

TECH & MENTAL HEALTH

I. DIAGNOSIS



by The Brainstorms Scientific

5

Only 5 mental health workers per 10 000 people

18

18% of people ages 18-54 in a given year show mental health symptoms (USA, NHS)

138 million Europeans suffer from mental health disorders (according to WHO)

20

People with mental disorders die ~20 years younger (1)

138

It's all in your mind

Neuroimaging & brain recordings provide a huge amount of data that algorithms can analyse. AI can classify brain imaging data into diseases with over 90% accuracy (2)

Let's pretend

Simulation modelling is used across fields, from aerospace to epidemiology. Modelling the diseased brains can help us understand illnesses and their origin (4)

Do you want to talk about it?

Language use is a great indicator for many psychiatric diseases and since Siri and Alexa, AI has greatly advanced speech technologies

Patients with schizophrenia talk "word salads": they often switch topic or give unrelated answers

Bipolar patients speak with different tone & pace in manic compared to depressed phases



Why Artificial Intelligence?

AI algorithms can learn from data & detect patterns humans don't see



Advances in dementia research were achieved by applying machine learning to patient data (3)



Researchers are developing apps to evaluate speech & notify doctors in case of warning signs (6)

AI can detect mental illness or predict suicide rates by analysing online behaviour on social media. (7)



References

- 1) WHO, 2020
- 2) Yahata, N. et al., Psychiatry and Clinical Neurosciences, 2017
- 3) Fruehwirt, W., et al., arXiv.org, 2018
- 4) Schwartenbeck & Friston, ENeuro, 2016
- 5) Gu, X., Psychopharmacology, 2019
- 6) Chandler, C., Schizophrenia Bulletin, 2020
- 7) Rezaii, N. et al., NPJ Schizophrenia, 2019