

# INTEGRATING ARTIFICIAL INTELLIGENCE IN MENTAL HEALTH PRACTICE: A PERCEPTION OF MENTAL HEALTH PROFESSIONALS

GOKUL G<sup>1</sup>

II MSW

*Dr. M, V Shetty Institute of Professional Sciences and Management  
Vidyanagar Mangalore*

DR. PRAKASHA AMIN<sup>2</sup>

Professor

*Dr. M, V Shetty Institute of Professional Sciences and Management  
Vidyanagar Mangalore*

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## Abstract

*Artificial Intelligence has a wide range of applications across various industries and domains. It can bring enormous benefits to healthcare, by improving diagnosis and treatment, predictive analytics, drug discovery and development, virtual assistants and streamlining administrative tasks. However, to fully realize these benefits, significant challenges such as data privacy and security, bias in the data, lack of transparency, regulation and governance, and lack of understanding need to be overcome. This research study delves into health professionals' perspectives regarding the opportunities and challenges associated with implementing artificial intelligence (AI) in mental health care. The present study is descriptive and adopted a purposive sampling technique to interview 60 mental health professionals. The findings shed light on the apprehensions expressed by health professionals, such as concerns over the ethical implications of AI decision-making, data security and privacy issues, and the possibility of technology overshadowing the human element in patient care. By elucidating both the promising prospects and the potential obstacles associated with AI integration in mental health care, this research contributes valuable insights to the discourse surrounding the responsible and effective use of AI technologies in healthcare settings.*

**Keywords:** Artificial Intelligence, Health Care Professionals, Mental Health and Privacy

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## Introduction:

A sound mind is the key component of good health (Kumar, Kumar, Singh, & Bhandari, 2012). Since its inception, the World Health Organization has included mental well-being in the definition of health. The well-known definition of WHO (2001) states that 'health

is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. Mental health denotes a person's emotional, psychological, and social well-being, which affects one's thinking, feelings, and actions. Mental health is important at every stage of life from childhood and adolescence through adulthood to old age as it helps to cope with stress, relate to others, and make choices. Defining mental health is essential, although not always necessary, to achieving its improvement. Differences in values across countries, cultures, and genders can appear too great to allow a consensus on a definition. However, just as age or wealth each has many different expressions across the universe and yet has a core common-sense universal meaning, so too can mental health be understood without restricting its interpretation across cultures.

Mental health problems affect people of all ages, regions, and socioeconomic strata causing personal suffering and impairment of daily functioning as well as imposing financial burden on the family and society. The prevalence of mental disorders increased in the past two decades without a related increase in the mental health facilities for treatment. The burden also increases personal distress affecting socially sanctioned positions and roles: relationships, education, employment or source of livelihood, and participation in social activities. Besides effects on oneself, it also affects others and communities at large - diminished productivity due to absenteeism from work or long-term disabilities due to trials occasioned by the inability to fulfil expected roles; distress among families; expenses related to health care and lack of access to treatment when needed with the continuance of such costs over a period adding further to psychological stress through causing financial burden on poor family leading further impoverishment i.e., decreased ability of family members to maintain a livelihood (Meghrajani et al., 2023).

### **Artificial Intelligence in the Digital Era:**

Artificial intelligence (AI) is defined as the ability of an artificial entity to solve complex problems using its own intelligence. Computer science and physiology are combined in Artificial Intelligence. In layman's terms, intelligence is the computational component of one's capacity to attain goals in the real world. Intelligence is defined as the capacity to think, envision, memorize, and comprehend, see patterns, make decisions, adapt to change, and learn from experience. Artificial intelligence is focused on making computers behave more humanlike and in a fraction of the time it takes a person to do it.

Artificial intelligence is also concerned with pushing the boundaries of practical computer science in the direction of systems that are adaptable, flexible, and capable of forming their own analyses and solution techniques by applying general knowledge to specific situations (Mahto, 2023).

