

## Transformative potential of artificial intelligence in global health policy

### 1. Introduction

ChatGPT is an extraordinary example of how far artificial intelligence has come regarding conversational interfaces. Its exceptional ability to mimic human interaction by utilizing advanced natural language processing techniques has completely transformed how people interact with technology today [1,2]. It offers a highly immersive experience for users; their conversations feel natural and realistic as if they are interacting with another human being [3]. What distinguishes ChatGPT from other chatbots or virtual assistants is its incredible aptitude: when answering questions, it acknowledges user assumptions and challenges them using sophisticated algorithms. This feature significantly contributes to creating valuable insights and enhancing overall learning experiences for the users who engage with ChatGPT [4,5]. Overall, through its remarkable features, powerful machine learning models, and capacity to improve throughout interactions, ChatGPT represents one of the most innovative technologies available currently and continues to evolve every day, thus transforming communication [6]. Its ability to generate accurate responses without additional user input has made it a valuable resource beyond simple inquiries, with users relying on it for academic papers and essays due to its capability to provide supporting references upon request. However, it is important to acknowledge that these references may contain errors, as noted by researchers [7,8].

The remarkable transformation of artificial intelligence technology has revolutionized multiple fields, particularly public policy. Artificial intelligence systems are indispensable tools in policymaking due to their proficiencies in recognizing patterns in vast amounts of information [9]. With these capabilities, policymakers can make more informed decisions precisely based on insights rather than relying entirely on intuition or assumptions. The potential for AI's continued evolution is immense and wildly anticipated to facilitate unparalleled advancements that could change how we shape our policies. ChatGPT is a promising AI technology that can revolutionize global health policy. It can facilitate communication between humans and machines, enabling vital contributions to complex decision-making processes at all levels of government agencies. However, whether ChatGPT will significantly impact governance regarding efficiency improvements or transparency development within society is unclear.

### 2. Advantages of integrating ChatGPT in global health policy

Integrating ChatGPT into this context brings numerous advantages that deserve careful consideration. Firstly, its sophisticated language processing capabilities empower ChatGPT to explore intricate linguistic structures and uncover subtle patterns that may elude human perception. This pivotal ability enables in-depth scrutiny of complex public debates surrounding global health policy issues, unraveling nuances and details precisely. Secondly, ChatGPT's advanced analytical functionality provides global health policymakers a robust and efficient solution for gaining valuable insights from complex healthcare data sets. With its cutting-edge algorithms and technology, ChatGPT delivers unprecedented accuracy and precision, surpassing manual data analysis methods. By harnessing this powerful tool, policymakers can streamline their decision processes, saving significant time and resources that labor-intensive analyses would have otherwise consumed. Thirdly, one of ChatGPT's most impressive capabilities lies in its use of advanced algorithms and data analytics tools. This integration enables the platform to offer a level of analysis that surpasses traditional policy evaluation methods. By predicting potential consequences across various societal aspects, including economic factors, social dynamics, and public health outcomes, ChatGPT provides unparalleled insights into the likely impact of proposed policies. This comprehensive understanding empowers decision-makers to make informed choices, prioritizing their communities' needs while minimizing any unintended negative effects or risks associated with new initiatives. With ChatGPT as a tool for evaluating policy options in detail, stakeholders can rest assured they have considered all possible outcomes when making important decisions about how best to promote healthy societies around the globe. Fourth, the advantage of ChatGPT lies in its remarkable accessibility, which has proven to be an invaluable resource for policymakers seeking a more agile and responsive approach to decision-making. With the ability to access data-driven insights at a moment's notice, health policymakers are better equipped to analyze complex issues and formulate effective strategies that can have a lasting impact on

public health outcomes. This increased agility means that important information is no longer subject to constraints imposed by human analysts or limited availability; instead, it can be accessed instantly whenever needed. Fifth, uncovering blind spots or unconscious biases is paramount to promoting equity and fairness in policy implementation. By delving deeper into the decision-making process, this method allows for a more comprehensive understanding of how decisions are reached and sheds light on any underlying factors that may have been overlooked. This ensures that policies are fair and just and helps identify areas where improvements can be made to create an even playing field for all individuals affected by these policies.

