Sentient Systems and Sensitive Minds: Governing AI in Mental Health

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ABSTRACT

The integration of technology in mental healthcare has evolved significantly, with recent years witnessing the increased adoption of machine-based systems for diagnosis, treatment planning, and patient interaction (Smith & Kumar, 2022). However, this technological shift has outpaced the development of appropriate legal and ethical frameworks, particularly in countries where mental health legislation is still evolving (Patel, 2021). This paper aims to critically examine the legal and ethical dimensions surrounding the use of advanced digital systems in mental health care. It focuses on identifying gaps in existing legal provisions, such as the Mental Healthcare Act, 2017 (Government of India, 2017), and explores the ethical dilemmas posed by automated interventions in therapeutic contexts (Lee & Tan, 2020). The study adopts a qualitative, doctrinal research approach. It involves a detailed review of statutory provisions, judicial interpretations, and scholarly literature related to mental health law and digital health technologies (Jones, 2019). Comparative analysis is also undertaken to explore international best practices and standards (WHO, 2020). The research reveals that current legal frameworks inadequately address issues such as system accountability, liability for harm, and algorithmic transparency (Chakraborty & Mehta, 2021). Ethical challenges include algorithmic bias stemming from non-representative data and the diminishing role of human empathy in care delivery (Nguyen et al., 2023). The lack of comprehensive data protection measures further aggravates concerns over patient privacy and trust (Roy & Singh, 2022). To ensure responsible integration of digital systems in mental health services, a robust regulatory framework is essential. This should include updated legal provisions, ethical oversight, and safeguards for data privacy. Balancing innovation with accountability will be critical in protecting the rights and well-being of individuals seeking mental health care (Desai, 2021).

INTRODUCTION

Good mental health is directly proportional to mental and psychological welfare. WHO's work to improve the mental health of individuals and society at large includes the promotion of mental well-being, the prevention of mental disorders, the protection of human rights and the care of people affected by mental disorders. Mental, neurological and substance use disorders make up 10% of the global burden of disease and 25.1% of non-fatal disease burden.[1] In India, the mental health workforce faces a significant shortage, with only 0.7 mental health professionals per 100,000 people, far below the recommended ratio of three per 100,000.[2] This shortage is expected to worsen, with projections indicating a growing gap in the availability of mental health professionals.[3] Regarding depression and anxiety, the rates have also seen a sharp increase. During the pandemic, the prevalence of depression and anxiety among Indian adults rose to 14%, compared to 5.3% before the pandemic. This highlights the urgent need for more mental health resources and support in the country.[4]

The integration of artificial intelligence (AI) in mental health care is revolutionizing the field, offering innovative tools to enhance diagnosis, treatment, and accessibility. However, as these technologies become more prevalent, they raise critical legal and ethical concerns that must be addressed. AI has significantly transformed various aspects of human life. Its primary goal is to create intelligent systems capable of learning, understanding, and providing guidance to users. Machine learning (ML), a subset of AI, uses statistical models and algorithms to extract features and recognize patterns from extensive data sets.

Artificial intelligence (AI) significantly impacts healthcare, especially through machine learning (ML). Three main types of ML are utilized: supervised learning, unsupervised learning, and deep learning. Supervised learning involves training models with labeled data for applications like disease diagnosis by identifying patterns in medical images and predictive analytics to forecast patient outcomes based on historical data. Unsupervised learning uses unlabeled data to discover hidden patterns, aiding in tasks such as grouping patients with similar traits for customized treatments and detecting anomalies in patient data that might indicate errors or rare conditions. Deep learning, a branch of ML, employs multi-layered neural networks for analyzing data, proving effective in tasks like detecting abnormalities in complex medical images, understanding clinical notes through Natural Language Processing (NLP) for informed clinical decisions, and accelerating drug development by predicting molecular behavior and drug interactions. These ML techniques are enhancing healthcare by improving diagnostic accuracy, personalizing treatments, and streamlining administrative processes, marking an exciting era for AI in the medical field.

