**AI-POWERED AUDIO BIOMARKER ANALYSIS FOR EARLY DETECTION AND MONITORING OF DEPRESSION AND ANXIETY**

Depression and anxiety are two of the most common mental health illnesses that negatively affect how a person feels, think and act. According to the World Health Organization (WHO), globally, an estimated 280 million people have depression, and 301 million people live with an anxiety disorder.

Current diagnostic approaches rely on self-reporting, and this can be influenced by patient recall bias (Simon et al., 2012) and social desirability bias (Latkin et al., 2017). Patients may find it hard to accurately remember and report their symptoms and some patients might want to underreport or overreport their symptoms due to social stigma. Another issue is the fact that clinical interviews can be time-consuming and in regions where there is a shortage of mental health professionals, it is important to maximize limited resources by augmenting the traditional mental health diagnostic approaches with automated and AI based mental health diagnosis.

AI-powered audio biomarker models can be used to augment some of the shortcomings of traditional mental health diagnostic and monitoring methods. They can be used to detect changes in emotional state based on vocal tone and word choice(Wu et al., 2024). They also have a lot of potential in identifying linguistic features associated with depression and anxiety (Singh, 2024). These models allow for flexibility as they can be deployed at home and when a patient experiences depression or anxiety episodes, the therapist can be promptly informed and could potentially intervene to aid the patient’s recovery.

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