

## Can A.I Be My Personal Therapist?

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### ABSTRACT

In recent years, the demand for mental healthcare services has increased tremendously, outpacing the capacity of traditional in-person therapy and indicating a crucial gap in the present available psychological support. The current lack of mental health practitioners, combined with rising awareness of mental health issues, has generated an urgent need for creative, technology-driven solutions to bridge this gap. The rise of artificial intelligence (AI) has cleared the path for groundbreaking advances in digital mental health, providing a revolutionary approach to psychological care via AI-powered chatbots and virtual therapy platforms. These intelligent systems, powered by powerful natural language processing (NLP) and advanced computational learning models, revolutionize data processing and decision-making, and have demonstrated the capability to give scalable, immediately available, and highly tailored support to individuals struggling with psychological distress. However, when these AI-driven interventions were deeply integrated into mental healthcare frameworks, a fundamental question emerges: Can AI genuinely serve as a reliable personal therapist? The integration of AI-powered chatbots into present mental healthcare frameworks has been identified as one of the most promising and fast expanding sectors in modern technology (Mishra et al., 2021). AI-powered innovative approaches have already demonstrated their ability to accomplish success, provide immediate support, improve emotional well-being, and aid in the management of mental health issues like as anxiety, depression, and chronic stress disorder (Boucher, 2021). Unlike traditional therapy, AI-powered mental health tools provide continuous availability, anonymity, and cost-effective accessibility, making them particularly beneficial for people who face financial constraints, geographical limitations, or social stigma when seeking professional mental health care. Despite these hopeful improvements, fundamental questions remain about AI's ability to fully reproduce the depth, sensitivity, and specific adaptability of human therapists. While AI chatbots may detect distress through textual or verbal cues, offer evidence-based coping tactics, and track users' emotional patterns over time, they lack the human touch, intuitive understanding, and emotional intelligence that are frequently required in therapy. Traditional therapists rely not just on spoken words, but also on subtle nonverbal clues, deep emotional resonance, and real-time flexibility, all of which contribute to the therapeutic alliance—an essential component of effective treatment. AI, no matter how evolved, struggles to understand the subtleties of human emotion, especially in circumstances of extreme trauma, suicidal ideation, or complicated psychological problems. This study aims to critically assess AI's potential for redefining digital mental health interventions by investigating its capabilities, limitations, and long-term consequences. This paper aims to investigate whether AI-driven chatbots can serve as effective substitutes for human therapists, or whether they are better positioned as complementary tools that augment rather than supplant traditional therapeutic practices, using an in-depth analysis of current AI technologies, empirical studies, and real-world applications.

**KEYWORDS:** Artificial Intelligence (AI), Personal Therapist, Empirical Studies, Natural Language Processing (NLP).

### LITERATURE REVIEW

#### Introduction

Psychological well-being is more important than ever before, but millions of individuals struggle to access the care they need. Long wait times, hefty financial charges, and the social stigma around therapy sometimes deter people from obtaining professional care. In response to this mounting dilemma, artificial intelligence (AI) is stepping in, giving chatbots, virtual therapists, and digital tools that promise emotional support, advice, and even therapeutic interventions. But can AI actually be a substitute for human therapist?

AI-powered therapy is both intriguing and problematic. These systems engage with users by using cutting-edge computer models, language intelligence systems, and large datasets to provide guidance, track mood patterns, and even simulate personal conversations. They are available 24 hours a day, seven days a week, do not judge, and can connect with those who might otherwise suffer in silence. For some, this type of immediate, anonymous assistance can be life-changing. However, therapy is more than just words spoken in a session; it is about connection, understanding, and the profound human ability to empathize. Can an AI, no matter how advanced, genuinely comprehend the anguish of losing a loved one, the weight of anxiety, or the complexities of trauma? And what are the hazards of incorporating AI into mental health care?

Could it misunderstand feelings, give bad advice, or make individuals feel even more isolated? This research investigates the promise and drawbacks of AI in therapy. It examines where AI is already having an impact, where it falls short, and whether it will ever be able to replace human therapists—or if its true strength resides in collaborating with them.