AI tools such as predictive analytics, chatbot-based therapies, and virtual mental health assistants have transformed how care is delivered. Despite these advancements, issues surrounding data privacy, algorithmic bias, and accountability highlight the urgent need for a robust legal and ethical framework. This paper examines the implications of AI in mental health, while proposing solutions to ensure that innovation aligns with legal and ethical principles.

AI IN MODERN LIFE:

AI has become a significant part of our daily lives. The term "artificial intelligence" was coined by computer scientist John McCarthy, who described it as the science of creating intelligent machines. Another key figure, Alan Turing, discussed the criteria for machine intelligence in his 1950 paper "Computing Machinery and Intelligence." While intelligence is traditionally associated with humans, the term "artificial" highlights that this type of intelligence is computer-based. AI is now widespread in modern western society, assisting with information access, social media interactions, and security systems. Although AI is starting to be utilized in clinical settings, such as medical imaging and genetic testing, its routine use in healthcare is still limited due to the high stakes and potential risks compared to its application in everyday conveniences.

AI IN HEALTH-CARE

AI has revolutionized healthcare by enhancing early disease detection, understanding disease progression, optimizing treatment dosages, and discovering new therapies through rapid analysis of large datasets. In fields like ophthalmology, cancer detection, and radiology, AI algorithms can identify patterns and subtleties undetectable by humans. Although AI won't completely replace human doctors, it supports clinical decision-making by synthesizing vast amounts of medical information quickly. Large datasets, such as Electronic Health Records (EHRs), enable AI to reveal trends and associations in human behaviors that are challenging for humans to extract, ultimately augmenting healthcare professionals' capabilities and enabling more precise, personalized medical care. Moreover, Virtual consultations allow patients to receive medical care remotely, which is particularly useful for those in remote locations or with mobility challenges. AI also plays a crucial role in medication management by analyzing prescription histories and vital signs, reducing the risk of adverse drug events and enhancing patient safety. Furthermore, AI fosters transparency by providing patients with detailed information about their health and treatments, empowering them to make informed decisions and fostering trust with healthcare providers.

Three core principles for the successful integration of AI in healthcare are data security, analytics and insights, and collaborative expertise. Ensuring data security involves maintaining full transparency and trust in the training processes of AI systems, as well as in the data and knowledge utilized to train them. As humans and AI systems increasingly collaborate, it is crucial to have confidence in the outcomes produced by these systems.[5]

AI algorithms can analyze data and generate predictions, uncovering insights that were previously out of reach. In the healthcare sector, AI-powered diagnostic tools have demonstrated high accuracy and efficiency in disease detection. By scrutinizing vast amounts of medical data, these technologies can identify patterns and make predictions with notable precision. For instance, AI algorithms can assess medical images, such as MRIs or X-rays, to detect abnormalities that human experts might miss. This technology improves early detection rates and has the potential to prevent numerous fatalities.

AI IN MENTAL HEALTH-CARE

AI's development can be traced back to the mid-20th century when initial models and algorithms started to imitate human cognitive processes. The British Computer Scientist Alan Turing is considered a pioneer of artificial intelligence (AI) and the father of modern cognitive science. A key moment in this evolution was the development of the program named ELIZA (Electronic Linguistic Analyzer) by Joseph Weizenbaum in the 1966, who was highly influenced by the Turin's work of machine intelligence and whether machines can exhibit human like behaviour. ELIZA used a basic natural language processing (NLP) system designed to emulate conversation and make structured dialogue to mimic human interaction. ELIZA's response was based on program scripts and patterns rather than true comprehension of the conversation. During the 1980s and 1990s, expert systems were introduced to assist with mental health diagnosis and treatment planning, aiming to mirror human decision-making. However, these early AI applications faced limitations, including insufficient computational power, limited data, and the underdevelopment of machine learning techniques.[6]

More than 150 Million people in 2021 in the WHO European Region were suffering from serious mental health condition, which got aggravated by the covid scenario. Loss of employment, professional and academic stress, lacking access to health services turned the mental health condition of the people vulnerable. As AI has revolutionized health care facility where ut helps to identify and monitor health problems. [7]

In the 21st century, AI's role in mental health saw a major shift, driven by advancements in machine learning, NLP, and the rise of digital health data. AI systems evolved from rigid, rule-based models to ones that could learn from data, enabling them to make predictions and derive insights. This period saw the development of AI applications for mental health assessment, diagnosis, and even initial clinical interventions, forming the basis for contemporary AI use in the field of mental health.