### **Artificial Intelligence in Mental Health Care:**

Artificial Intelligence is a critical part of social development, and it acts as the driving force for the advancement of employment efficiency, the costs of the workforce, the improvement of the human-capital ratio, and the formation of new employment opportunities (Zhang & Lu, 2021). It is increasingly being integrated into various aspects of mental health care and research, offering innovative solutions to improve diagnosis, treatment, and support for individuals dealing with mental health issues. Present-day medical care improved substantially due to the use of Artificial Intelligence technologies where, mental health professionals such as Psychiatrists, Psychiatric Social Workers, Psychologists and Psychiatric Nurses largely depend on AI tools to provide specific mental health intervention. The analysis of healthcare records is essential for early disease detection and built-in healthcare practices (Manikandan, 2023). The Artificial Intelligence play several roles in providing mental health care;

**Screening:** Artificial Intelligence aids in understanding mental illness, and screening severe conditions like bipolar disorder, Alzheimer's, and PTSD. It analyzes data from social media to identify patterns related to mental health issues, but recent studies show variable performance in diagnosing mental illnesses (Balamurugan et al., 2023).

**Therapies:** Artificial Intelligence-powered virtual therapists like Woe Bot offer cognitive behavioural therapy, reducing anxiety and depression symptoms during the COVID-19 pandemic. Virtual reality therapy allows patients to confront fears in a controlled environment. Industrial AI enhances workers' mental health, while speech analysis technology helps identify patients at risk of depression or anxiety and monitor therapy effectiveness (Balamurugan, and Radhakrishnan, 2023).

**Diagnostic Assistance and Risk Prediction:** Artificial Intelligence algorithms analyze clinical data to accurately diagnose mental health disorders. Machine learning models identify patterns, biomarkers, and risk factors, enabling early detection and intervention, such as assessing depression or schizophrenia likelihood (Cosic et al., 2020).

**Personalized Treatment Recommendations:** Artificial Intelligence algorithms analyze patient data to create personalized treatment plans, integrating evidence-based guidelines and clinical expertise. This optimizes therapeutic outcomes, minimizes adverse effects, and enhances patient engagement and adherence.

**Digital Therapeutics and Virtual Interventions:** AI-powered digital therapeutics, including smartphone applications, virtual reality simulations, and chatbots, provide accessible interventions for managing mental health conditions, extending the reach of mental health care beyond traditional clinical settings, overcoming barriers to access and stigma (Admin & Lavrentyeva, 2023).

**Continuous Monitoring and Early Intervention:** Wearable devices with biosensors and AI can monitor physiological signals, behavioural patterns, and mood fluctuations, providing real-time mental health insights, early warning signs, and personalized treatment plans.

**Natural Language Processing (NLP):** Artificial Intelligence techniques like natural language processing and sentiment analysis can provide valuable insights from unstructured data, enabling researchers to explore complex relationships, validate hypotheses, and generate evidence-based recommendations (D'Alfonso, 2020).

**Machine learning:** Machine learning algorithms are being utilized to analyze data from electronic health records (EHRs), brain imaging, and genetic tests to identify biomarkers of mental health conditions and predict effective treatments (Iyortsuun et al., 2023).

**Telemedicine:** Telemedicine has led to the rise of Artificial Intelligence applications, such as wearable devices monitoring vital signs and chatbot therapy. These tools can assist in remote patient care, providing services like anxiety reduction, stress management, and suicide prevention, enhancing the work of psychologists and healthcare professionals (Nazarov et al., 2024).

**Research and Data-driven Insights:** Artificial Intelligence techniques, like natural language processing and sentiment analysis, can extract valuable insights from unstructured data sources, enabling researchers to explore complex relationships, validate hypotheses, and generate evidence-based recommendations (NIMH, 2001).

### **Challenges in Using Artificial Intelligence in Mental Health Care:**

Artificial Intelligence can be beneficial in predicting mental health issues, creating personalized treatment plans, and ensuring compliance. However, it also presents challenges like Artificial Intelligence bias, which could perpetuate unreliable predictions

or social prejudice. World Health Organization report into challenges around using Artificial Intelligence in mental health treatment and research recently found that there are still “significant gaps” in our understanding of how Artificial Intelligence is applied in mental healthcare, as well as flaws in how existing Artificial Intelligence healthcare applications process data, and insufficient evaluation of the risks around bias, as discussed above (Marr, 2024).