### **Importance of Early Detection in Mental Health**

Early diagnosis of mental health concerns is critical for improving outcomes for people experiencing psychological distress. Recognizing the signs and symptoms early allows healthcare providers to intervene swiftly, providing support and treatment before the disease worsens. This proactive strategy serves to reduce the severity of mental health illnesses, lower the chance of long-term repercussions, and, ultimately, improve the quality of life for people afflicted. Addressing mental health issues early can make a big difference in rehabilitation, reducing the impact on individuals and preventing more serious implications in the future. AI can play an important role in detecting psychological difficulties early on, preventing them from escalating and allowing for prompt interventions. AI systems can use machine learning algorithms to scan massive datasets such as healthcare records, social media activity, and even speech patterns to detect early indicators of mental health concerns.

For example, AI systems like chatbots (e.g., Woebot) or mental health applications powered by natural language processing (NLP) can analyze a user's language, identifying upsetting words or emotional shifts, and Predictive analytics can identify at-risk individuals based on behavioral patterns like as changes in sleep, activity levels, and social contacts, offering an early warning signal that can prompt further evaluation by a mental health expert (Mennella et al., 2024). Timely identification allows for more personalized therapies, increasing the likelihood of effective therapy. Early detection of suicide risk is critical because it enables prompt intervention and the adoption of preventive measures to minimize suicide rates. (Garg, 2023).

### **Barriers to Mental Healthcare**

Barriers to mental healthcare are common and frequently prevent people from seeking the assistance they require. These barriers might range from personal worries and cultural beliefs to institutional problems within the healthcare system. These include financial restraints, stigma, a scarcity of mental health specialists in impoverished communities, and a lack of available resources. AI-powered solutions can remove several of these hurdles by providing scalable and cost-effective alternatives to traditional therapy. There are several barriers to mental health care that might prevent people from seeking or receiving the help they need. Many of these hurdles can be overcome using AI-powered solutions, making mental health care more accessible, inexpensive, and efficient.

Below are several essential highlighted barriers in detail:

#### **1. Quick Response Needs:**

Immediate support is essential when dealing with psychological well-being emergencies, as delayed responses can exacerbate symptoms and lead to additional mental deterioration. Many people in need of urgent mental health care have lengthy wait times for therapy or counseling appointments. AI-powered solutions, such as 24/7 chatbots or virtual assistants, can provide immediate access to aid, including emotional support and basic coping methods, during key times. These AI solutions can serve as a first line of defense, reducing the risk that a mental health crisis would worsen before a human therapist is available (Baskin, T., Graham, S., et al., 2021). This rapid access is especially important in cases where immediate action is required to avoid further harm.

#### **2. Financial Barriers:**

Mental health care can be expensive, particularly in private settings, and many people cannot afford therapy or counseling sessions. In addition, insurance coverage for mental health services is frequently insufficient, limiting access to care. AI-powered mental health applications, virtual therapy, and online counseling platforms offer therapy and mental health support at a lower cost than traditional in-person therapy sessions. These digital solutions make it easier for individuals, particularly those in resource-constrained situations, to obtain mental health care without incurring financial costs (Alowais, A., Yelne, G., et al., 2023). AI technologies also help to reduce healthcare costs by lowering the need for in-person consultations and increasing treatment efficiency.

#### **3. Geographical Barriers:**

In remote or rural locations, access to mental health specialists is limited, and individuals sometimes struggle to find appropriate therapists or counselors nearby. Many people are unable to seek or receive appropriate mental health care due to their geographical remoteness. AI-powered technologies, such as virtual therapy platforms, telemedicine, and online

counseling services, can help bridge the geographical divide by providing therapeutic and mental health support remotely. This allows persons in underserved areas to receive expert treatment without having to travel large distances, ensuring that access to mental healthcare support is more equitably dispersed throughout regions (Faezi, A., Alinezhad, M., 2024). AI has the potential to significantly improve healthcare access in rural and isolated regions.

