

## Role of Artificial Intelligence in Psychological and Mental Well Being: A Quantitative Investigation

<sup>1</sup>Raino, <sup>2</sup>Rinkey, <sup>3</sup>Neelam Kumari, <sup>4</sup>Kashinath Chandelkar,  
<sup>5</sup>Kanchan Chetiwal

Received: 10- June -2023

Revised: 16- July -2023

Accepted: 12- August -2023

<sup>1</sup>Principal, Akal College of Education, Eternal University, Baru Sahib, H.P., India

<sup>2</sup>Assistant Professor, Shri Atmanand Jain Institute of Management and Technology  
Ambala City, Haryana, India

<sup>3</sup>Assistant Professor, Dept. of Psychology, Akal College of Arts and Social Sciences,  
Eternal University, Baru Sahib, H.P., India

<sup>4</sup>Assistant Professor, NFSU Goa Campus, Goa, India

<sup>5</sup>Research Scholar, Department of Education, Akal College of Arts and Social Sciences  
Eternal University, Baru Sahib, H.P., India

### Abstract

Artificial Intelligence has developed over years to a level where it plays significant role in diverse sectors including healthcare. Its huge potential to influence psychological and mental well-being of people not only seeks attention but also raises the necessity to develop ways to explore AI and its possibilities in psychology and medical care. Several studies conducted depict various ways in which AI powered tools and therapies aid in assisting people to overcome major psychological issues such as depression, stress and anxiety. AI driven methods disrupt conventional methods of therapy and counselling by incorporating innovative facilities to address and comprehend mental health concerns of varying groups from , diverse backgrounds. However, there are several ethical and accessibility related concerns in regard to the role of artificial intelligence in dealing mental health issues which further increase the need to explore this arena. Comprehensive research on this area will help develop perspectives on AI as well as its challenges there by providing scope to expand and construct use of AI in medicine and psychology in a better way. 197 is the sample size considered for this study from patients suffering from different psychological and mental illness. Factors identified in this study are Monitor patients remotely, AI based Personalized Counselling, Quick & Easy diagnosis, AI based Conversation tool – Chatbots.

**Keywords-**Artificial Intelligence, Psychology, Mental Health, Well-being, Medicine.

### Introduction

In contemporary world that is driven by technology, artificial intelligence plays huge role in transforming various domains of human life. AI based facilities refer to techniques where computer systems develop methods to perform diverse tasks, that usually require unique human intelligence, including visual perception, processing of language and decision-making. The incorporation of artificial intelligence into medicine, especially to the arena of psychology and mental health has opened up immense possibilities having the capability to redefine perspectives about mental health. The role of artificial intelligence in the emotional and mental well being of people not only revolutionizes psychology and medicine but also ensures that mental health services reach to larger mass beyond the existing barriers related to access of the same.

The conventional method of therapy and counselling rely upon direct interaction between practitioners and patients. However, there is huge stigma and stereotypes associated with accessing mental health services which in turn impact reliability of such facilities. Arrival of AI and its technology has significantly impacted the availability, affordability and accessibility of mental health services in a positive way allowing it to reach large number of people. D'Alfonso (2020) put forward the unique ability of AI to understand and decode natural language process which eventually help in the development of conversational **chatbots**. The advancement of such chatbots aids in providing immediate emotional assistance to those in requirement of mental health services. The data and algorithm also help identify potential mental health issues earlier such that incorporation of AI into mental health care increases the scope of modern psychology.

The integration of AI into mental health care rises several ethical **issues and challenges** that necessitates the significance of persistently addressing and evaluating AI driven techniques. These concerns include issues in regard to privacy and data security which automatically effect customer receptivity towards AI powered tools and methods. Fiske and Buyx (2019) address the need to identify various social and ethical challenges that artificial intelligence and its incorporation into mental health brings out. Since mental health concerns possess nature of extreme sensitivity and personal elements, risks brought by improper approach towards the same can be very complex and problematic. Therefore, it is important for medical practitioners to accustom themselves to advances of AI facilities in order to make certain effective incorporation of artificial intelligence in psychology.