As a branch of artificial intelligence, machine learning (ML) entails developing algorithms that let systems learn from data and gradually get better at what they do without explicit programming. It encompasses methods like deep learning, reinforcement learning, supervised learning, and unsupervised learning. Mental health issues including schizophrenia, anxiety, and depression can be diagnosed with the aid of machine learning algorithms using patient data, including behavioral patterns and electronic medical records.[8]

Another branch of artificial intelligence that enables machines to analyze, understand, interpret, and generate human language is called natural language processing, or NLP. Researchers enhance and use these methods in practical applications, like creating speech-to-speech translation engines and spoken dialogue systems, searching social media for financial or health information, and identifying sentiment and emotion toward goods and services.[9] Clinicians can keep an eye on their patients' mental health through text, chat, or speech by using natural language processing (NLP) to evaluate written or spoken language and identify emotional states and changes. Additionally, this potential is increased by using AI-powered chatbots, which engage users in text-based conversations and provide real-time assistance, coping mechanisms, and even recommendations for mental health specialists to consult.

In India the Ministry of Electronics and Information Technology launched Tele MANAS (Tele Mental Health Assistance and Networking Across States) under The National Tele Mental Health Programme (NTMHP) on 10th October 2022. Its aim was to provide 24/7 affordable and quality free mental health care assistance to every citizens of India specially to vulnerable groups and in remote areas. The service includes phone based consultation and counseling. It served over 14.7 lakh calls till today.[10]

LEGAL CHALLENGES OF AI IN METAL HEALTH-CARE

Mental health and issues related to it have been considered to be a taboo in Indian society for a long time. It includes a vibrant stigma attached to those who suffer from it. This stigma has led to mistreatment, abuse, and isolation of individuals with mental health related issues, mostly in backward sections of the country where they are sometimes labelled as "lunatics."

India's legal administration for AI is still in its nascent stages. As exploration of AI in different fields is very new, Its administration is mostly based on existing regulations that are not adapted to the specific issues which comes along AI systems. Data is the foundation of this technology, so effective data handling, including privacy and security, is critical. Challenges include data collection without consent. The quality of data used to train AI models if inaccurate then it can lead to critical problem in real world application. AI systems often rely on large amounts of data, which many times include sensitive personal information, the breach of which may lead to serious problems. AI algorithms can provide biased output if the input data they are trained on is also biased. This can lead to discriminatory outcomes. AI systems can occasionally become targets for hackers seeking illegitimate access to personal information.

Highest critical component of AI regulation is protection of personal data. The Digital Personal Data Protection Act, 2023 mandates that the gathering and subsequent utilization of personal data need to be lawful, fair, and transparent. It emphasizes the need for data minimization and the prevention of discriminatory outcomes. It promotes transparency by requiring data fiduciaries to provide individuals with clear information about how their data is being used, indirectly addressing algorithmic bias concerns. It establishes a framework for the protection of personal data, emphasizing consent, data minimization, and accountability but does not provide a dedicated AI regulation. But it acts as a foundational framework for responsible AI development and use in India by focusing on the ethical and lawful handling of personal data.

The Information Technology Act, 2000 in India was enacted before the extensive adoption of AI. As a result, it faces several challenges in

effectively regulating AI-related issues in today's world. Though the IT Act provides a framework for data protection, addresses cybersecurity concerns, provides a legal framework for e-commerce transactions. But it lacks specific provisions explicitly addressing AI-related issues. The rapid evolution of AI technologies presents a significant challenge for the IT Act, which may not keep pace with the latest advancements in the fast changing world. Moreover, the IT Act does not directly address the issue of algorithmic bias, which can lead to discriminatory outcomes in areas. Thus the Act does not specifically address AI centric problems with respect to applications of AI, leaving gaps for a more comprehensive legal framework to address the unique challenges evolved with AI technologies. This may require amendments to the IT Act or the enactment of new legislation specifically AI centric.