For example, ChatGPT can help address vaccine hesitancy and promote fair vaccination strategies in healthcare policy. Vaccine hesitancy stems from misinformation, culture, and mistrust. A multidimensional problem requires addressing concerns driving vaccine resistance in public debates. With ChatGPT, policymakers can understand why people are hesitant about vaccines. Integrating ChatGPT with existing information resources provides personalized medical advice based on patient needs and preferences. Incorporating AI tech like ChatGPT into healthcare policy can improve response rates for vaccination and ensure inclusivity by considering local customs. ChatGPT can provide policymakers with deeper insights into public health issues. Suppose a demographic group's vaccination rates are decreasing in an area. Use ChatGPT to analyze media discussions and news reports on vaccination within targeted groups for better policymaking. By identifying subtle linguistic patterns related to vaccines, decision-makers better understand people's concerns and beliefs, leading to better decisions.

### 3. Possible disadvantages of utilizing ChatGPT

Transparency is one of the primary concerns surrounding using ChatGPT for decision-making processes. This issue arises due to the intricacy of the algorithm utilized by ChatGPT, which necessitates human assistance for comprehension purposes. The challenge lies in identifying and comprehending all factors contributing to generating outputs via this platform. Given its complexity, achieving transparency or visibility into results produced by ChatGPT can prove particularly arduous; therefore, policymakers may struggle with trusting these findings while making decisions based on them confidently. The absence of clarity presented here poses significant challenges as uncertainty impedes policymakers' ability to trust the information provided through AI-driven tools,

thereby impairing their capacity for informed decision-making within healthcare settings globally. Second, the utilization of ChatGPT in the context of global health policy analysis is an issue that requires careful consideration due to its profound ethical implications. The potential consequences of perpetuating bias and promoting injustice cannot be overstated, as such actions can impede social justice efforts. This raises concerns about discriminatory practices and policies that may further exacerbate existing inequalities within healthcare systems across the globe. Additionally, it should be noted that analyzing large datasets poses a challenge when attempting to detect hidden or inherent biases present in training data used by ChatGPT models. Researchers must detect biases when utilizing this technology, as they can unknowingly influence decision-making processes. Ethical considerations in using ChatGPT for global health policy analysis require a deep understanding to ensure equitable outcomes. ChatGPT outputs may not accurately represent wider population sentiments, risking overlooking important stakeholder needs. While ChatGPT performs well with text input, contextual understanding is crucial for complex global health issues. Inadequate data or a lack of comprehension can result in uninformed policy decisions with serious societal impacts. Considering these factors is imperative before relying on AI like ChatGPT for critical decision-making in intricate healthcare systems.

For instance, a raised concern is used in ChatGPT's usage in mental health policy issues. This algorithm can help policymakers analyze data on population health and socioeconomic indicators to develop depression and anxiety reduction initiatives in certain countries. ChatGPT's complexity hinders transparency and policymakers' comprehension of its outputs. Due to this, trust issues occur for those who depend on ChatGPT's findings. An ethical concern for policymakers is ChatGPT perpetuating biases from its training data. They must ensure ChatGPT's analysis does not promote unfair behavior or worsen mental healthcare inequalities. Be cautious about using ChatGPT to inform mental health policies, as it may not accurately represent the broader population's sentiments and needs. ChatGPT's algorithms must accurately capture the complexities or risk ignoring minority requirements and stakeholder opinions.

### 4. Healthcare access and digital health market expansion

The issue of healthcare access continues to be an ongoing concern in various parts of the globe, especially among marginalized communities that remain

underserved [10]. In such areas where there is a shortage of medical professionals or limited resources available, ChatGPT can emerge as a virtual assistant offering critical assistance and support to people searching for medical guidance. With its advanced technology and AI-powered abilities, ChatGPT can aid individuals by providing comprehensive information about their symptoms while improving their self-care practices. Furthermore, it goes beyond merely addressing physical ailments by offering mental health advice to those who require emotional support during challenging times. ChatGPT's significance further amplifies when we consider resource-limited regions where basic healthcare amenities are scarce; this intelligent system acts as a dependable source rendering fundamental knowledge on wellness management's behalf, empowering users to make informed choices regarding their well-being. The feature that sets ChatGPT apart from other digital assistants is its unmatched cultural intelligence and multilingual capabilities, breaking down communication barriers caused due to language differences. Henceforth, vulnerable populations residing in these remote geographies receive equitable treatment and socio-cultural dignity, thus building their confidence to better their lifestyles.

