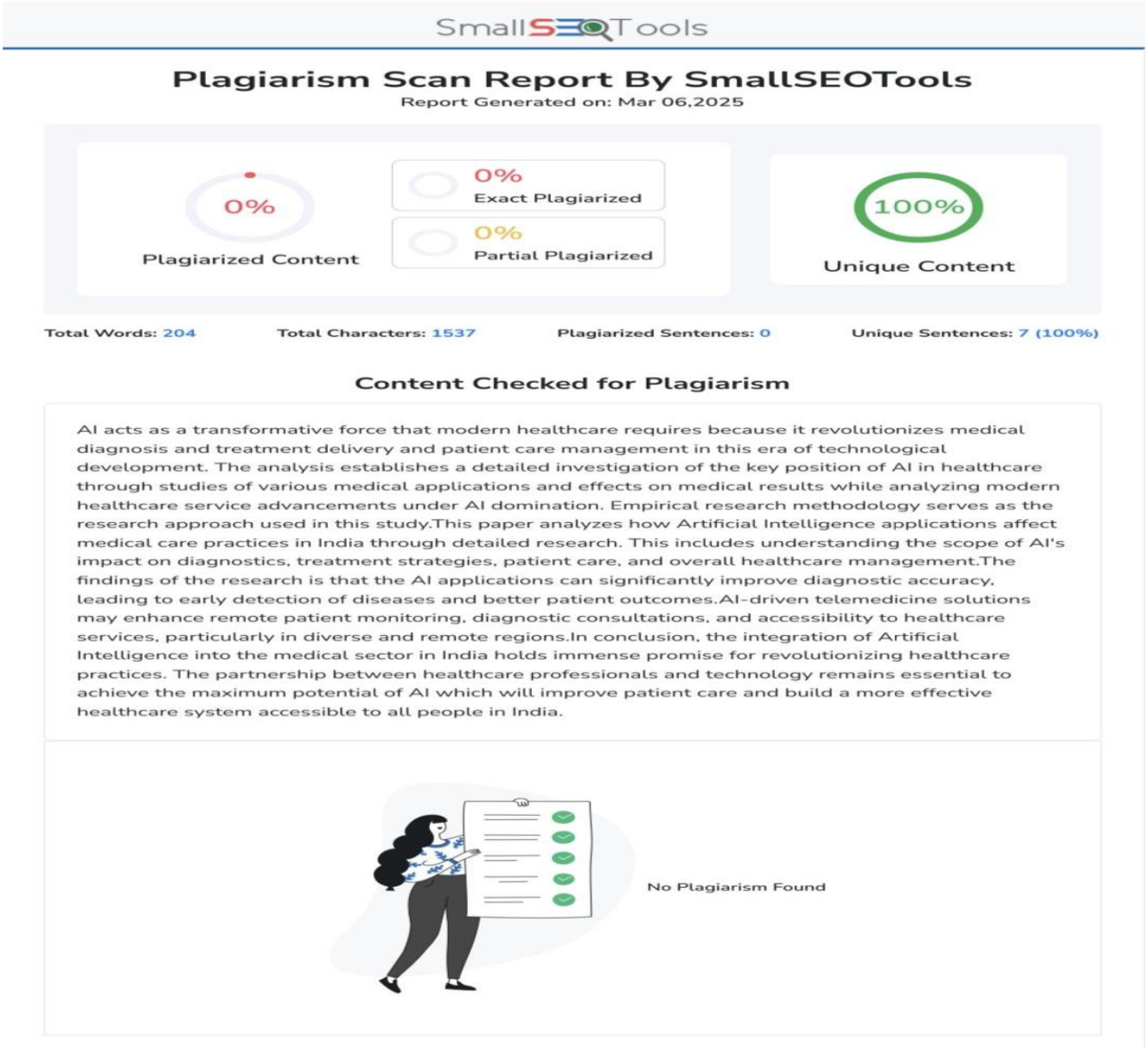
challenges posed by ethical dilemmas and biases in algorithms. The general consensus, however, has emerged demonstrating the potential of AI in ensuring inclusivity and efficiency toward healthcare.

