WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Understanding the Scope of Chat (Generating Pre-Trained Transformer) GPT and Artificial Intelligence (AI) in Medical Science

Kanupriya

Assistant Professor, Department of Organon of Medicine, University College of Homoeopathy, Old CHC Building Near Ajmeri Gate, Kekri (Raj.) India (A Constitutent college of DSRRAU, Jodhpur (Raj.) India
Email:- kanupriyapareek6@gmail.com
Doi: https://doi.org/10.55248/gengpi.5.0524.1471

ABSTRACT:-

Artificial intelligence, or AI, is the term used to describe how computers, particularly computer systems, may simulate human intelligence processes. Learning (the process of acquiring knowledge and applying rules to it), reasoning (using rules to arrive at approximations or conclusions), and self-correction are some examples of these processes. Applications of artificial intelligence (AI) include speech recognition, planning, problem-solving, and natural language comprehension. Homoeopathy a branch of medical Science called as alternative and complementary system of medicine found by Masyter Samuel Hahnemann in 18 centuary which is based on Similia Similibus Curenture. means Like Cures Like.. AI is not the permanent tool to treat the patients as a whole physician observation is important to give permanent cure.

Keyword:- Chat GPT, Artificial Intelligence, Medical Science, Homoeopathy.

Introduction

Artificial intelligence, or AI, is the term used to describe how computers, particularly computer systems, may simulate human intelligence processes. Learning (the process of acquiring knowledge and applying rules to it), reasoning (using rules to arrive at approximations or conclusions), and self-correction are some examples of these processes. Applications of artificial intelligence (AI) include speech recognition, planning, problem-solving, and natural language comprehension. An alternative medical practice called homoeopathy is predicated on the idea that "like cures like." Samuel Hahnemann developed it in the latter part of the 18th century. A drug that produces symptoms in a healthy individual can be used, in extremely diluted form, to cure comparable symptoms in an ill individual, according to homeopathic principles.Among the fundamental ideas of homeopathy are:

1. The Similars Law: The foundation of homeopathy is the idea that "like cures like," which states that a drug that produces symptoms in a healthy individual may be used to treat those same symptoms in a sick person.

2. *Required Minimum Amount:* Homeopathic remedies are made from extremely diluted chemicals, frequently to the point where the original substance's molecules are completely gone. This is thought to minimize possible negative effects while increasing the remedy's efficacy.

3. Individualized Treatment: Rather than taking a one-size-fits-all approach, homeopathic treatment is extremely customized, with remedies selected depending on the unique symptoms and traits of each patient. The most common sources of materials for homeopathic treatments include plants, minerals, and animals. They undergo a series of dilution steps followed by succussion, or forceful shaking.

Opponents of homeopathy contend that any therapeutic benefits are probably the result of a placebo effect and that the concepts underlying the practice are not backed by scientific data. In many regions of the world, homeopathy is still widely used despite criticism.

Reason behind the developmet of AI

AI is developed for various reasons, including:

1. Automation: AI enables automation of tasks that were previously performed by humans, leading to increased efficiency and productivity in various industries.

2. Decision Making: AI systems can analyze large amounts of data quickly and make data-driven decisions, helping businesses and organizations make better-informed choices.

3. Problem Solving: AI algorithms can be designed to solve complex problems in fields such as healthcare, finance, and logistics, providing solutions that may not be easily achievable through traditional methods.

4. Enhanced User Experience: AI technologies enable chatbots, recommendation engines, and personal assistants, giving users more individualized and user-friendly experiences.

5. Innovation: Artificial intelligence (AI) research and development spur technical innovation, resulting in advances in robotics, computer vision, machine learning, and natural language processing.

6. Cost Reduction: By automating monotonous processes, reducing errors, and maximizing resource usage, AI can assist firms in cutting expenses.

7. Safety and Security: AI can be applied to public safety, cybersecurity, surveillance, and other fields to improve safety and security measures by spotting anomalies, spotting possible threats, and reducing risks.

In general, the goal of AI development is to build intelligent systems that can replicate human cognitive capacities and resolve challenging issues to enhance a variety of societal features and industry.

Benefits of AI in Medical Field

There are various advantages to using AI in the medical field.

1. Improved Diagnosis: AI algorithms can evaluate medical imaging, including MRIs, CT scans, and X-rays, to help medical personnel identify illnesses and abnormalities more quickly and accurately.

2. Personalized Treatment: AI-powered systems are able to examine sizable patient data sets to create individualized treatment programs that are suited to each patient's requirements. This results in the provision of healthcare that is more effective and efficient.

3. Drug Development and Discovery: AI can speed up the process of finding new drugs by identifying possible candidates for treatment and forecasting their safety and efficacy by evaluating large volumes of biological data.

4. Remote Monitoring and Telemedicine: AI-enabled wearables and remote monitoring systems are able to track patient health data in real-time, providing telemedicine consultations and remote patient monitoring—a feature that is particularly helpful for patients who live in remote locations or have limited mobility.