The core legislation that deals with mental health in India in Mental Healthcare Act, 2017. This Act replaced the Mental Health Act 1987 The previous Mental Health Act of 1987 was outdated and did not provide for adequate protection or curative treatment to the individuals suffering from mental illness. The Act primarily focused on institutional care of the patients in psychiatric hospitals, neglecting community-based treatment. This prevented these people with mental illness to live independently and intricately participate in society. The concept of confinement, including the use of chains and other extreme measures, were seen as a way to protect society from persons with mental illness rather than providing them with proper care and provide a reformative treatment. With the aim to align the mental healthcare domain with United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2007, the previous Act of 1987 got repealed, leading to the introduction of the new Act. The Act does not have any explicit provision relating to protection of patient's data used by AI system which can lead to breach of confidentiality. The Act does not addresses any concern regarding development and use of AI technique in mental healthcare. The Act also does not provide for any provision which ensures AI technological access to remote areas.

India's legal landscape for AI is still in its beginning stages, with fragmented legislation and a lack of a specific AI regulatory framework. While AI has been recognized as a transformational technology, its administration is mostly based on existing regulations that are not adapted to the specific issues brought by AI systems.

The National Institution for Transforming India (NITI Aayog) issued the "National Strategy on Artificial Intelligence" in 2018. Though technology has the transformative capability yet it is in its initial stage, so it provides India to define its own area in AI leadership. This document recognizes artificial intelligence as a crucial path maker of India's progress and focuses on five sectors that are considered to benefit the most through the use of AI in solving societal problems. These five sectors are healthcare, agriculture, education, smart cities and infrastructure, and smart mobility and transportation. It covers issues like data privacy, security, and ethics and underlines the significance of ethical AI usage, governance, and responsible AI deployment. However, the approach is largely concerned with boosting AI adoption and does not include extensive regulatory systems to handle ethical, legal, and social issues.[11]

The foremost legal challenges in integrating AI into mental health care is data privacy. Mental health data is highly sensitive, and its misuse can have profound consequences for individuals. Current Indian laws, including the Information Technology Act, 2000, and the Mental Healthcare Act, 2017, offer limited guidance on regulating AI applications and ensuring data protection. Additionally, issues of liability remain unresolved. For instance, determining accountability in cases where an AI system provides inaccurate diagnoses or advice is a complex legal question. Another key difficulty is the absence of transparency in algorithms used by AI, which makes it impossible to determine how judgments are reached and whether they are bias-free.

ETHICAL IMPLICATION OF AI IN MENTAL HEALTH-CARE

One of the foremost ethical challenges of use of AI in Mental Healthcare is application of Black Box AI in mental Healthcare. This technology is used for many purposes like Chatbots and Virtual Assistant in places where Mental Health Professionals are scarcely accessible or accessibility is limited. It is used in the field of Research and Drug Development & Discovery, firstly to analyze any type of biological data like blood test or physiological responses and also to analyze psychological data like questionnaires responses, therapy session outcomes, facial expression etc. It is used in identifying the biomarkers related to mental health conditions by scrutinizing the data. After analyzing the data and identifying the biomarker for a particular patient it can specific treatment that will allow the patient to respond quickly. The AI can also analyze the plethora of chemical compounds which can be used to cure the mental problem of that patient and also the possible side effects. Now this Black Box Ai uses a complex algorithm and calculation to calculate and analyze the large amount of data and to provide unique solutions to the problems which are generally not easily solvable by human intelligence. The logic and data used to reach the output by this Black Box AI are not accessible, making how they operate becomes unclear.

The other ethical challenge includes privacy and confidentiality of large amount of sensitive data of public. For instance the Unique Health Identification (UHID) system initiated by All India Institute of Medical Sciences (AIIMS) to provide randomly generated 14 digit number under the Ayushman Bharat Digital Mission regardless of whether they have visited AIIMS or any other specific hospital. Now after 2016 AIIMS asked the Gov. to link the same number with Aadhar for centralized storage of patient's health record. Though it is still not mandatory and is under consideration but implementing it will primarily attack the confidentiality of patient's data and moreover private hospitals may be reluctant to share their patient's data.