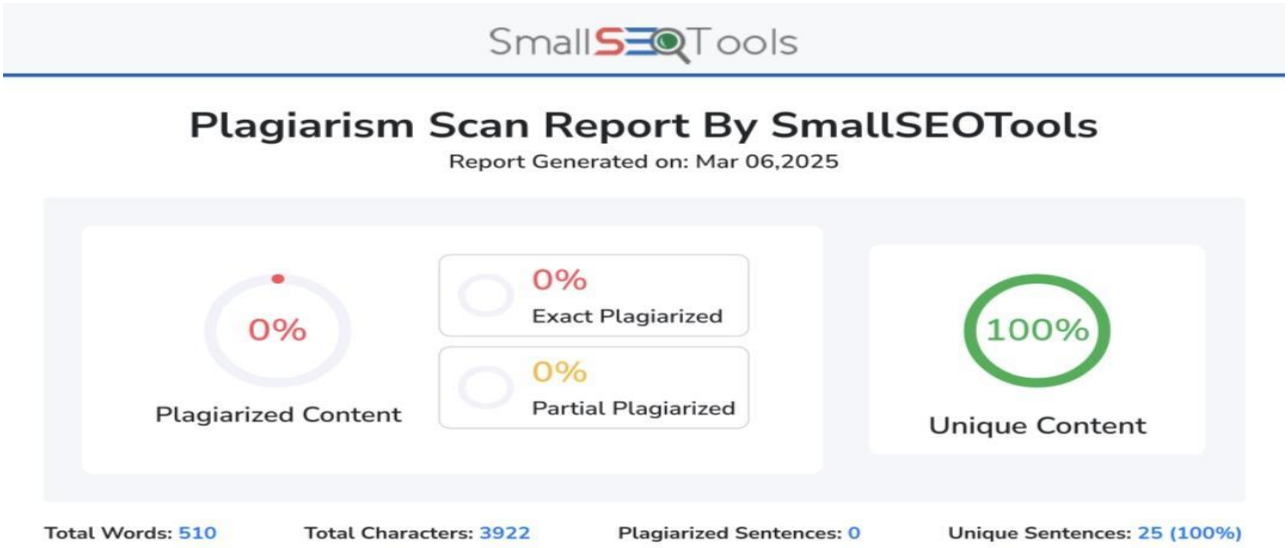
REFERENCE:

1. Ravi, K., Verma. (2023). Role of Artificial Intelligence in the Healthcare Sector. Journal of Clinical Research and Applied Medicine, doi: 10.5530/jcram.3.2.4
2. Lipsa, Dash. (2023). Artificial Intelligence in Healthcare Sector: Policy and Practice. Parikalpana : KIIT journal of management, doi: 10.23862/kiit-parikalpana/2023/v19/i1/220840
3. Cheng, Yu. (2022). Artificial Intelligence in the Healthcare Sector. Advances in healthcare information systems and administration book series, doi: 10.4018/978-1-6684-5656-9.ch008
4. Nimishamba, Ms.., Sushma, M, Ms., Roopa, H, M, Ms., Jyothi, T, Ms. (2022). Impact of artificial intelligence in the health sector. doi: 10.20894/ijbi.105.011.001.001
5. R, Jaichandran., Srikanth, Rayavarapu., Archana, Ravindra, Salve., Manikanda, Rajagopal., Gautam, Prasad., Iskandar, Muda. (2022). Artificial Intelligence and Machine Learning-Based Systems for Controlling Medical Robot Beds for Preventing Bedsores. doi: 10.1109/IC3I56241.2022.10073403
6. Jhumpa, Sarma. (2021). Role of Artificial Intelligence in Medicine and Clinical Research. International Journal for Research in Applied Science and Engineering Technology, doi: 10.22214/IJRASET.2021.37617
7. Sampurna, Guha. (2021). Public perspectives on Healthcare and Artificial Intelligence (AI): A survey study. International journal for innovation education and research, doi: 10.31686/IJAER.VOL 9.ISS 7.3207
8. Sandeep, Reddy., Jenifer, Sunrise, Winter., Sandosh, Padmanabhan. (2021). Artificial intelligence in healthcare-opportunities and challenges. doi: 10.21037/JHMHP-21-31
9. S., Shyni, Carmel, Mary., S., Sasikala. (2021). Healthcare Applications Using Biomedical AI Systems. doi: 10.1201/9781003045564-5
10. Lushun, Jiang., Zhe, Wu., Xiaolan, Xu., Yaqiong, Zhan., Xuehang, Jin., Li, Wang., Yunqing, Qiu. (2021). Opportunities and challenges of artificial intelligence in the medical field: current application, emerging problems, and problem-solving strategies.. Journal of International Medical Research, doi: 10.1177/03000605211000157
11. Ivana, Ognjanovic. (2020). Artificial Intelligence in Healthcare.. Studies in health technology and informatics, doi: 10.3233/SHTI200677
12. Yamini, D, Shah., Shailvi, M, Soni., Manish, P, Patel. (2021). Artificial intelligence in healthcare. International Journal of Parallel Programming, doi: 10.18231/J.IJPP.2021.018
13. Yuri, Yin-Moe, Aung., David, Chuen, Soong, Wong., Daniel, S, W, Ting. (2021). The promise of artificial intelligence: a review of the opportunities and challenges of artificial intelligence in healthcare. British Medical Bulletin, doi: 10.1093/BMB/LDAB016
14. Subhashree, Mohapatra., Tripti, Swarnkar. (2021). Artificial Intelligence for Smart Healthcare Management: Brief Study. doi: 10.1007/978-981-15-6202-0_37
15. Ganesh, K., Sethi., Nazir, Ahmad., Mohammed, Burhanpur, Rehman., Hatim, M., Elhassan, Ibrahim, Dafalla., Mamoon, Rashid. (2021). Use of Artificial Intelligence in Healthcare Systems: State-of-the-Art Survey. doi: 10.1109/ICIEM51511.2021.9445391

16. Akshara, Kumar., Shivaprasad, Gadag., Usha, Y., Nayak. (2021). The Beginning of a New Era: Artificial Intelligence in Healthcare.. Advanced Pharmaceutical Bulletin, doi: 10.34172/APB.2021.049
17. Darsh, Shah., Rutvik, Dixit., Aneri, Shah., Priyam, Shah., Manan, Shah. (2020). A Comprehensive Analysis Regarding Several Breakthroughs Based on Computer Intelligence Targeting Various Syndromes. doi: 10.1007/S41133-020-00033-Z
18. Zahra, Hoodbhoy., Babar, Hasan., Khan, Siddiqui. (2019). Does artificial intelligence have any role in healthcare in low resource settings? doi: 10.21037/JMAI.2019.06.01
19. Abid, Haleem., Mohd, Javaid., Ibrahim, Haleem, Khan. (2019). Current status and applications of Artificial Intelligence (AI) in the medical field: An overview. Current Medicine Research and Practice, doi: 10.1016/J.CMRP.2019.11.005
20. Mohamed, Alloghani., Dhiya, Al-Jumeily., Ahmed, J., Aljaaf., Ahmed, J., Aljaaf., Mohammed, Khalaf., Jamila, Mustafina., Sin, Ying, Tan. (2019). The Application of Artificial Intelligence Technology in Healthcare: A Systematic Review. doi: 10.1007/978-3-030-38752-5_20

PLAGIARISM REPORT:





Content Checked for Plagiarism

Medical applications of Artificial Intelligence went through significant advancement. The first AI applications performed basic recognition work for images which assisted medical diagnosis systems. Research progress allowed scientists to create customized treatment regimens while making use of large healthcare datasets for individualized medical care. Telemedicine stands as one of the evolutionary medical inventions which provides remote access to healthcare. Parents face data privacy concerns yet ongoing evolution enables collaborative healthcare-technology alliances which will elevate medical practices in India for the future.

Government initiatives in India create new Artificial Intelligence integrations with the medical sector which leads to advances in technology while bettering healthcare delivery through three main initiatives. Interoperability increases together with capability to develop AI applications which generate better health results. National Digital Health Mission (NDHM) strives to establish a digital health environment through which AI technologies would enhance efficient healthcare data management as well as patient record maintenance and health analytics capabilities. These elements determine both how healthcare providers use and how AI technologies affect patient healthcare because they define medical regulations.

