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Can AI Significantly Improve Mental Healthcare?

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The evolution and expanding application of Artificial Intelligence (AI) in healthcare, and mental health in particular, has been profound in the past three years. However, the mental health tech space globally witnessed funding worth $713 million in 2023 year-to-date (YTD), a 52.5 per cent decline from $1.5 billion raised in the same period in 2022 and a 79 per cent decline from $3.43 billion in 2021. While the funding seems to be plummeting , the increasing use of technologies like artificial intelligence might have a boost lined up for mental healthcare in the coming months. Let’s delve deeper to find out if AI could further fortify mental healthcare’s footprint in a new realm.

Individuals and corporations across the globe are now cognizant of the importance of proper mental health in ensuring all-round wellbeing and steady development of the society. Over the past three years, mental health tech startups have helped in increasing the affordability and accessibility to mental healthcare.

The World Federation of Mental Health had named the theme for the World Mental Health Day (WMHD) 2023, celebrated on October 10, as 'Mental Health is a universal right' and the startups innovating in this sector are playing a vital role in achieving this goal with the use of new technologies.

As per a recent report by Tracxn Technologies, the global mental health tech space witnessed a peak in funding of $4.7 billion in 2021. Similar to other healthcare businesses, mental health startups saw a significant rise in demand in 2021 owing to the mental health issues brought on by the pandemic.

However, the mental health tech space, globally, witnessed funding worth $713 million in 2023 year-to-date (YTD), exhibiting a decline in comparison to 2022 and 2021. This plunge in funding is primarily due to the ongoing economic slowdown and other macroeconomic factors affecting the cash flow globally.

Most of the funding this year so far in this sector has come through late-stage investments, which stood at $340 million, a 35 per cent reduction compared to $527 million raised in the same period in 2022 and a decline of 85.8 per cent compared to $2.4 billion raised in the same period in 2021. Further, 2023 has witnessed 17 acquisitions till date, a drop of 22.7 per cent from 22 acquisitions in the same period in 2021. The numbers have remained consistent compared with 2022.

At present, the US has the maximum number of companies in this space (2,360) followed by the UK (662) and India (429).

“Beyond the monetary gains, investing in mental health startups can certainly garner profound societal benefits. By making mental healthcare more accessible and mainstream, the startups can be catalytic in busting the age-old myths and

eradicating stigmas associated with mental health issues in India. On the home turf, traditional taboos around mental health are slowly being demolished. Additionally, the government and NGOs are becoming more proactive in addressing these issues, offering opportunities for startups to collaborate or receive support. In terms of customisation, artificial intelligence (AI) can analyse chunks of data throughput quickly. This means that AI-aided mental health solutions can potentially provide personalised feedback or therapeutic suggestions based on individual user data, thus enhancing the quality of care", points out **Ashutosh Kumar Jha, Chief Strategy Officer, Artemis Medicare Services.**

Tech tools & mental health

Mental health teleconsultation and digital therapeutics for mental healthcare have been some of the top performing business models in 2023. For instance, teleconsultation has played a vital role in countries like India where there are 0.75 psychiatrists per 100,000 population which is significantly low compared to European countries like Germany with 27 per 100,000 inhabitants.

Recent research by MIT's Rosalind Picard and Massachusetts General Hospital's Paola Pedrelli has shown that artificial intelligence (AI) can help reduce the rate of mental disorders. In fact, the use of technologies such as AI is greatly increasing the accessibility to mental health professionals and this sector can potentially see more investments going ahead as awareness rises among the masses.

"By embracing AI, psychoanalysts are better equipped to concentrate on delivering direct patient care and doing in-depth research, which eventually improve patient outcomes, increase access to mental health services and augment general efficiency in the field," comments **Dr Malini Saba, psychologist, philanthropist, human rights activist, and the Founder and Chairman of Anannke Foundation**.

Sharing similar views, **Dr Rahul Chawla, Neurology Department, All India Institute of Medical Sciences (AIIMS), New Delhi and an associate consultant in the neurology department of PSRI Hospital, Saket** says, "AI tools use various mechanisms to diagnose matters of the mind and trace the alterations in behavioural patterns of the subjects under treatment, such as electronic health records, their activity on social media, and the use of search engines. Besides, there are mental health-specific questionnaires and mood-rating scales to help characterise and classify mental health illnesses, such as depression, bipolar disorders et al. If there are any red flags like suicidal ideation or possible attempts, thoughts and threats, the same can activate SOS alarms and send possible guidance. While most measures look effective on paper, in a practical sense, the majority of the tools are still in research phases. However, no FDA (Food and Drug Administration)-approved or FDA-cleared AI applications currently exist in psychiatry, as far as my knowledge goes."

It is often quizzed if AI can detect symptoms of neurological disorders before it is too late. Theoretically speaking, AI can help sift neurological disorders by scanning data obtained from patient files, dementia-screening questionnaires and even brain imaging. This could prove to be beneficial for patients suffering neurodegenerative conditions with progressive courses like dementia, namely Alzheimer's disease or various forms of Parkinsonism. AI may also facilitate monitoring for compliance with and response to the treatment. Further, it can track changes in speech pattern, tremors and even limb stiffness in patients with parkinsonism through speech recognition and smart wearables.

Futuristic element

AI technology has so far been adopted by many Indian hospitals in their mental healthcare wings. AIIMS Delhi is designated as the Centre of Excellence for AI in healthcare. "There are actually many research projects running at AIIMS, Indian Council of Medical Research, Indian Institute of Technology- Delhi, National Institute of Mental Health and Neuro-Sciences pertaining to mental health and AI. However, AI algorithms need validation in the real world setting. After all, these are all research projects, and their results and practical applications in the pragmatic world are yet to be viewed and verified," cautions Dr Chawla.

In contrast to humans, AI cannot read the human mind or thoughts. However, it may dissect data and decrypt patterns to draw conclusions or predictions about a person's goals or his state of mind.

Nevertheless, the application of AI into the field of mental health apparently has a bright future. AI-driven solutions will probably continue to develop and improve personalisation, accessibility and effectiveness of mental healthcare. "However, as AI technologies steadily make rapid advancements in this field, ethical issues, data protection and preserving the human connection in therapy will keep surfacing as primary focal points. Therefore, for AI to reach its optimal level of performance and maintain superlative standards of care, it is imperative to forge a partnership with the mental health practitioners,"

believes Dr Saba.

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