- **Ethical considerations:** The use of Artificial Intelligence in mental health care raises ethical concerns like privacy, consent, and potential algorithm biases, necessitating the implementation of ethical guidelines and regulations.
- **Human-AI interaction:** The balance between Artificial Intelligence and human interaction is crucial in mental health care, ensuring that patients and professionals maintain a human element.
- **Data security and privacy:** Artificial Intelligence requires robust measures to protect privacy and prevent data breaches or unauthorized access, as it relies on the collection and analysis of sensitive personal data (Warrier et al., 2023).
- **Limited generalizability:** Artificial Intelligence models trained on specific populations or datasets may not generalize well to diverse populations or real-world clinical settings, making inclusivity and accuracy crucial.
- **Lack of regulation and standardization:** The field of Artificial Intelligence in mental health care is rapidly evolving, necessitating the creation of guidelines and standards for its development, deployment, and evaluation (Rana & Singh, n.d.).

Artificial Intelligence in the digital era drives innovation across diverse sectors, offering opportunities for efficiency, personalization, and improved quality of life. However, it also necessitates careful consideration of ethical implications, regulatory frameworks, and societal impacts to harness its full potential responsibly.

### **Rationale of the Study:**

Mental health problems are prevalent worldwide and are caused by genetic and environmental factors and traditional therapeutic approaches struggle to meet the escalating needs of individuals seeking support. The integration of AI in providing mental health care is a promising solution to address the growing demand for counselling services and to address several critical needs and challenges within the field. Further, AI also can help patients to improve their quality of life and reduce stress. Making use of

the insights generated by AI, mental health professionals can assess what a patient needs most emotionally at this time and tailor interventions accordingly. AI also monitor online activities and social media usage to detect signs of cyberbullying, anxiety, or depression in young users. Early intervention through AI can help develop healthy emotional coping mechanisms and prevent the escalation of mental health issues. AI can assist these people by offering personalized stress management strategies, facilitating relaxation techniques, and providing reminders for self-care activities. Thus, the present study focuses on the perceptions of mental health professionals about the opportunities and challenges of Artificial intelligence in the Mental health field. Collaborative efforts between AI technologies and mental health professionals can ultimately lead to improved outcomes and better quality of life for individuals seeking mental health support.

### **Aims & Objectives of the Study:**

The study aims to understand the perceptions of Mental health professionals in the integration of AI in providing mental health care. The study attempts to understand the opportunities and challenges of incorporating AI tools in providing mental health interventions. The objectives of the study are;

- To identify the perception of Mental Health Professionals regarding the opportunities of integrating Artificial Intelligence in Mental Health Care.
- To find out the challenges in incorporating Artificial Intelligence in providing Mental Health Care.

### **Methodology:**

The population of the study is comprised of mental health professionals working in psychiatric settings of selected hospitals in Karnataka and Kerala State. Altogether, 60 respondents were selected through purposive sampling, and the structured questionnaire was used to collect data from the respondents. The first part of the tool attempts to identify the demographic details of the Health Professionals; the second and third parts of the tool attempt to understand the perception of Mental Health Professionals regarding the opportunities and challenges of incorporating Artificial Intelligence in Mental Health Care.