5. Operational Efficiency: AI may improve hospital operations through improved scheduling and workflow management, more efficient resource management, and the simplification of administrative duties. These improvements will ultimately result in cost savings and more efficient use of resources.

6. Early Disease Detection: AI algorithms are able to examine patient data, such as genetic data and electronic health records, in order to find early indicators of disease and risk factors. This enables early intervention and disease prevention measures.

7. Patient Engagement and Education: AI-powered chatbots and virtual assistants can help patients feel more engaged and educated by giving them individualized health information, responding to their questions, and offering advice on how to manage their diseases.

Role of AI in Homoeopathy

Even though the principles of homeopathy and the paucity of empirical data to support its effectiveness make it a contentious area of medicine, AI may nevertheless have certain advantages for homeopathic practice:

1. Analysis of Data: AI can help homeopaths analyze big patient data sets that include symptoms, responses to treatment, and results. Finding patterns, trends, and correlations using this data can assist guide treatment choices and enhance patient care.

2. Personalized Treatment: Homeopaths can create individualized treatment regimens for each patient based on their unique symptoms, medical background, and other pertinent information with the aid of AI-driven algorithms. This customized strategy could improve patient outcomes and the efficacy of treatment.All things considered, the application of AI in medicine has the potential to completely transform the way that healthcare is delivered by increasing the precision of diagnoses, tailoring treatment plans to each patient, streamlining operations, and eventually saving lives.

3. Research and Development: AI can help with homeopathic research by evaluating clinical trials, scientific literature, and other information sources to find possible treatments, verify treatment regimens, and open up new lines of inquiry.

4. Education and Training: Using interactive simulations, virtual patient cases, and comprehensive learning resources, AI-powered educational systems and platforms can help practitioners and students of homeopathy improve their knowledge and abilities.

5. Patient Engagement: AI-powered chatbots and virtual assistants can give patients individualized information, support, and direction on choosing remedies, self-care routines, and homeopathic treatment alternatives. This increases patient engagement and treatment plan adherence.

6. Quality Assurance: By examining production procedures, ingredient sourcing, and product consistency to satisfy legal criteria, AI algorithms can assist in ensuring the safety and quality of homeopathic treatments.

All things considered, the nature of homeopathy and its contentious standing in the medical community may make integrating AI into homeopathic practice difficult, but these technologies also have the potential to improve patient care, research, education, and personalized treatment, among other facets of homeopathic science.

Drawbacks of AI in Medical field

While AI has many advantages in the medical industry, there are also a number of possible disadvantages and issues with its application, including:

1. Data Security and Privacy: Due to the sensitive nature of medical data, AI systems that rely on vast volumes of patient data may be vulnerable to security flaws, illegal access, and privacy violations.

2. Bias and Fairness: AI algorithms may carry over biases from training data, which could result in differences in healthcare outcomes and exacerbate pre-existing inequalities, especially for underrepresented and disadvantaged groups.

3. Lack of Transparency: A lot of AI algorithms function as "black boxes," making it difficult to comprehend how they make decisions and confirm their accuracy. This might erode medical settings' sense of accountability and confidence.

4. Legal and Ethical Concerns: Using AI to make medical decisions brings up a number of difficult legal and moral questions, such as informed consent, liability for mistakes, and accountability for algorithmic choices that could have a profound impact on a person's life.

5. Dependency and De-skilling: Reliance on AI systems too much may cause healthcare workers to lose their clinical judgment and become less skilled. It may also encourage reliance on unreliable and unavailable technologies.

6. Uncertainties and Algorithmic Errors: In complicated and uncertain medical contexts, AI algorithms are more prone to errors, uncertainties, and limits that could jeopardize patient safety and quality of care.

7. Price and Availability: Access to AI-driven healthcare solutions may be restricted by the high cost of implementing AI technology in healthcare settings, which necessitates investments in infrastructure, training, and maintenance, especially in settings with limited resources.

8. Job Displacement: Healthcare workers may lose their jobs as a result of AI systems automating some operations and procedures, especially in routine clinical and administrative positions. This raises worries about the effects on the labor force and potential disruptions to the job market.

In order to ensure the appropriate and equitable integration of AI into medical practice, addressing these difficulties necessitates thorough consideration of the ethical, legal, regulatory, and social ramifications in addition to ongoing research, transparency, and collaboration among stakeholders.

Drawback of AI in Homoeopathy

Homeopathy's AI integration may encounter several difficulties and drawbacks as well.

1. Incompatibility with Principles of Homeopathy: Artificial intelligence (AI)-driven methods have the potential to undermine the fundamentals of homeopathic therapy by going against established homeopathic principles, such as the use of highly diluted medicines and the individualization of treatment.

2. Inadequate Scientific Support: Since there is little scientific proof to support the effectiveness of homeopathy, it is frequently attacked for being unreliable. If artificial intelligence (AI) is used in this situation without thorough validation and empirical testing, this criticism could get much worse.