#### **4. Privacy Concerns:**

Privacy remains one of the most important considerations when adopting AI-powered mental healthcare products. Many people may be hesitant to share confidential individualized data with an AI system because they are concerned about data breaches, unwanted exploitation of this information, and access by third parties. Addressing these problems requires implementing advanced data protection techniques, such as encryption and secure storage. AI systems must also be transparent about their data protection rules and get users' explicit approval for how their data is gathered, kept, and used. When privacy is prioritized, AI-powered platforms can foster confidence and enable users to use these tools without worry of losing personal information (Mennella, M., Reddy, P., et al., 2024). Addressing privacy concerns is important to the successful use of AI in mental health care.

#### **5. Lack of Awareness:**

One of the most major barriers to getting mental healthcare treatment is that people frequently do not recognize their mental health issues (Gilleen et al., 2010). Despite the increasing availability of AI-powered mental health solutions, many people are still unaware of these tools and their potential advantages. This lack of awareness can lead to reluctance or opposition to employing AI-powered mental health treatments. Many people may still view AI as a strange or untrustworthy technology, making them unwilling to use it for their mental health needs. Public education and awareness initiatives are critical for informing people about the availability of these tools and their usefulness in providing mental health care. Adoption of AI-powered solutions can be considerably increased by boosting digital literacy and educating the public on how AI can improve mental health treatment (Baskin, T., Graham, S., et al., 2021). AI-based technologies could raise public awareness of their mental health status and encourage them to seek expert care. (Francesca Minerva; Alberto Giubilini, 2023).

#### **6. Human-Social Interaction:**

Human interaction is essential for good therapy. Many people feel more at ease discussing their personal and emotional issues with a human therapist because they appreciate the empathy, understanding, and nuanced replies that a human expert can offer. While AI technologies can be useful in mental healthcare, they cannot completely replace human connection and individualized therapy (Faezi, A., Alinezhad, M., 2024). Research suggests that virtual interviews can increase troops' willingness to discuss post-traumatic stress. These virtual interviewers have also been shown to be more effective than human interviewers in gathering critical medical information from veterans (Fiske, Henningsen, & Buyx, 2019). Furthermore, research indicates that virtual therapists can help alleviate the symptoms of post-traumatic stress disorder (Lucas et al., 2017).

Autistic children usually face major difficulties in social relationships, especially with strangers. For these children, artificial intelligence can be a more successful tool than traditional psychotherapy with a human therapist. According to the studies stated previously, AI can help diagnose the disease using apps or chatbots and provide support via digital platforms.

For example, AI-generated visual information can help autistic children learn specific social or behavioral skills, allowing them to practice and refine them in real-life circumstances when they are ready and confident (Francesca Minerva, Alberto Giubilini, 2023).

#### **7. Lack of Mental Healthcare Infrastructure:**

Many underdeveloped countries lack sufficient infrastructure to maintain traditional mental health treatment systems. This includes a scarcity of physical clinics, qualified mental health specialists, and essential supplies. AI, as a digital solution, requires far less physical infrastructure and is more quickly deployed, making it a feasible option in areas where traditional care is limited or unavailable. Nonetheless, there are still barriers to widespread use of AI-powered mental health aids, such as reliable internet connectivity and mobile devices. In some areas, poor internet infrastructure or expensive mobile technology costs may hinder the usefulness of AI solutions (Alowais, A., Yelne, G., et al., 2023). Despite these obstacles, artificial intelligence (AI) presents a viable approach for providing mental health treatment in areas with inadequate infrastructure.

#### **8. Fear of Judgment:**

Many employees are concerned about the consequences of seeking psychological well-being support at work. They may be concerned about being viewed as "weak" or "not good enough" for their job, leading them to delay seeking help. As

they attempt to deal with things on their own, they may experience stress, burnout, and decreased productivity. The cultural stigma associated with mental health issues is a significant barrier to obtaining treatment. Individuals who are afraid of criticism may be less likely to seek help, leaving them to suffer in quiet. AI-powered solutions, such as anonymous chatbots or virtual mental health apps, ensure a safe and judgment-free environment.

An environment in which people can freely express their problems without fear of social shame. These platforms provide a sense of privacy and anonymity, which may motivate people to seek help when they might not have done so otherwise (Baskin, T., Graham, S., et al., 2021). Additionally, AI can track work patterns, such as indicators of stress or burnout, and warn firms if an employee requires assistance. This allows businesses to intervene and provide assistance early on, making employees feel more comfortable seeking out. Companies that use AI to assist mental health can foster a culture in which employees feel comfortable seeking help and caring for their well-being without fear of being judged.