AI driven tools and facilities must also be made inclusive and equitable to all irrespective of any demographic and social factors. It is necessary to identify potential **barriers and disparities** in adoption of artificial intelligence-based services in order to ensure adequate accessibility of mental health resources to every section of society. There is a need to conduct extensive research and empirical analysis that explore intricate relationship between AI and evolving psychology to comprehend challenges and limitations in this arena. By properly addressing and resolving these challenges, there opens up scope to utilize the transformative power of artificial intelligence constructively, there by enhancing mental health services and resources paving way to equitable and accessible mental health care facility.

### **Literature Review**

Artificial Intelligence over recent years has occupied several domains including healthcare. Researchers and medical practitioners explore diverse ways to incorporate AI techniques in dealing with mental health concerns of people, emphasizing role of artificial intelligence in the field of psychology and medicine. AI has also successfully taken place of traditional therapeutic methods raising the need to explore and understand various concerns associated with the same. Several studies have been conducted to analyze significance of AI in the arena of psychology as well as to comprehend its impact on community healing and well-being of people.

In the contemporary world that witness advent of technology, AI has been facilitated in mobile phones that cater to personalized mental health caring. D'Alfonso (2020) analyzes the role of AI in mental health by emphasizing the ability of this facility to harness language in the form of computer data. With this power of processing natural language, AI facilities not only depict capabilities of inferring mental health but also provide scope of developing conversational agents that give adequate counselling and therapy to people. Apart from this, AI also play huge role in managing the flow of patients in mental health services. Dawoodbhoy and fellow researchers (2021) conducted a study that explore role of AI in addressing the ever-expanding demand for mental health services by collecting data, allocating resources and effectively managing patient inflow. The study confirms that with effective digital phenotyping and use of AI facilities, one can transform mental health services to a more personalized manner.

Dekker, De Jong, Schippers and others (2020) analyze how academic institutions make use of integrated psychological AI facilities to understand and help students with their mental health problems. AI driven chatbot facilities are utilized by the mental health department of these institutions to communicate to students, prioritize their social and health related goals as well as help them deal with stress and anxiety in regard to academics. Fulmer and Joerin (2018) talk about diverse stigma that students face in dealing with stress, anxiety and other mental health concerns. They propose that conversational chatbots that provide cognitive behavioural therapy facilities address diverse barriers of cost, availability and location which students often face in acquiring mental health care and services. Furthermore, Canady (2019) in an empirical study conducted by investigating patients at a clinic in California evidently points out how AI facilities help understand which patients are likely to get better and who needs intense care and treatment on the other hand. The same capabilities of AI powered tools can be incorporated in various institutions, including academic and workspaces, to provide better mental health services to people.

Graham and Nebeker (2019) point out that AI facilities can supplement current clinical care with its innovativeness and potential in acquiring various data including natural language processing. The persistent

development of AI techniques helps medical practitioners not only identify accurate symptoms but also redefine aspects of mental health illness in general. The advancement in AI technology help recognize illness at an earlier stage which automatically increases chances of cure and recovery. Inkster and Sarda (2018) point out that AI enabled empathy oriented conversational mobile chatbots play crucial role in helping patients diagnosed with depression and major psychological concerns. Like, Kelly, Corrado and others (2019) expose, AI raises several **challenges** in regard to adoption, logistical difficulties and machine learning that cause limitations in incorporating its full potential into clinical practice. Despite these limitations, AI enabled system has been successful in reaching huge number of people, assisting them in dealing with their anxiety and depression there by crossing existing stereotypes about mental health issues. Kulasinghe and Jayasinghe (2019) provide empirical evidences of how AI based system has made use of data of people including their web and search history as well as Facebook status to reach out to patients in need for help and thereby preventing several suicide and tragic incidents.