Apart from these diagnosis by machines having artificial intelligence instead of humans with their human intelligence makes the process very mechanical and not empathetic. The human-machine interaction will be looked down in place of long practice of human-human interaction. Though the AI can be super accurate and efficient in diagnosis and detecting ailments but it lacks the compassionate and empathetic nature which can never be achieved by robotic doctors. So the inclusion of AI can cause disturbance the therapeutic relationship, which is crucial for effective mental health care. The automated care delivery raises questions about the erosion of the human connection, which is central to mental health treatment.

It also must be taken into consideration that while training the the AI models the data they are fed on for a particular work may sometimes not sufficient to represent the total diverse society. It sometimes lead to incorrect diagnosis and treatment. On a serious note humans do express their emotions and wellbeing through their way to speaking. For instance patients suffering from depression is more monotonous and express them slowly. While a person with anxiety disorder may have higher pitch and talks nervously. These humanistic behavior may sometimes be overlooked by automated machine centric systems which understand and take the input problem based upon a particular training. which many times lacks the intelligence and compassion to understand human moods.[12]

RECOMMENDATIONS

Chatbots in mental healthcare provide immediate support and assistance any time anywhere especially to those who are reluctant to get traditional mental healthcare. However, incorporating chatbots in mental healthcare must be combined with strong ethical criteria to assure the usefulness and safety of these digital solutions.[13] It is vital to safeguard the user's privacy, anonymity, and data security. Furthermore, it is crucial that the system used to handle this data maintains transparency regarding their collection, storage, and utilization. This transparency builds trust between users and chatbots. There must be a Global Standard about privacy and confidentiality of what information are stored in the AI generated machines after the diagnosis and treatment of a particular patient. Moreover how such information are being communicated to the patient as compared to the communication by a doctor to his/her patient needs to be taken care. The Oviedo Convention, known as the Convention for the Protection of Human Rights and Dignity of the Human Being with respect to the Application of Biology and Medicine, is an international legally binding instrument which talks about the protection of human rights in biomedical fields. Though this convention is a legally binding instrument for Council of Europe and India is not a part of it and though it does not expressly talks about Artificial Intelligence related issues and its administration but it provides a framework for protection of human rights that can be applied with respect to Artificial Intelligence.

In order to tackle the AI Algorithm bias the data which is fed on while training the AI generated machines must be representative of a range of demographic groups, economic strata, language, socioeconomic conditions. Such data must be balanced and cover the underrepresented population. The AI centric diagnostic machines must be programmed to understand diverse languages and dialects. Data labeling must take into account several views and cultural conventions. It must be ensured that the AI algorithm can identify potential disparities across different demographic groups separately. Developers must evaluate AI models on a regular basis to update them when new data becomes available. The AI machines must also be programmed to understand human emotions to get

accurate diagnosis and treatment, as the tone of a patient talks plethora about his current condition.[14]

When AI makes any decision regarding the mental health of a patient , it uses the data that was previously programmed and fed in to analyze and make proper observation to give adequate treatment. But due to the use of black-box AI the factors upon which the diagnosis and treatment is made remains under suspicion and not intelligible. Thus in such cases use of Explainable AI (XAI) can reveal the factors and the reason behind the decision. It can also provide insights about the decision making process which will help the developers to make necessary improvements in the system. By understanding the rationale behind AI predictions, healthcare providers can provide effective treatment plans to individual patients. XAI is used in various systems that monitor an individual's behavior and well-being through data collected from wearable devices, apps, or other digital tools like smartwatches. It helps to explain the significance of monitored data and its consequences on that individual's health. The use of XAI in mental healthcare is still in nascent stage in India but there are some applications of it in mental healthcare. Different AI powered mental healthcare apps like Wysa, Woebot, Joyable, and Talkspace are gaining popularity. They provide round the clock support and makes mental healthcare easily accessible specially in remote areas.[15]