### **Findings & Discussion:**

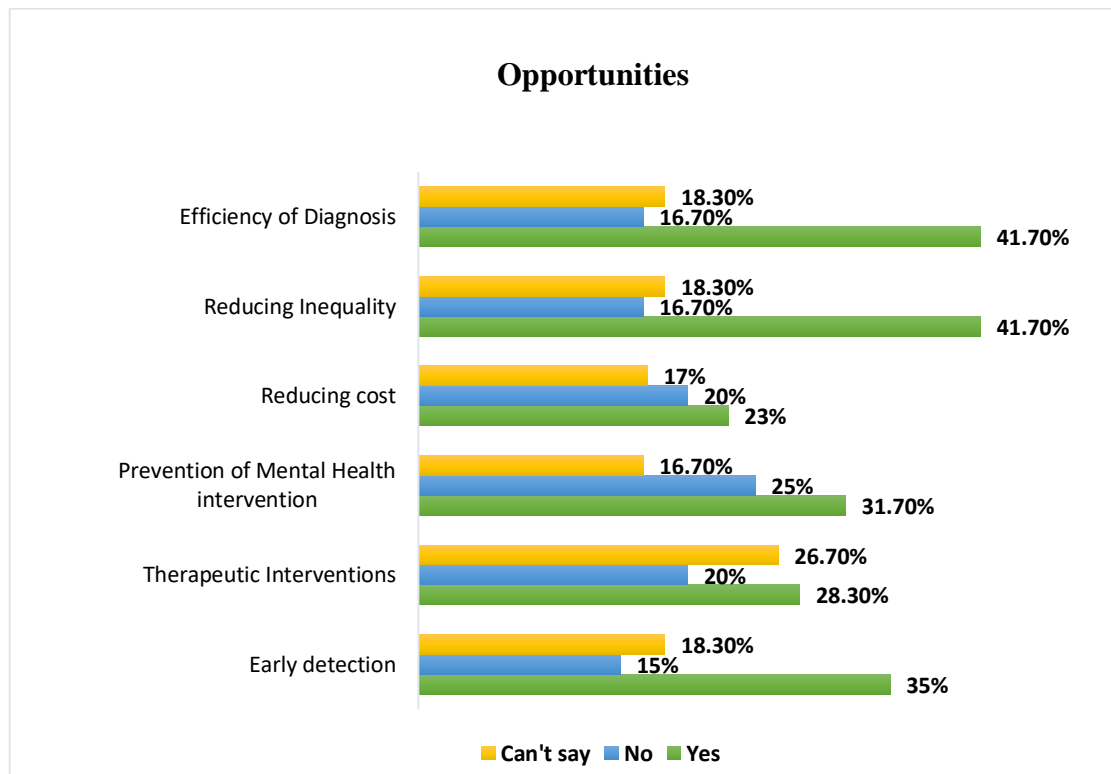
#### **Table 01: Socio-demographic details of the Mental Health Professionals:**

<b>Variables</b>	<b>Particulars</b>	<b>Frequency N=60</b>	<b>Percentage (%)</b>
Age	25-35	46	76.6
	35-45	10	16.6
	45-55	3	5
	55-60	1	1.7
Gender	Male	22	37
	Female	38	63
Education	Graduation	12	20
	Diploma	8	13.30
	Post-Graduation	39	65
	Other	1	1.7
Designation	Social Worker	39	65
	Psychologist	7	11.7
	Psychiatric Nurse	9	15
	Others	5	8.3
Year of Experience	0-5 years	47	78.30
	5-10 years	12	20
	10-15 years	1	1.70
No. of cases handled per day	0-5	39	65
	5-10	13	21.7
	10-15	6	10
	15 Above	2	3.3
Training received	Yes	28	46.7
	No	19	31.7
	Currently pursuing	13	21.7

The demographic details of the respondents (Table 01) indicate that 76.6 percent of the health professionals belong to the age group of 25-35 years, while 63 percent are female. 65 per cent of respondents are social workers. The highest per cent of the respondents (78.30 percent) are new to the profession and 46.7 percent of respondents are currently pursuing additional training related to their profession.