### How AI Can Improve Mental Health Diagnostic Systems

AI's ability to scan large datasets and detect patterns is extremely beneficial for developing mental health diagnostic systems. Machine learning algorithms can improve diagnostic accuracy by identifying complicated patterns in patient data that human practitioners may ignore. AI tools can help therapists diagnose depression, anxiety, and PTSD more effectively and at an earlier stage.

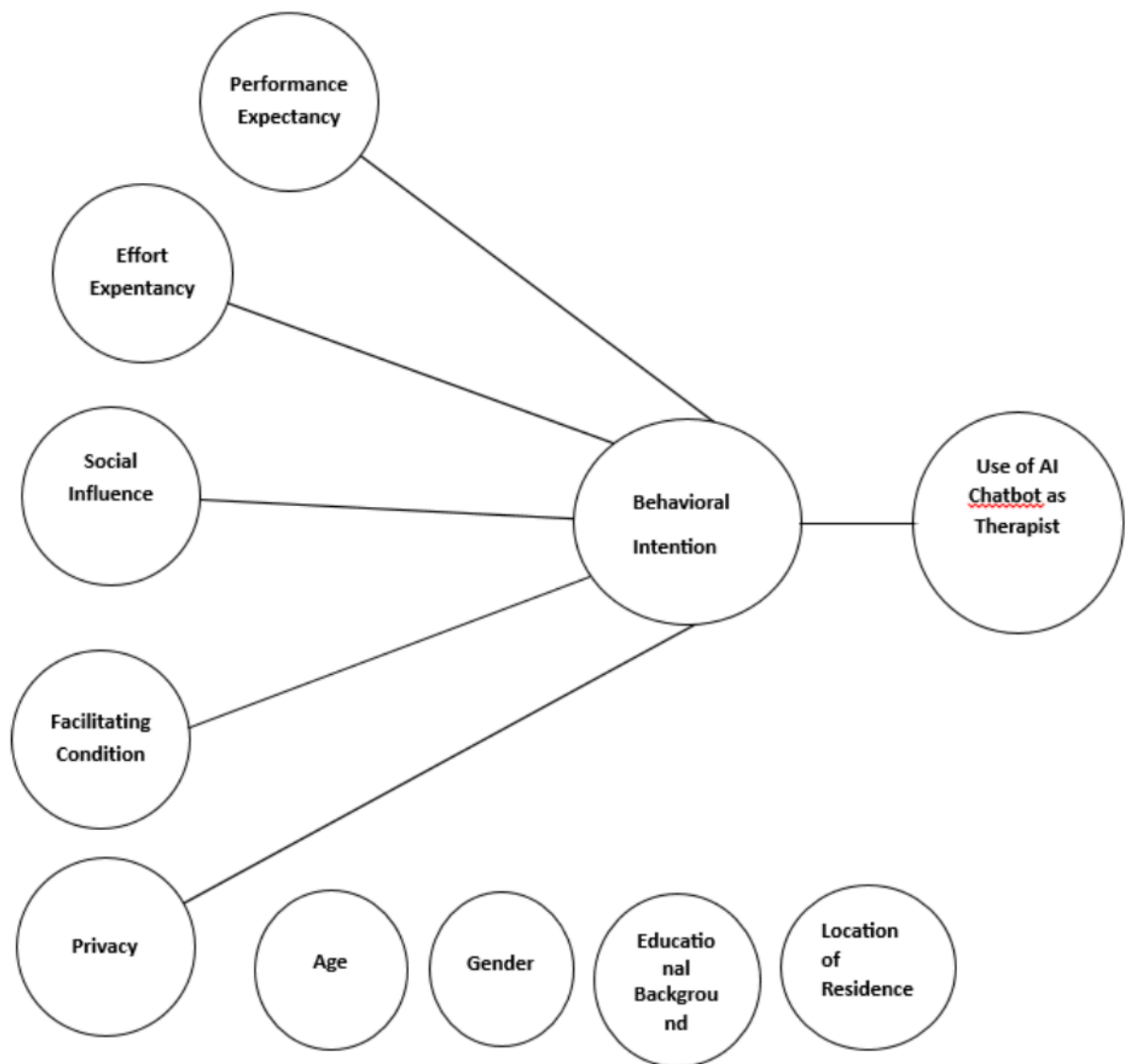
AI systems, for example, can evaluate speech patterns, facial expressions, and physiological data to aid in the diagnosis of illnesses. Algorithms such as Affectiva's emotion AI are intended to analyze facial expressions to detect emotional distress, which is especially beneficial in situations when verbal communication is difficult. This technology can be integrated into diagnostic processes to help human practitioners make better informed decisions (Faezi & Alinezhad, 2024). Furthermore, AI can help provide continuous assessments of patients' progress. AI systems can track behavioral changes in real time and recommend changes to treatment strategies. This continuous feedback loop ensures that therapies are constantly modified to the patient's changing demands.