Nadarzynski, Miles and others (2019) explore AI based **chatbots** that act as automated conversational agents that help assist patients in overcoming stress and anxiety as well as provide adequate information and support to them. Even though AI based chatbots are being increasingly used in healthcare, there is a huge debate on its acceptability among consumers. In a study conducted by Longoni, Bonezzi and Morewedge (2019), they talk about consumer receptivity to artificial intelligence in psychology and medicine. Results of the study indicate that consumers who consider themselves to be unique are less likely to adopt to automated medical services and are hesitant to utilize AI based healthcare facilities. This necessarily increases the need to transform and develop AI facilities in a more personalized manner convenient to diverse groups of people in order to ensure its acceptance among consumers. Apart from these implications rising role of AI in psychology and medicine also raises concerns among medical practitioners about job loss in their respective fields. Luxton (2014) talks about several of the current and future implications that AI is likely to create emphasizing need to address these challenges with utmost concern.

Malik, Pathania and Rathaur (2019) put forward the importance for medical practitioners and researchers to accustom themselves with technological advancements in order to facilitate AI services to a larger community. Several researches work towards integrating AI, its innovativeness and technology with diverse fields and domains to ensure that these facilities are available to people in general. Reed (2019) brings the idea of bridging between artificial intelligence and cognitive psychology in order to enable proper communicating channels between humans and machines. By combining these two aspects, the study not only attempts to organize knowledge on cognitive psychology but also make sure that modern adoption of AI facilities in medicine and psychology reach to people in large numbers.

AI governance also help develop community well-being with its ability to access and effectively organize data. Stray (2020) explains how large-scale commerce systems manage harmful effects and disasters on communities by incorporating AI techniques to form metrics and data to work alongside these communities. The role of AI in psychology and mental health is mainly constructed on aspects of ensuring well-being of a larger community. Torous and Keshavan (2014) trace the development of digital psychiatry to mark how technology play crucial role in easily connecting and monitoring patients as well as their diagnosis. However, all of these studies depict the need for medical professionals, practitioners and researchers to accustom themselves to these advances of technology in order to make use of the modern facilities of artificial intelligence in a proper and effective manner.

Tran and Latkin (2019) depict the growth of applying AI based techniques in depression related research and treatment. However, the incorporation of these facilities in healthcare raises several serious concerns of privacy and confidentiality that directly impact consumer receptivity to AI in medical care. Fiske and Buyx (2019) expose the need to address various social and ethical implications that align along with the implementation of AI based techniques in medicine and psychology. With the increasing advent of visual therapists, robots and chatbots that address issues of mental health, sexual disorders and various other concerns, there is an emerging need to make certain quality and accuracy of AI facilities as well as to uplift the knowledge and skill of professionals handling the same. The social and ethical aspects in relation to artificial intelligence in psychology and mental health

demand persistent addressal and check on embodiment of AI in current and future applications to ensure safe practice of medical services.

### Objective

Role of Artificial Intelligence in Psychological and Mental Well Being.

### Methodology

This study considered a sample of 197 people suffering from psychological or mental illness. Through “Random sampling method” data was collected for this study, and scrutinized by “Explanatory Factor Analysis” to get the results.

### Findings

The table below shares respondents' general details in which it is found that 52.28% are male and 47.72% are female. Among them, 28.93% are between 25 to 35 years, 40.10% are between 35-45 years, and 30.97% are above 45 years. Regarding Duration of Illness, 37.05 have Less than 6 months of illness, 29.96 have 6 months to 1 year of illness, and 32.99 have More than 1 year of illness.

**General Details**

<b>Variables</b>	<b>Respondents</b>	<b>Percentage</b>
<b>Gender</b>		
Male	103	52.28
Female	94	47.72
<b>Total</b>	<b>197</b>	<b>100</b>
<b>Age (years)</b>		
25 to 35	57	28.93
35 to 45	79	40.10
Above 45	61	30.97
<b>Total</b>	<b>197</b>	<b>100</b>
<b>Duration of Illness</b>		
Less than 6 months	73	37.05
6 months to 1 year	59	29.96
More than 1 year	65	32.99
<b>Total</b>	<b>197</b>	<b>100</b>