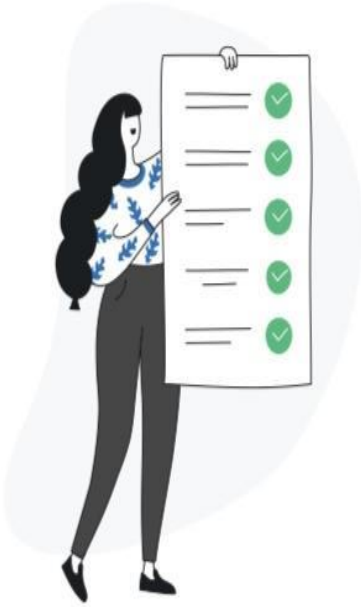
Healthcare professionals require proper training because it ensures their preparedness to operate and understand AI tools in medical practice. Education initiatives and training programs help healthcare professionals to accept and make effective use of AI applications. The ability of patients to accept and trust AI healthcare applications depends on their understanding of this technological process as well as their attitude toward its medical use. The implementation cost of AI technology as well as healthcare institution resource availability establishes key adoption criteria for AI solutions.

Telemedicine and Remote Monitoring simplify patient consultations through AI-powered diagnostic tools which healthcare providers operate remotely from their patients' locations. The pharmaceutical industry benefits from AI algorithms which both quicken drug discovery research and design better clinical trials and predict possible drug candidates. Thethalmes using Natural Language Processing (NLP) analyzes unstructured healthcare information stemming from electronic health records and medical literature ainsi que les données pour trouver des connaissances précieuses.

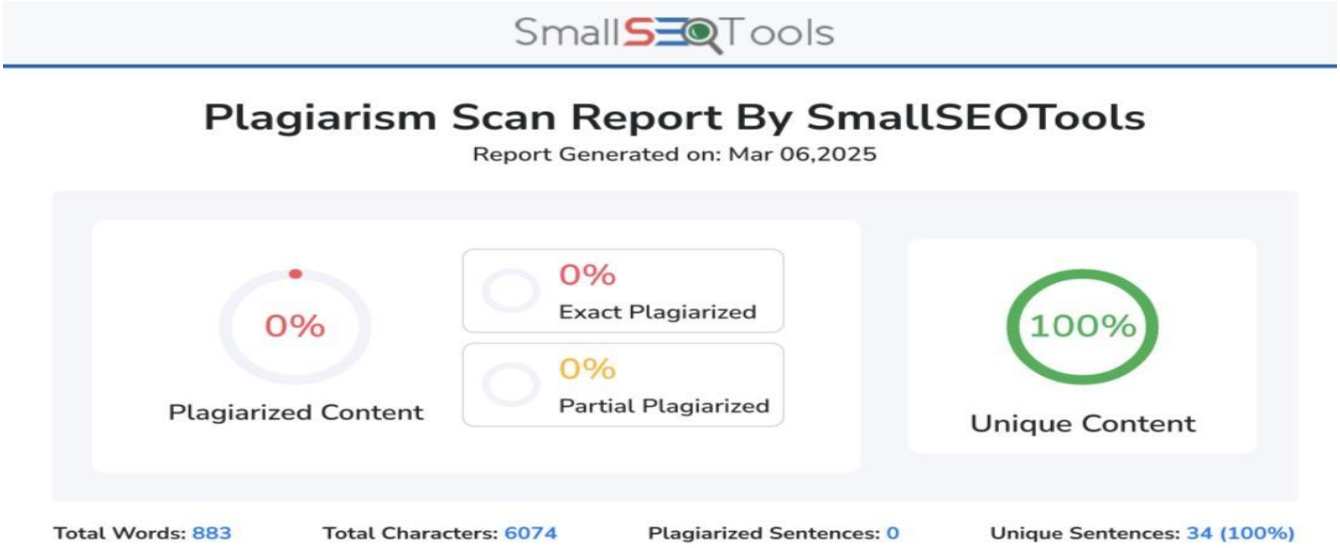
AI-powered chatbots together with Virtual Health Assistants help patients by giving information and appointment scheduling and basic medical assistance to increase patient interaction. AI-powered robotic surgery systems now enhance precision while performing minimally invasive procedures to deliver better surgical outcomes. Healthcare applications of AI in the U.S. lead the world since the nation successfully implements AI solutions primarily for diagnostic services alongside customized medicine programs and prognostic analytical tools.