In addition to these skills, AI can help to decrease diagnostic biases. Personal biases or emotional considerations can influence human therapists' assessments of patients. However, AI is based on data-driven patterns, allowing for more objective evaluations. This can increase diagnostic accuracy and fairness, especially in varied groups where illnesses may manifest differently due to cultural or environmental variables. AI also allows for more tailored treatment plans. AI can recommend more effective interventions based on a patient's history, preferences, and progress over time. These tailored tactics can help with treatment adherence and outcomes.

Furthermore, AI-powered diagnostic technologies can improve access to mental health services. AI systems can assist those who are unable to reach mental health experts owing to geographic, financial, or social constraints by providing early evaluations and diagnostic support remotely. This can be especially beneficial for underprivileged communities or individuals who are unwilling to seek in-person assistance due to stigma. To summarize, AI is transforming mental health diagnostics by enhancing accuracy, decreasing biases, personalizing treatments, and increasing accessibility. These innovations have the potential to alter how clinicians diagnose and treat mental health issues, resulting in better outcomes for patients.

### CONCEPTUAL FRAMEWORK

This conceptual framework explores the key factors influencing the adoption of AI-driven therapy as a viable alternative to traditional mental health counseling. **Performance Expectancy** refers to the belief that AI-based therapy can effectively enhance mental well-being, providing meaningful psychological support comparable to human therapists. **Effort Expectancy** considers the ease of use, accessibility, and user-friendliness of AI therapy platforms, as intuitive interfaces and seamless interactions can encourage engagement. **Social Influence** examines the impact of societal perceptions, peer recommendations, and professional endorsements, as the credibility of AI-driven therapy is strengthened when accepted by mental health professionals and users. **Facilitating Condition** emphasizes the availability of technological infrastructure, support systems, and integration with existing healthcare services, ensuring that AI therapy is easily accessible through mobile apps, chatbots, or telehealth platforms. Lastly, **Privacy Concerns** play a crucial role in determining adoption, as users must trust AI systems to handle sensitive personal information securely while addressing ethical concerns related to confidentiality, AI biases, and data security. The interplay of these factors influences user acceptance and trust in AI as a therapeutic tool, making this framework essential for assessing adoption barriers, user perceptions, and areas for improvement in AI-driven mental health solutions.



## HYPOTHESIS

### 1. Performance Expectancy

- $H_0$  (Null Hypothesis): Performance expectancy does not significantly influence behavioral intention to adopt AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Performance expectancy significantly influences behavioral intention to adopt AI-driven therapy.

### 2. Effort Expectancy

- $H_0$  (Null Hypothesis): Effort expectancy does not significantly influence behavioral intention to adopt AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Effort expectancy significantly influences behavioral intention to adopt AI-driven therapy.

### 3. Social Influence

- $H_0$  (Null Hypothesis): Social influence does not significantly affect behavioral intention to adopt AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Social influence significantly affects behavioral intention to adopt AI-driven therapy.

### 4. Facilitating Conditions

- $H_0$  (Null Hypothesis): Facilitating conditions do not significantly impact behavioral intention to adopt AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Facilitating conditions significantly impact behavioral intention to adopt AI-driven therapy.

#### 5. Privacy Concerns

- $H_0$  (Null Hypothesis): Privacy concerns do not significantly influence behavioral intention to adopt AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Privacy concerns significantly influence behavioral intention to adopt AI-driven therapy.