### *“Factor Analysis”*

**“KMO and Bartlett's Test”**

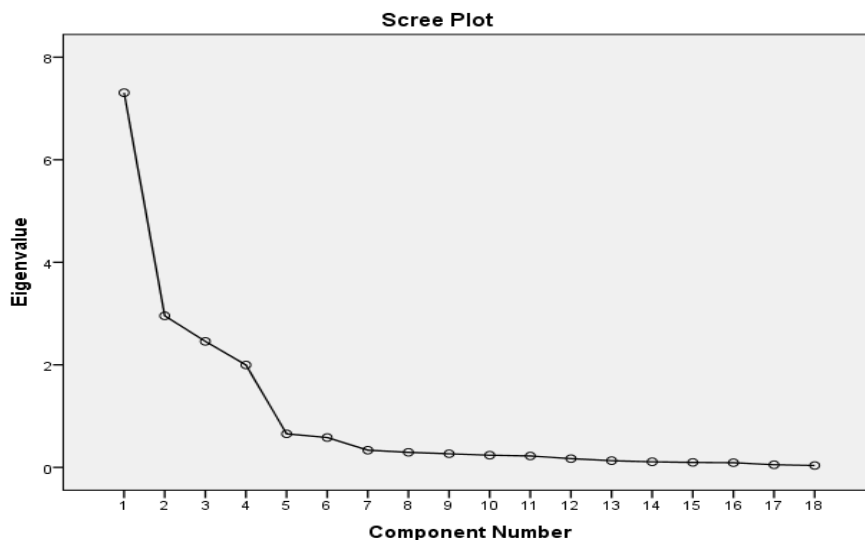
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.862
Bartlett's Test of Sphericity	Approx. Chi-Square	3758.529
	df	153
	Sig.	.000

In table “KMO and Bartlett's Test” above, KMO value found is .862

**“Total Variance Explained”**

“Component”	“Initial Eigenvalues”			“Rotation Sums of Squared Loadings”		
	“Total”	“% Of Variance”	Cumulative %	“Total”	“% Of Variance”	Cumulative %
1	7.307	40.594	40.594	<b>4.083</b>	22.684	22.684
2	2.956	16.423	57.017	<b>3.710</b>	20.609	43.293
3	2.458	13.654	70.671	<b>3.567</b>	19.819	63.112
4	1.997	11.096	81.766	<b>3.358</b>	18.654	<b>81.766</b>
5	.654	3.635	85.401			
6	.582	3.236	88.637			
7	.336	1.864	90.501			
8	.294	1.635	92.135			
9	.266	1.476	93.611			
10	.238	1.324	94.935			
11	.223	1.237	96.173			
12	.171	.951	97.123			
13	.131	.729	97.852			
14	.109	.606	98.458			
15	.098	.542	99.000			
16	.091	.507	99.507			
17	.052	.287	99.794			
18	.037	.206	100.000			

All 4 factors contribute to explain total 81.766 % of variance. The variance explained by Monitor patients remotely is 22.683% followed by AI based Personalized Counselling with 20.609%, third Factor Quick & Easy diagnosis having 19.819% and fourth factor AI based Conversation tool - Chatbots explains 18.654% of variance.



**Scree Plot**  
**Rotated Component Matrix**

S. No.	Statements	Factor Loading	Factor Reliability
	<b>Monitor patients remotely</b>		<b>.949</b>
1.	AI aids in providing immediate emotional and physical assistance to those in requirement of mental health services without meeting physically	.910	
2.	Provide equitable mental health services to patients living in rural and remote areas	.892	
3.	Allow to reach large number of people in less time	.862	
4.	Ensures adequate accessibility of mental health resources to every section of society	.837	
5	AI addresses increasing demand for mental health services by collecting data, allocating resources and effectively managing patient inflow	.806	
	<b>Quick &amp; Easy diagnosis</b>		<b>.971</b>
1.	AI play crucial role in diagnosing patients with depression and major psychological concern	.946	
2.	AI uses web and search history of patients to reach out for help and preventing several suicide and tragic incidents	.941	
3.	Recognize illness at an earlier stage that automatically increases chances of cure and recovery	.931	
4.	The persistent development of AI techniques helps medical practitioners in identifying accurate symptoms	.929	
	<b>AI based Personalized Counselling</b>		<b>.955</b>
1.	AI driven methods helps in therapy and counselling by incorporating innovative techniques	.959	
2.	Perform diverse tasks including visual perception, processing of language and health support	.929	
3.	AI has been facilitated in mobile phones that cater to personalized mental health caring	.904	
4.	Help to transform mental health services to a more personalized manner	.847	
	<b>AI based Conversation tool – Chatbots</b>		<b>.866</b>
1.	AI based conversational chatbot understands and decode natural language of patients and provide them health assistance	.818	