3. Ethical Concerns: The use of AI to homeopathy presents moral questions about informed consent, patient autonomy, and the risk of relying too heavily on technology at the detriment of patient-centered, comprehensive care.

4. Quality Control and Safety:Given the highly customized character of homeopathic practice and the variety in patient reactions, it may be difficult to ensure the safety, efficacy, and quality of AI-generated homeopathic remedies and treatment regimens.

5. Human Touch Loss: Homeopathy places a strong emphasis on the therapeutic relationship between the practitioner and the patient; yet, this relationship may be jeopardized with the advent of AI-driven systems that put standardization and efficiency ahead of empathy and individualized care.

6. Regulatory Challenges:Including AI in homeopathic practice may provide issues with liability, accreditation, and licensing, especially if AI systems are used to make decisions about diagnosis or treatment.

7. Aversion to Modification:The integration of AI in homeopathy may encounter opposition, as with any new technology, from patients, stakeholders, and conventional practitioners who may be wary or uneasy about the technology's potential effects.

To ensure that the integration of AI into homeopathic practice is morally and scientifically sound, in line with patient-centered care and holistic healing, practitioners, researchers, legislators, and regulatory bodies must work together to address these challenges, which call for careful consideration of the special qualities of homeopathy.

Discussion and Conclusion

As everything has some pros and cons .Now a day's ChatGpt is booming along with the usage of Artificial Intelligence. It gives information regarding various system. In Medical Field it helps in some extent helping in diagnosis, safety issue, Research and development Field. But if we talk about Homoeopathy,It is totally based on Individualization and it is very difficult for understanding the emotion and feeling of a Patient through AI because it is only practical and so the Homoeopaths can take the help of AI through some extent but totally dependent on this is not possible .Because we treat the patient as a whole not the disease so to understand the patient we use our senses to understand and observe the reaction of our patients to give them a permanent cure.

Reference

1. Sarker, I.H. AI-Based Modeling: Techniques, Applications and Research Issues Towards Automation, Intelligent and Smart Systems.SN Comput. Sci.2022;3, 158.
2. Korteling, J.E.; van de Boer-Visschedijk, G.C.; Blankendaal, R.A.M.; Boonekamp, R.C.; Eikelboom, A.R. Human-versus Artificial Intelligence.Front. Artif. Intell.2021;4, 622364.
3. McCarthy, J.; Minsky, M.L.; Rochester, N.; Shannon, C.E. A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955.AI Mag.2006;27, 12.
4. Jordan, M.I.; Mitchell, T.M. Machine learning: Trends, perspectives, and prospects.Science2015;349, 255–260.
5. Hemingway H, Croft P, Perel P. Prognosis research strategy (PROGRESS) 1: a framework for researching clinical outcomes.BMJ.2013;346:e5595.
6. Jianning Li ChatGPT in healthcare: A taxonomy and systematic review Computer Methods and Programs in Biomedicine Volume 245, March 2024, 108013
7. van HaselenR. Development of a prognostic factor prediction model in patients with musculoskeletal pain treated with homeopathy: an individual patient data meta-analysis of three randomized clinical trials.Complement Med Res.2021;28:46–55.
8. Domingos, P.The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World,1st ed.; Basic Books, A Member of the Perseus Books Group: New York, NY, USA, 2018; p. 329.
9. OpenAI. OpenAI: Models GPT-3. Available online:https://beta.openai.com/docs/models(accessed on 14 January 2023).
10. Brown, T.; Mann, B.; Ryder, N.; Subbiah, M.; Kaplan, J.D.; Dhariwal, P.; Neelakantan, A.; Shyam, P.; Sastry, G.; Askell, A. Language models are few-shot learners.Adv. Neural Inf. Process. Syst.2020;33, 1877–1901.
11. Dave T, AthaluriSA, Singh S. ChatGPT in medicine: an overview of its applications, advantages, limitations, future prospects, and ethical considerations. Front Artif Intell. 2023 May 4;6:1169595. doi: 10.3389/frai.2023.1169595. PMID: 37215063; PMCID: PMC10192861.
12. Teut M, van Haselen RA, Rutten L, Lamba CD, Bleul G, Ulbrich-Zürni S. Case Reporting in Homeopathy-An Overview of Guidelines and Scientific Tools. Homeopathy. 2022 Feb;111(1):2-9. doi: 10.1055/s-0041-1731313. Epub 2021 Sep 14. PMID: 34521146; PMCID: PMC8803476.
13. Rutten L, Smedley T, Ives G. Data collection during the COVID-19 pandemic: learning from experience, resulting in a Bayesian repertory.Homeopathy.2021;110:94–101.
14. Rutten A L, Stolper C F, LugtenR F, Barthels R W. Statistical analysis of six repertory rubrics after prospective assessment applying Bayes' theorem.Homeopathy.2009; 98:26–34.