#### 6. Behavioral Intention

- $H_0$  (Null Hypothesis): Behavioral intention does not significantly affect the actual adoption of AI-driven therapy.
- $H_1$  (Alternative Hypothesis): Behavioral intention significantly affects the actual adoption of AI-driven therapy.

### DATA SOURCES

#### Primary Data:

- Survey: A structured questionnaire was developed using Google Forms to collect responses from key stakeholders, that included students, interns, employees, and managers. The survey focused on their perceptions, experiences, and willingness to use AI as a mental health support tool.

#### Secondary Data:

- Research Papers: A comprehensive review of existing literature from renowned medical journals which conducted research to understand AI's role in mental health interventions. These journals included *The Lancet Psychiatry*, *JAMA Psychiatry*, *Nature Mental Health* and some others.

### SAMPLING FRAMEWORK

Random sampling was conducted with 79 participants, ensuring representation across different age groups, educational backgrounds, gender and locations of residence to capture diverse perspectives on AI-driven mental health support.

### DATA COLLECTION TOOLS

The study employs a structured questionnaire to gather insights on the acceptance of AI in mental health. It includes demographic questions covering gender, age, educational level, and location of residence to ensure a diverse sample. A 7-point Likert scale is used to assess perceptions on accessibility, affordability, quality, and the impact of technology in AI-driven mental health support. These questions evaluate ease of access, financial feasibility, effectiveness, and the role of AI as an alternative or supplement to traditional therapy. This structured approach ensures a comprehensive understanding of stakeholder perspectives.

### DATA ANALYSIS

#### Descriptive Statistics

The descriptive statistics provide an overview of the demographic distribution of the participants. The data suggests a well-diversified sample in terms of gender, age, marital status, educational background, and location of residence. The low standard deviations indicate relatively consistent responses, while skewness and kurtosis values highlight slight deviations from normality in some variables. The mode and Median values suggest that the majority of participants share similar demographic characteristics, particularly in education and marital status.

Descriptive Statistics					
	Gender	Age	Marital Status	Educational Background	Location of Residence
Valid	79	79	79	79	79

Missing	9	9	9	9	9
Mode	2.000 a	1.000 a	1.000 a	4.000 a	3.000 a
Median	2.000	1.000	1.000	4.000	3.000
Mean	1.684	1.127	1.089	3.582	2.494
Std. Error of Mean	0.053	0.052	0.032	0.084	0.069
Std. Deviation	0.468	0.463	0.286	0.744	0.618
Coefficient of variation	0.278	0.411	0.263	0.208	0.248
Variance	0.219	0.215	0.082	0.554	0.381
Skewness	-0.805	3.638	2.952	-1.055	-0.813
Std. Error of Skewness	0.271	0.271	0.271	0.271	0.271
Kurtosis	-1.388	12.058	6.886	2.387	-0.305
Std. Error of Kurtosis	0.535	0.535	0.535	0.535	0.535

The sample distribution is appropriate for analysis, allowing for reliable statistical inferences regarding AI chatbot adoption in therapy.

### Frequency Analysis

The frequency analysis highlights the representation of different demographic groups in the study. A higher percentage of participants were young, single, and had a strong educational background. The majority resided in urban areas, which may influence their exposure to and adoption of AI-based therapy solutions.

### Frequency Tables

#### Frequencies for Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	25	28.409	31.646	31.646
Male	54	61.364	68.354	100.000
Missing	9	10.227		
Total	88	100.000		

#### Frequencies for Age

Age(yrs)	Frequency	Percent	Valid Percent	Cumulative Percent
18-30	73	82.955	92.405	92.405
31-45	2	2.273	2.532	94.937

Frequencies for Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Above 45	4	4.545	5.063	100.000
Missing	9	10.227		
Total	88	100.000		

Frequencies for Martial Status

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Single	72	81.818	91.139	91.139
Married	7	7.955	8.861	100.000
Missing	9	10.227		
Total	88	100.000		