2.	AI enabled conversational mobile chatbots can be used by patients without any location & time barrier	.811	
3.	Act as automated conversational agents helping patients in overcoming stress and anxiety	.809	
4.	Used to address issues of mental health, sexual disorders and various other concerns	.768	
5.	Utilized by the mental health department to communicate to with patients, and to prioritize their health-related goals	.730	

### Factors and associated variables

First factor in study is Monitor patients remotely with variables, AI aids in providing immediate emotional and physical assistance to those in requirement of mental health services without meeting physically, Provide equitable mental health services to patients living in rural and remote areas, Allow to reach large number of people in less time, Ensures adequate accessibility of mental health resources to every section of society, AI addresses increasing demand for mental health services by collecting data, allocating resources and effectively managing patient inflow. Second Factor is AI based Personalized Counselling, variables are AI driven methods helps in therapy and counselling by incorporating innovative techniques, Perform diverse tasks including visual perception, processing of language and health support, AI has been facilitated in mobile phones that cater to personalized mental health caring, Help to transform mental health services to a more personalized manner. Third Factor is Quick & Easy diagnosis, variables are AI play crucial role in diagnosing patients with depression and major psychological concern, AI system has made uses web and search history of patients to reach out them in need for help and preventing several suicide and tragic incidents, Recognize illness at an earlier stage that automatically increases chances of cure and recovery, and the persistent development of AI techniques helps medical practitioners in identifying accurate symptoms. Fourth factor is AI based Conversation tool - Chatbots with variables, AI based conversational chatbot understands and decode natural language of patients and provide them health assistance, AI enabled conversational mobile chatbots can be used by patients without any location & time barrier, Act as automated conversational agents helping patients in overcoming stress and anxiety, Used to address issues of mental health, sexual disorders and various other concerns, and Utilized by the mental health department to communicate to with patients, and to prioritize their health-related goals.

### Reliability Statistics

Cronbach's Alpha	Number of Items
.908	18

Total reliability of 18 items including variables related to Role of Artificial Intelligence in Psychological and Mental Well Being is 0.908.

### Conclusion

The implementation and incorporation of AI driven techniques and tools in psychology revolutionize mental health services such that more people are able to reach out in availing these facilities. Role of AI in psychology has necessarily influenced in breaking barriers and stereotypes related to mental health issues. It has not only made mental health services more accessible and affordable, but also result in bringing innovativeness of technology into medical and psychology field helping identify potential mental health risks earlier and more accurate. However, AI into mental health services raises several ethical and social concerns in regard to privacy and security affecting consumer receptivity to artificial intelligence. It is important to identify, address and solve these challenges in order to utilize the transformative power of AI in enhancing mental health care there by ensuring emotional and mental well-being of community. This study was conducted to know the Role of Artificial Intelligence in Psychological and Mental Well Being, it is found that Monitor patients remotely, AI based Personalized Counselling, Quick & Easy diagnosis, AI based Conversation tool – Chatbots are some of the main roles of AI in dealing with patients suffering from Psychological and Mental Well Being issues.