ChatGPT can excel in the dynamic digital health market, driving unprecedented healthcare transformation. Telemedicine and remote healthcare services are increasingly popular for patients seeking instant medical attention at home. Integrating innovative healthcare solutions is a challenge for many. ChatGPT can overlook by connecting digitalization and healthcare through innovative technology. It can provide real-time support to stakeholders, including physicians, patients, and policymakers, ensuring seamless integration throughout implementation. ChatGPT can help optimize the patient experience in hybrid care systems by aiding data exchange, communication, and policy frameworks, leading to more accessible treatment outcomes and consumer control. For example, the virtual assistant can assist individuals with navigating digital health platforms and addressing any privacy or data security concerns they may have. Furthermore, it can seamlessly guide patients through registration for teleconsultations, accelerating the adoption of digital health services and expanding access while improving overall quality. A key area where this technology shines is in offering personalized suggestions about exercise routines and diet plans that cater based on an individual's medical history and unique goals, enhancing their well-being and contributing towards disease prevention strategies.

## 5. Conclusion

ChatGPT technology holds immense potential to create a paradigm shift in how we approach global health policy analysis by bridging the communication gap between humans and machines. Its unique ability to provide insightful inputs into complex decision-making processes at all levels of government agencies across different countries has paved the way for increased efficiency and transparency in administration. However, despite its numerous advantages, policymakers and researchers must be cautious when incorporating this emerging technology into their work as they need to address several challenges that come with it. These obstacles can range from ethical concerns around data privacy breaches or bias in algorithmic learning models used by these systems; hence caution is required while integrating them within sensitive contexts such as healthcare policies formulation or implementation strategies.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This research received no specific grant from any funding agency in the public or commercial agency.

## References

- [1] Javaid M, Haleem A, Singh RP. ChatGPT for healthcare services: an emerging stage for an innovative perspective. *BenchCouncil Transactions On Benchmarks, Standards And Evaluations*. 2023; 3 (1):100105. doi: [10.1016/j.tbench.2023.100105](https://doi.org/10.1016/j.tbench.2023.100105)
- [2] Wang FY, Li J, Qin R, et al. Chatgpt for computational social systems: from conversational applications to human-oriented operating systems. *IEEE Trans Comput Social Syst*. 2023;10(2):414–425. doi: [10.1109/TCSS.2023.3252679](https://doi.org/10.1109/TCSS.2023.3252679)
- [3] Dwivedi YK, Kshetri N, Hughes L, et al. Opinion Paper: “So what if ChatGPT wrote it?” Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *Inter J Inf Manage*. 2023;71:102642. doi: [10.1016/j.ijinfomgt.2023.102642](https://doi.org/10.1016/j.ijinfomgt.2023.102642)
- [4] Khan RA, Jawaid M, Khan AR, et al. ChatGPT-Reshaping medical education and clinical management. *Pak J Med Sci*. 2023;39(2):605. doi: [10.12669/pjms.39.2.7653](https://doi.org/10.12669/pjms.39.2.7653)
- [5] Hassani H, Silva ES. The role of ChatGPT in data science: how ai-assisted conversational interfaces are revolutionizing the field. *Big Data And Cognitive Com*. 2023;7(2):62. doi: [10.3390/bdcc7020062](https://doi.org/10.3390/bdcc7020062)

- [6] PP R. ChatGPT: a comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet Of Things And Cyber-Physical Systems*. 2023;3:121–154. doi: [10.1016/j.iotcps.2023.04.003](https://doi.org/10.1016/j.iotcps.2023.04.003)
- [7] Curtis N. To ChatGPT or not to ChatGPT? The impact of artificial intelligence on academic publishing. *Pediatr Infect Dis J*. 2023; 42(4):275. doi: [10.1097/INF.0000000000003852](https://doi.org/10.1097/INF.0000000000003852)
- [8] Kim SG. Using ChatGPT for language editing in scientific articles. *Maxillofacial Plastic Reconstruct Surg*. 2023 13;45(1). doi: [10.1186/s40902-023-00381-x](https://doi.org/10.1186/s40902-023-00381-x)
- [9] Chakrabarti MS, Ray MR. Artificial Intelligence and the Law. *J Pharm Negat*. 2023;87–95. doi: [10.47750/pnr.2023.14.S02.15](https://doi.org/10.47750/pnr.2023.14.S02.15)
- [10] Rudd J, Igburde C. A global perspective on data powering responsible AI solutions in health applications. *AI And Ethics*. 2023;1–1. doi: [10.1007/s43681-023-00302-8](https://doi.org/10.1007/s43681-023-00302-8)

Ridwan Islam Sifat

*School of Public Policy, University of Maryland,  
Baltimore, MD, USA*

✉ [rsifat1@umbc.edu](mailto:rsifat1@umbc.edu)

 <http://orcid.org/0000-0001-9897-0870>

Upali Bhattacharya

*Department of Sociology, Virginia Polytechnic Institute  
and State University, Blacksburg, VA, USA*