Frequencies for Educational Background

Educational Background	Frequency	Percent	Valid Percent	Cumulative Percent
SSC	2	2.273	2.532	2.532
HSC	2	2.273	2.532	5.063
Graduation	27	30.682	34.177	39.241
Post-Graduation	44	50.000	55.696	94.937
Professional Course	4	4.545	5.063	100.000
Missing	9	10.227		
Total	88	100.000		

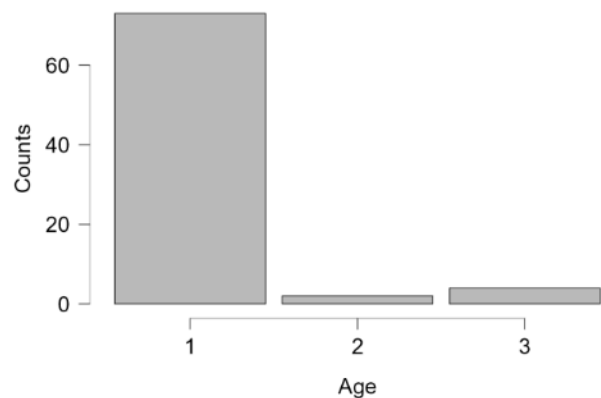
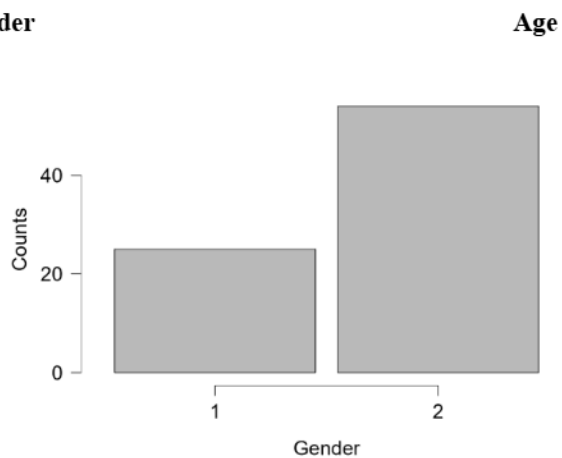
Frequencies for Location of Residence

Location of Residence	Frequency	Percent	Valid Percent	Cumulative Percent
Rural	5	5.682	6.329	6.329
Suburb	30	34.091	37.975	44.304
Urban/Metropolitan	44	50.000	55.696	100.000
Missing	9	10.227		
Total	88	100.000		