Artificial Intelligence startups partner with healthcare institutions and tech giants to develop their business operations. The implementation of AI in healthcare throughout China includes efforts to develop AI diagnostic capabilities along with discoveries of new drugs and implementation of AI

within the national medical system. The Canadian government promotes AI implementation for medical imaging as well as precision medicine and data-based clinical choices. Healthcare providers together with research institutions work jointly on AI projects. The South Korean government directs its efforts toward implementing AI in preventive healthcare together with disease prediction services and robotics surgery operations. The current government system backs public initiatives that encourage the adoption of AI technology in healthcare services.



No Plagiarism Found



Content Checked for Plagiarism

Figure 1 illustrates, surgical robotics received the highest responses for artificial intelligence's medical functions because the AI-powered robotic systems improve surgical accuracy while carrying out automated medical procedures which leads to better treatment results. Real-time surgical data processing through AI enables surgeons to receive beneficial decision-making support in their complex procedures. The respondents mentioned medical image assessment by AI algorithms to detect and diagnose medical conditions with accuracy as the central functions of Artificial intelligence in the medical field. Through biological data analysis AI systems help identify prospective drug targets which speeds up the beginning of drug discovery procedures.

Most medical professionals in Figure 2 identified reduced costs as AI's main medical sector benefit because its systems automate processes to cut administrative expenses and operational costs (see Figure 2). According to research findings better medical diagnosis tools and treatment options emerged as the positive effects of AI in healthcare since these AI diagnostic systems improve medical diagnosis precision and eliminate superfluous medical tests and their related expenses because of wrong diagnoses.

Figure 3 illustrates how participants mainly identified the responsibility issue as the negative aspect of AI applications in medicine because AI algorithms base their choices on extensive data and mathematical formulas. Healthcare professionals may encounter difficulties in determining accountability when AI systems produce unfortunate outcomes since responsibility might rest with AI systems, healthcare workers or developers of the AI software. The operation of some AI algorithms enables complete opacity in the decision-making mechanism since their processes stay hidden from view. The inability to understand the decision-making process has a negative effect on accountability measurements because proper oversight becomes difficult. The respondents indicated that Job displacement emerged as a negative impact of AI in healthcare since some medical professionals feared AI-mediated care protocols would dissuade human interactions in patient care thus impacting healthcare workforce numbers.

Figure 4 shows that most of the respondents strongly agreed with the statement thatAI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas because AI-powered telemedicine allows individuals in remote areas to access medical consultations with healthcare professionals without the need to travel long distances, overcoming geographical barriers.AI enables remote monitoring of patients' health conditions, facilitating proactive interventions and ongoing care management without the need for frequent in-person visits.

Most of them agreed on the statement that AI- powered educational tools can help medical students and professionals to learn new skills and up with the latest medical advances and many of the times Medical education is a blend of traditional methods and emerging technologies (Figure 5). It could involve a sense of neutrality concerning the belief that AI is potentially helpful but not a full replacement for preexisting educational techniques. However, some respondents disagreed with the

statement because some respondents might doubt the quality and accuracy of the educational content which is being provided by AI tools and therefore some of them may doubt the information.

