31st Emirates Society Mental Health International Congress
Mental Health & Artificial Intelligence

EMA جمعية الإمارات الطبية EMIRATES MEDICAL ASSOCIATION

جمعية الإمارات للصحة النفسية Emirates Society of Mental Health

اتحاد الاطباء النفسانيين العرب Arab Federation of Psychtiarists

AI in Mental Health: Opportunities and Challenges

Fariha Khan, Counsellor
Health Call DHCC

INTRODUCTION

Since the onset of the COVID-19 pandemic, clinicians have observed a significant increase in individuals seeking help for anxiety and depression. This surge has put substantial pressure on health services, escalated insurance costs, and decreased workplace productivity and increase in death by . suicide.

Considering that mental health difficulties affect all aspects of an individual's biopsychosocial functioning it is a hugely important issue to tackle. Could we use technology safely to ease the pressure?

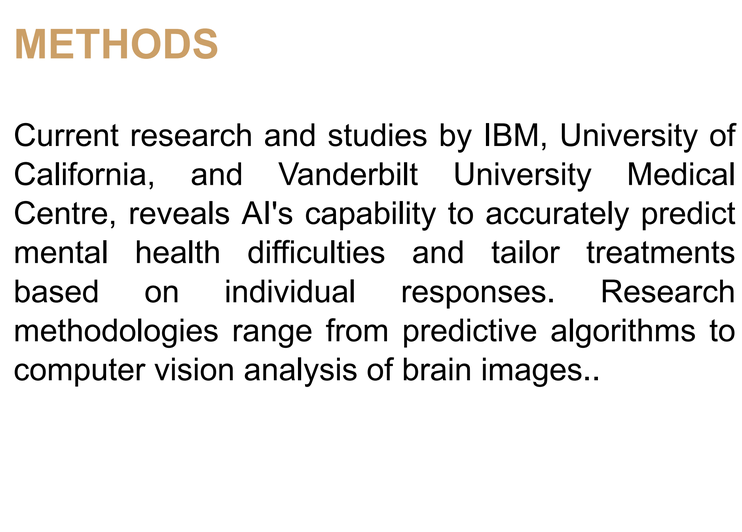
As things stand, we can see also a surge in individuals seeking online support not only from Google, but also from AI-powered chatbots, which offer advice and interventions such as cognitive behaviour therapy, Acceptance and Commitment Therapy, and Dialectical Behaviour Therapy. Additionally, AI is providing personalized therapy and teach coping skills during anxious states.

Moreover, wearable technology is also available sensing and interpreting body signals to offer help by collecting information on sleep, physical activity, and heart rate, assesses mood and cognition and suggesting behavioural adjustments.

AI no doubt presents a promising opportunity to alleviate pressures on health services and insurance costs and immediate help , however, there's 'an argument that human input is essential as this area is sensitive, human emotions are complex and subjective so research is imperative.

METHODS

Current research and studies by IBM, University of California, and Vanderbilt University Medical Centre, reveals AI's capability to accurately predict mental health difficulties and tailor treatments based on individual responses. Research methodologies range from predictive algorithms to computer vision analysis of brain images..



OPPORTUNITIES

In diagnosing and predicting patient outcomes, research carried out by IBM and the University of California reveals that AI was able to predict and categorize mental health difficulties with high accuracy. Research carried out at Vanderbilt University Medical Centre showed that AI had the potential to predict suicidality with 80% accuracy.

Ongoing research at Alan Turing Institute is focusing on AI to predict which individuals are most likely to develop mental health difficulty symptoms in their lives.

Research is also being conducted in using AI to create personalized treatments for certain mental health issues. Here AI is used to monitor symptoms and responses to treatment to broaden insight and adjust treatment plans. Research from University of California is focusing on creating personalized treatment plans for children with schizophrenia using data from computer vision analysis using brain images, importantly taking into consideration a crucial point that the material needs to be understood by clinicians who are not AI professionals.

AI is also being used to predict cases where patients are more likely to respond to Cognitive Behaviour Therapy.

AI can also be employed to predict when a patient will slip into noncompliance manage this by sending reminders and alerts to the patient and treating team. AI can also recognize patterns of behaviour or common situations that can cause noncompliance. With this information treating teams can develop strategy to counter this and support patients.

CHALLENGES

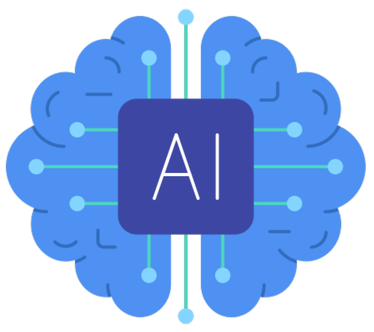
Despite all the above benefits, AI in mental health has huge challenges too. Data can be biased leading to inaccurate algorithms. Human emotions are complex and mental health conditions are multifaceted, therefore, there is a view that mental health needs a subjective approach with human input involving detailed assessments, monitoring, follow ups and consideration of patient's presentation, mood, feelings, thoughts and lived experiences.

AI could also distort maladaptive thought patterns affecting the mental health of vulnerable people who can be easily influenced or suggestible. Clear, guidelines and a regulatory framework should be in place before AI is deployed for safety. AI technology in mental health should be rigorously tested before it is released to the public.

A World Health Organization report highlights gaps in how AI is applied in mental health and risks associated with biases. There is also a lack of high quality diverse data and issues around privacy and confidentiality.

RESULTS

AI demonstrates high accuracy in predicting mental health conditions and identifying personalized treatment strategies. It aids in predicting patient adherence to treatment and detecting patterns of noncompliance, thereby enhancing patient support and treatment outcomes..



CONCLUSIONS

While AI presents significant opportunities in mental health, challenges such as biased data, ethical concerns, and the need for human input in subjective assessments remain. Collaboration between AI researchers, healthcare providers, and policymakers is crucial to ensure safe, effective, and ethical implementation of AI technologies in mental health. Addressing these challenges will pave the way for AI to become a valuable tool in combating mental health issues globally.

Importance of ongoing research, collaboration and continuous research is crucial to maximize AI's potential while safeguarding against its limitations and risks in mental health care.

BIBLIOGRAPHY

1. Ewbank, M.P., Cummins, R., Tablan, V., et al. (2020) 'Quantifying the Association Between Psychotherapy Content and Clinical Outcomes Using Deep Learning', JAMA Psychiatry, 77(1), pp. 35-43.
2. Marr, B. (2024) 'AI In Mental Health: Opportunities And Challenges In Developing Intelligent Digital Therapies'. Available at: https://www.psychotherapynetworker.org/article/ready-or-not-ai-is-here/ (Accessed: 23 June 2024).
3. World Health Organization (2021) ' Ethics and governance of artificial intelligence for health'. Available at: https://www.who.int/publications/i/item/9789240029200 (Accessed: 23 June 2024).
4. Marr, B. (2024) Generative AI in Practice: 100+ Amazing Ways Generative Artificial Intelligence is Changing.
5. Harris, T. (2023) The A.I. Dilemma - March 9, 2023, YouTube. Available at: https://www.youtube.com/watch?v=xoVJKj8lcNQ (Accessed: 23 May 2024).

ACKNOWLEDGEMENTS

I do not have any financial gain from this research.