As AI relies on a tremendous amount of personal data about an individual, protecting the privacy and confidentiality of those data is crucial. As data related to mental health of a person is highly sensitive data, so its protection is not only a legal obligation but also an ethical concern. The Digital Personal Data Protection Act, 2023 and Mental Healthcare Act, 2017 both needs more refinement regarding accountability of AI centric decision, algorithm transparency. Though The Digital Personal Data Protection Act, 2023 talks about Data Minimization, it may provide explicit provisions regarding collection and storage of data with respect to mental health. The Act can provide provisions for informed consent i.e how the data collected by AI will be used. The Act can make strict provisions regarding auditing and monitoring of AI driven systems to ensure its compliance with data protection and ethical standards. Apart from such amendments, Data Encryption should be made mandatory to protect the personal data from unauthorized usage. The encryption will ensure that even if the data is accessed unauthorizedly, it will still remain unreadable. The access to such data must be protected with a multi-layered verification system. There must be strict provisions regarding limited and optimum data to be used and stored by the AI centered machines with respect to mental healthcare which will be needed for diagnosis and treatment. If treatment of a patient gets complete and the patient gets cured then there must be an integrated system of auto-deletion of the personal data related to that person.

The Mental Healthcare Act 2017 on the same note primarily focuses on the personal rights with mental illness, access to mental healthcare, provides a comprehensive framework for mental healthcare but does not provide any provision relating to AI or digital technologies directly. Thus provisions are required regarding bias mitigation, data minimization and informed consent. Transparency in AI systems is essential with respect to the outcomes is essential to allow both patient and authorities to understand the decision making process.

For effective integration and application of AI in mental healthcare, a skilled workforce and Research & Development wing is necessary. Thus funding for AI education and training is essential for developing and deploying AI powered mental health tools. The AI developers must be trained to adhere to the ethical consideration of mental healthcare related matter and the health professionals must be trained to effectively use AI generated system. Providing scope for interdisciplinary research among AI experts, Legal professionals and mental health professionals is essential to ensure development and integration of artificial intelligence must at par with ethical, legal and social dimension of mental healthcare.

CONCLUSION

The integration of AI powered tools and systems into mental health care has revolutionized the accessibility, diagnosis mechanism and treatment recommendation in a country like India where there is an acute shortage of mental healthcare facilities. India is also a country where mental health related problems are looked down upon and also stigmatized. Thus inclusion of AI powered tools can facilitate individuals to make primary self diagnosis. But some areas must be addressed proactively while developing these technologies and these are data privacy, transparency and algorithm bias. It must be kept in mind that Virtual therapists rely on the data r=they are fed on by a human intelligence. Thus it can only go up to a certain point which its program supports and not beyond that. Though

the integration of Ai in mental healthcare provides easy access to users to share and get personalized opinions regarding their mental health related problems without disclosing it to the family members and protecting anonymity but ironically this technology is also encouraging them to segregate themselves socially. As positive social interaction is one of the primary weapons to improve psychological well being.

India's current legal framework is not sufficient to cope up with the emerging legal and ethical challenges that pop up with these new technologies. Digital Personal Data Protection Act, 2023 and the Mental Healthcare Act, 2017 though gives primary foundation but they require further refinement and amendments to specifically address AI related issues. Even if AI offers quick analysis and efficient solutions to the mental health related problems but it must be kept in mind that human empathy, compassion and therapeutic relation between doctors and patients are mostly preferred in any type of treatment from time immemorial. The former must not overshadow the latter. India must include mental health under health laws and provide a regulative privacy protection framework which also needs to be updated on a regular basis. Lastly on one hand the stigmatization of mental health related problems must be erased from the mind of the general public through several campaigns., and on the other hand faith must be generated in their mind with respect to the use of AI in mental healthcare emphasizing improved outcomes and increased access for remote population. The population must endeavored trust in the system concerning the privacy and confidentiality of their personal data. The AI and the machines must be an aid to human intelligence but not a master of it.

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