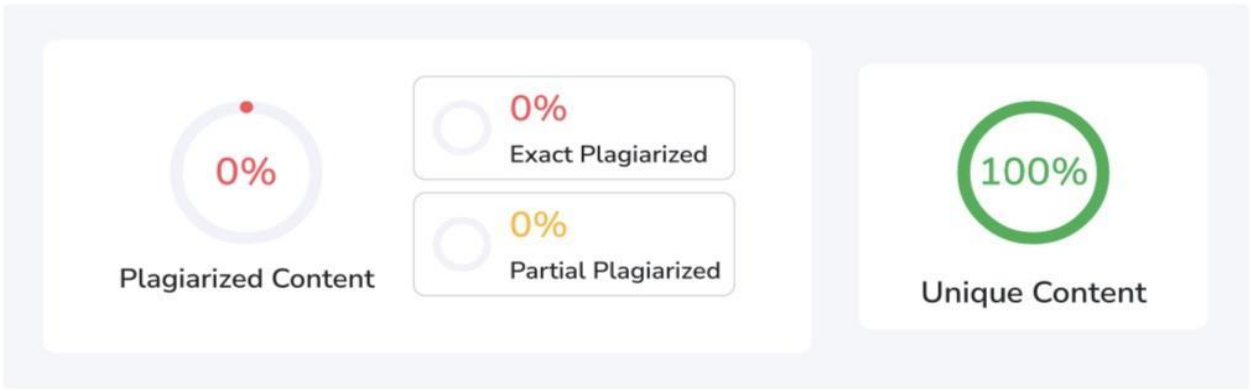
Figure 6 depicts that artificial intelligence can be helpful in the medical sector by allowing eighty percent of the respondents to treat the patient and enabling continuous real time monitoring of the patient critical health parameters and values so that the healthcare professionals can be in a position to receive real time notification regarding any changes or improvement. Off the work, some of the female respondents had responded to drug discovery and development as the role of Artificial intelligence in the medical sector, where AI analyzes existing data to discover different ways that would work for the existing drugs and allows researcher to explore new therapeutic applications with out needing to start from scratch. In some cases, surgical robotics was chosen as a role of Artificial intelligence in the medical sector due to the contribution of artificial intelligence in personalized healthcare through surgical approaches tailored to individual patient characteristics suitable in gender confirming surgeries which have unique specifications to be performed by individual patients.

Figure 7 shows that most of the respondents in the age group of 20 to 30 years responded to reduced costs as the positive impact of AI in the medical sector because They may value AI for its potential to optimize operational efficiency, potentially leading to lower overall healthcare expenses and some of the respondents in the age group of 31 to 40 years responded to improved diagnosis and treatment as the positive impact of AI in the medical sector because with an increased likelihood of facing health challenges in this age range, respondents may place a higher importance on AI's role in improving healthcare quality, including more accurate diagnoses and effective treatments.
Figure 8 shows that most of the UG respondents responded to bias as the negative impact of AI in the medical sector because UG students, often exposed to discussions on ethics in their education, may be attuned to the ethical implications of biased AI in healthcare, recognizing the need for responsible AI development and implementation and some of the respondents with no formal education responded to accountability as the negative impact of AI in the medical sector because individuals with no formal education might have a limited understanding of how AI works, leading to concerns about holding AI systems accountable for their decisions. The advanced nature of AI algorithms generates problems regarding people's knowledge of how these systems function.

SmallSEOTools

Plagiarism Scan Report By SmallSEOTools

Report Generated on: Mar 06,2025



Total Words: 268 **Total Characters:** 1899 **Plagiarized Sentences:** 0 **Unique Sentences:** 10 (100%)

Content Checked for Plagiarism

Figure 9 shows that most of the retired respondents strongly agreed with the statement that AI-powered telemedicine platforms can provide access to quality healthcare to people in remote and underserved areas because AI-powered telemedicine platforms can overcome geographical barriers, allowing individuals in remote areas, where healthcare resources may be limited, to access medical consultations and services and some of the self employed respondents disagreed with the statement because Self-employed individuals may prefer in-person healthcare interactions or have personal preferences for traditional healthcare settings, leading to a reluctance to fully embrace telemedicine, even if AI is involved.