---

**References**

1. Canady, V. A. (2019). Study explores use of AI to treat patients with depression. *Mental Health Weekly*, 29(42), 3–4.
2. D'Alfonso, S. (2020). AI in mental health. *Current Opinion in Psychology*, 36, 112–117.
3. Davenport, T., & Kalakota, R. (2019). The potential for artificial intelligence in healthcare. *Future Healthcare Journal*, 6(2), 94–98. ncbi. <https://doi.org/10.7861/futurehosp.6-2-94>.
4. Dawoodbhoy, F. M., Delaney, J., Cecula, P., Yu, J., Peacock, I., Tan, J., & Cox, B. (2021). AI in patient flow: applications of artificial intelligence to improve patient flow in NHS acute mental health inpatient units. *Heliyon*, 7(5), e06993.
5. Dekker, I., De Jong, E. M., Schippers, M. C., De Bruijn-Smolanders, M., Alexiou, A., & Giesbers, B. (2020). Optimizing Students' Mental Health and Academic Performance: AI-Enhanced Life Crafting. *Frontiers in Psychology*, 11.
6. Fiske, A., Henningsen, P., & Buyx, A. (2019). Your Robot Therapist Will See You Now: Ethical Implications of Embodied Artificial Intelligence in Psychiatry, Psychology, and Psychotherapy. *Journal of Medical Internet Research*, 21(5), e13216.
7. Fulmer, R., Joerin, A., Gentile, B., Lakerink, L., & Rauws, M. (2018). Using Psychological Artificial Intelligence (Tess) to Relieve Symptoms of Depression and Anxiety: Randomized Controlled Trial. *JMIR Mental Health*, 5(4), e64.
8. Graham, S., Depp, C., Lee, E. E., Nebeker, C., Tu, X., Kim, H.-C., & Jeste, D. V. (2019). Artificial Intelligence for Mental Health and Mental Illnesses: An Overview. *Current Psychiatry Reports*, 21(11), 116.
9. Inkster, B., Sarda, S., & Subramanian, V. (2018). An Empathy-Driven, Conversational Artificial Intelligence Agent (Wysa) for Digital Mental Well-Being: Real-World Data Evaluation Mixed-Methods Study. *JMIR MHealth and UHealth*, 6(11), e12106.
10. Kelly, C. J., Karthikesalingam, A., Suleyman, M., Corrado, G., & King, D. (2019). Key challenges for delivering clinical impact with artificial intelligence. *BMC Medicine*, 17(1). BMC.
11. Kulasinghe, S. A. S. A., Jayasinghe, A., Rathnayaka, R. M. A., Karunaratne, P. B. M. M. D., Suranjini Silva, P. D., & Anuradha Jayakodi, J. A. D. C. (2019). AI Based Depression and Suicide Prevention System. *2019 International Conference on Advancements in Computing (ICAC)*.
12. Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019). Resistance to Medical Artificial Intelligence. *Journal of Consumer Research*, 46(4), 629–650.
13. Luxton, D. D. (2014). Artificial intelligence in psychological practice: Current and future applications and implications. *Professional Psychology: Research and Practice*, 45(5), 332–339.
14. Malik, P., Pathania, M., & Rathaur, V. (2019). Overview of artificial intelligence in medicine. *Journal of Family Medicine and Primary Care*, 8(7), 2328.
15. Nadarzynski, T., Miles, O., Cowie, A., & Ridge, D. (2019). Acceptability of artificial intelligence (AI)-led chatbot services in healthcare: A mixed-methods study. *DIGITAL HEALTH*, 5, 205520761987180.
16. Reed, S. (2019). Building Bridges Between AI and Cognitive Psychology. *AI Magazine*, 40(2), 17–28.
17. Ringeval, F., Messner, E.-M., Song, S., Liu, S., Zhao, Z., Mallol-Ragolta, A., Ren, Z., Soleymani, M., Pantic, M., Schuller, B., Valstar, M., Cummins, N., Cowie, R., Tavabi, L., Schmitt, M., Alisamir, S., & Amiriparian, S. (2019). AVEC 2019 Workshop and Challenge: State-of-Mind, Detecting Depression with AI, and Cross-Cultural Affect Recognition. *Proceedings of the 9th International on Audio/Visual Emotion Challenge and Workshop - AVEC '19*.
18. Stray, J. (2020). Aligning AI Optimization to Community Well-Being. *International Journal of Community Well-Being*.
19. Torous, J., Keshavan, M., & Gutheil, T. (2014). Promise and perils of digital psychiatry. *Asian Journal of Psychiatry*, 10, 120–122.
20. Tran, B. X., McIntyre, R. S., Latkin, C. A., Phan, H. T., Vu, G. T., Nguyen, H. L. T., Gwee, K. K., Ho, C. S. H., & Ho, R. C. M. (2019). The Current Research Landscape on the Artificial Intelligence Application in the Management of Depressive Disorders: A Bibliometric Analysis. *International Journal of Environmental Research and Public Health*, 16(12), 2150.