**Figure 01: Opportunities for Integrating Artificial Intelligence in Mental Health Care:**

**N= 60**

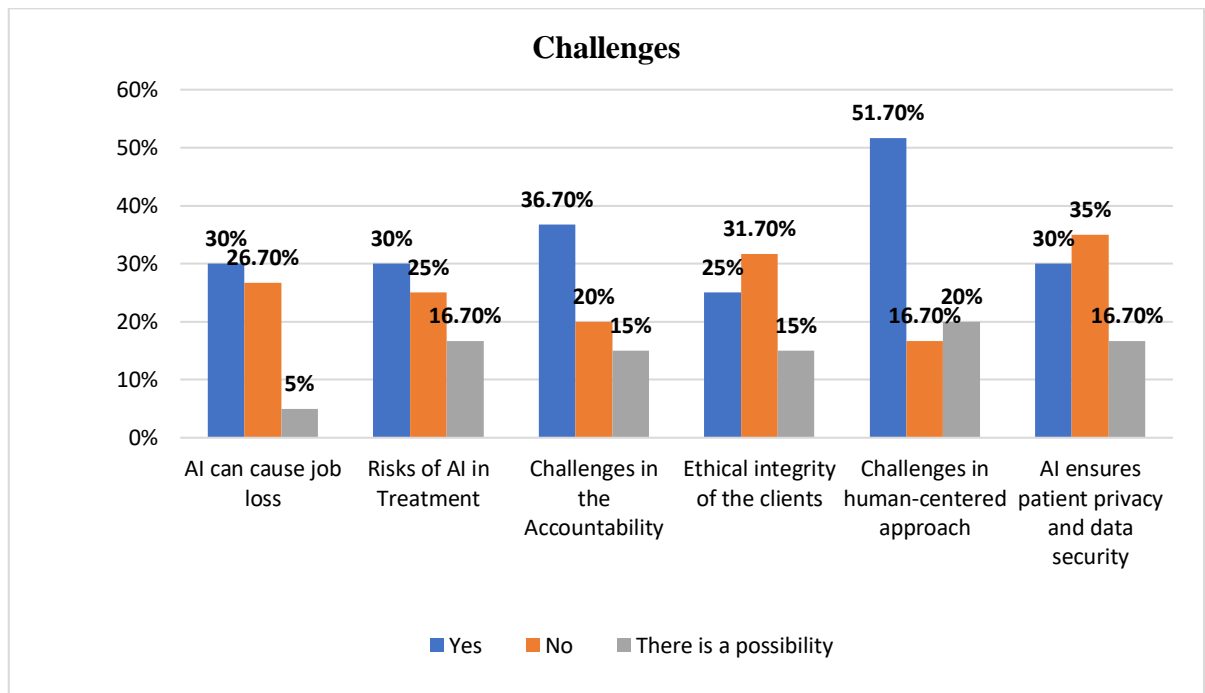


The findings reflect that there are benefits of collaborating Artificial Intelligence in the Mental health practice. The highest percentage of the respondents opined that AI can help in the early detection (35 %) of mental health problems, while Effective therapeutic interventions (28 %), Prevention of Mental Health relapses (31.70%), Reducing the cost (23%), Reducing inequality and Efficiency of Diagnosis (41.70%) are the other advantages of collaborating AI in mental health care.

In the dynamic intersection of artificial intelligence and mental health, transformative advancements are reshaping the way we approach and manage psychological well-being. The field of mental health care offers new avenues for early detection, personalized interventions, and therapeutic support (Zhuravel, 2023).



**Figure 02: Challenges in integrating Artificial Intelligence:**



The result on the challenges of AI implementation in Mental Health care indicates that the majority of the respondents (30%) believed that the integration of AI can cause job loss, 35 percent of respondents opined that there are risks in making treatment decisions, 31.7 percent of respondents concerned about the ethical integrity, 35 percent of respondents are opined AI can't ensure the privacy and data security and 51.7 percent of respondents opined there are challenges in maintaining human-centred approach.

Rapid technological change and development have led to an era of complex AI technology and applications. In addition to the positive effects of AI, such as increased production and indirectly lowered costs in factories and production lines, the reduced potential of errors and increased efficiency, replacement of human labour in dangerous situations, etc.; along with progress in technology come negative outcomes such as increased unemployment rate, human laziness, decreased face to face jobs, etc., which may lead to psychological problems (Lovejoy, 2019).

**Recommendations:**

AI presents numerous opportunities to augment the capabilities of mental health professionals, it's essential to approach its integration thoughtfully, balancing technological advancements with human expertise and compassionate care. The first step is educating professionals about what AI is and how it can be used in mental health care.

This includes understanding the capabilities of AI in enhancing therapy sessions, improving documentation accuracy, and analysing patient data more effectively.

Improving accountability in AI systems used in mental health care is crucial for ensuring ethical practices, patient safety, and effective outcomes. To ensure patient privacy. This can be achieved by inventing advanced encryption techniques which can enhance security by protecting sensitive information, and the database of the patients.

### **Conclusion:**

AI will play a crucial role in providing mental health care and it has exceptional prospects and is more promising than ever. The present study identified that ethical issues, cybersecurity, cultural sensitivity, a lack of data analytics diversity, and language barriers remain concerns for implementing AI in mental healthcare. Considering these problems, there is a need for empathy, human connections, holistic, personalized, and multidisciplinary approaches in integrating AI into Mental health care. Therefore, future comparative trials with larger sample sizes required to evaluate different AI models used in mental healthcare across regions to fill the existing knowledge gaps.

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