Figure 10 shows that most of the people residing in the urban areas neutrally agreed with the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances because Neutrality may reflect concerns about the effective implementation of AI-powered educational tools. Individuals in urban areas might be considering factors such as accessibility, infrastructure, and the integration of these tools into existing educational frameworks and some of the respondents in the rural areas agreed with the statement that AI- powered educational tools can help medical students and professionals to learn new skills and stay up-to-date on the latest medical advances because AI-powered educational tools can provide individuals in rural areas with access to a wealth of medical knowledge and resources that might not be readily available through traditional means.The flexibility of AI-powered tools can be particularly advantageous in rural settings where individuals may face geographical challenges. Online and AI-driven education can offer learning opportunities without the need for extensive travel.

SmallSEOTools

Plagiarism Scan Report By SmallSEOTools

Report Generated on: Mar 07,2025

0% Plagiarized Content

0% Exact Plagiarized

0% Partial Plagiarized

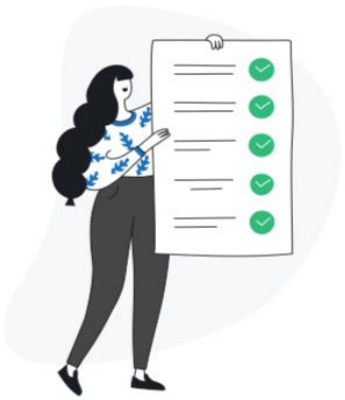
100% Unique Content

Total Words: 145 Total Characters: 968 Plagiarized Sentences: 0 Unique Sentences: 8 (100%)

Content Checked for Plagiarism

LIMITATION:
The sampling method followed in this study is a convenient sampling method. The study is unable to collect data sufficiently due to the reduced geographical arena. Since the study is restricted to the territory within Tamil Nadu and therefore the conclusion derived by average is not perfectly accurate. Since the study collected responses from the general public at large, the findings are mostly based on generalized opinion rather than legal or scientific background.

SUGGESTION:
Be aware of data privacy. To understand how the incorporation of AI in the healthcare sector encompasses privacy measures, take time to review and understand such policies. Ensure that data is handled responsibly and that the platform has clear privacy measures in place. Share only necessary personal information. Avoid sharing extensive details unless required for the service in question. Secure your accounts connected to AI applications with strong, unique passwords.



No Plagiarism Found

SmallSEOTools

Plagiarism Scan Report By SmallSEOTools

Report Generated on: Mar 06,2025

0% Plagiarized Content

0% Exact Plagiarized

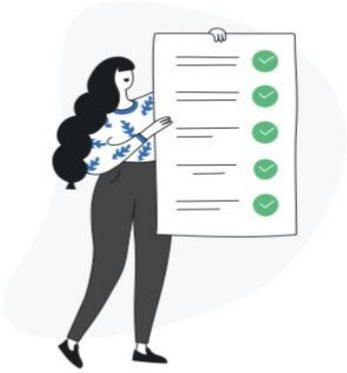
0% Partial Plagiarized

100% Unique Content

Total Words: 238 Total Characters: 1672 Plagiarized Sentences: 0 Unique Sentences: 12 (100%)

Content Checked for Plagiarism

Artificial Intelligence has made a significant impact in the field of healthcare, especially with respect to making it more accessible and quality-based. AI technologies are diverse, with types like predictive analytics and telemedicine platforms, providing a huge potential to change the way an individual accesses and experiences healthcare services. The objective of this study is to analyze the role AI plays toward improved accessibility for healthcare in remote and under-served areas. The other aspect of this study is to assess the effectiveness of AI-based Telemedicine platforms in providing timely and quality healthcare services. The findings from the study show visible substantial positive impact due to AI on healthcare accessibility. Telemedicine platforms on the basis of AI have proved effective in filling geographical distances by remote consultations and prompt interventions. Further, AI applications in predictive analytics help in early detection and preventive actions enhancing overall healthcare outcomes. The suggestion is to enhance the awareness programs among the communities to highlight the benefits and responsible use of AI in healthcare. Future directions in this respect will be toward further development of AI technologies to combat emerging challenges in healthcare. In conclusion, the study has identified some significant steps taken by AI in revolutionizing healthcare accessibility. But equal caution must be exercised toward the challenges posed by ethical dilemmas and biases in algorithms. The general consensus, however, has emerged demonstrating the potential of AI in ensuring inclusivity and efficiency toward healthcare.



No Plagiarism Found