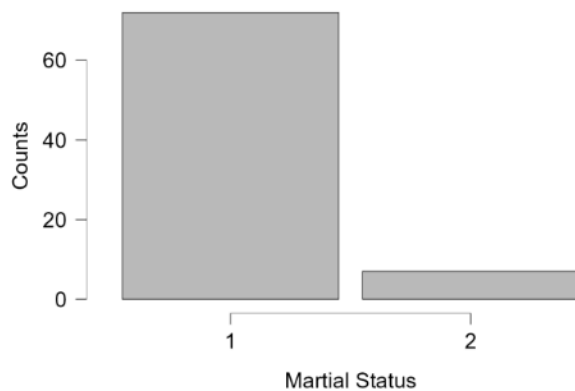


### Distribution Plots

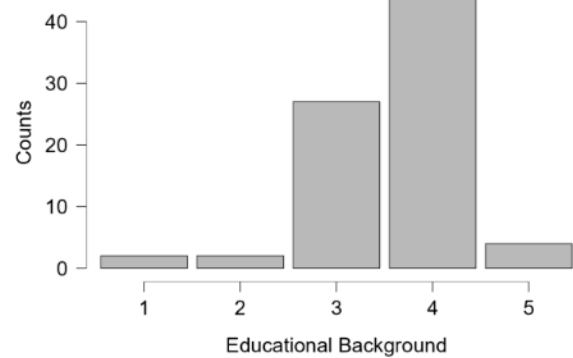
#### Gender



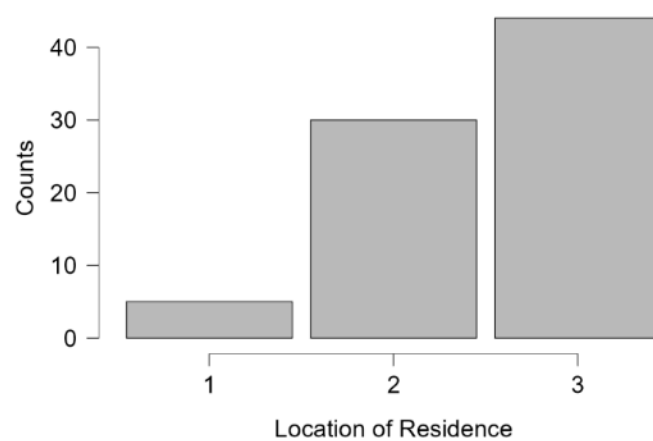
#### Marital Status



#### Educational Background



#### Location of Residence



The frequency distribution confirms a sample that aligns with the typical demographics of technology adopters, particularly young and educated individuals. This demographic is more likely to be open to AI-based therapeutic solutions.

### Correlation Analysis

Pearson's Correlations								
Variable		Performance Expectancy	Effort Expectancy	Social Influence	Facilitating condition	Privacy	Behavioral Intention	Use of AI Chatbot as Therapist
1. Performance Expectancy	Pearson's r	—						
	p-value	—						
2. Effort Expectancy	Pearson's r	0.828	—					
	p-value	< .001	—					
3. Social Influence	Pearson's r	0.732	0.814	—				
	p-value	< .001	< .001	—				
4. Facilitating condition	Pearson's r	0.715	0.811	0.827	—			
	p-value	< .001	< .001	< .001	—			
5. Privacy	Pearson's r	0.743	0.801	0.802	0.850	—		
	p-value	< .001	< .001	< .001	< .001	—		
6. Behavioral Intention	Pearson's r	0.778	0.793	0.811	0.827	0.882	—	
	p-value	< .001	< .001	< .001	< .001	< .001	—	
7. Use of AI Chatbot as Therapist	Pearson's r	0.767	0.828	0.826	0.860	0.897	0.894	—
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	—

- Privacy ( $r = 0.897$ ,  $p < .001$ ) and Behavioral Intention ( $r = 0.894$ ,  $p < .001$ ) had the strongest correlations with chatbot use.
- Effort Expectancy ( $r = 0.828$ ,  $p < .001$ ) and Social Influence ( $r = 0.826$ ,  $p < .001$ ) also showed strong correlations.
- All variables were significantly correlated ( $p < .001$ ), indicating that they are interrelated.

The strong correlations confirm that while privacy and behavioral intention are the most critical, other factors like effort expectancy and social influence still play supportive roles in AI chatbot adoption.

### Regression Analysis

The regression model ( $M_1$ ) shows a high explanatory power ( $R^2 = 0.877$ ), indicating that the selected independent variables strongly predict the use of AI chatbots for therapy. The ANOVA results ( $F = 85.4$ ,  $p < .001$ ) further confirm the model's significance. Privacy ( $p = 0.003$ ) and Behavioral Intention ( $p = 0.003$ ) emerged as the most significant predictors, while other variables like Performance Expectancy and Social Influence did not show statistically significant effects despite positive correlations.

Model Summary - Use of AI Chatbot as Therapist				
Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	RMSE
M <sub>1</sub>	0.936	0.877	0.867	2.228
Note. M <sub>1</sub> includes Performance Expectancy, Effort Expectancy, Social Influence, Facilitating condition, Privacy, Behavioral Intention				

Privacy and behavioral intention are the primary drivers of AI chatbot adoption in therapy. Users are more likely to engage with AI therapy when they trust its privacy measures and have a strong behavioral inclination toward using it.

### ANOVA

The ANOVA results ( $p < .001$ ) indicate that the independent variables significantly impact AI chatbot adoption. The high sum of squares for regression (2543.045) shows that most of the variance in the dependent variable is explained by the predictors, validating the robustness of the model.

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M <sub>1</sub>	Regression	2543.045	6	423.841	85.400	< .001
	Residual	357.335	72	4.963		
	Total	2900.380	78			
Note. M <sub>1</sub> includes Performance Expectancy, Effort Expectancy, Social Influence, Facilitating condition, Privacy, Behavioral Intention						
Note. The intercept model is omitted, as no meaningful information can be shown.						

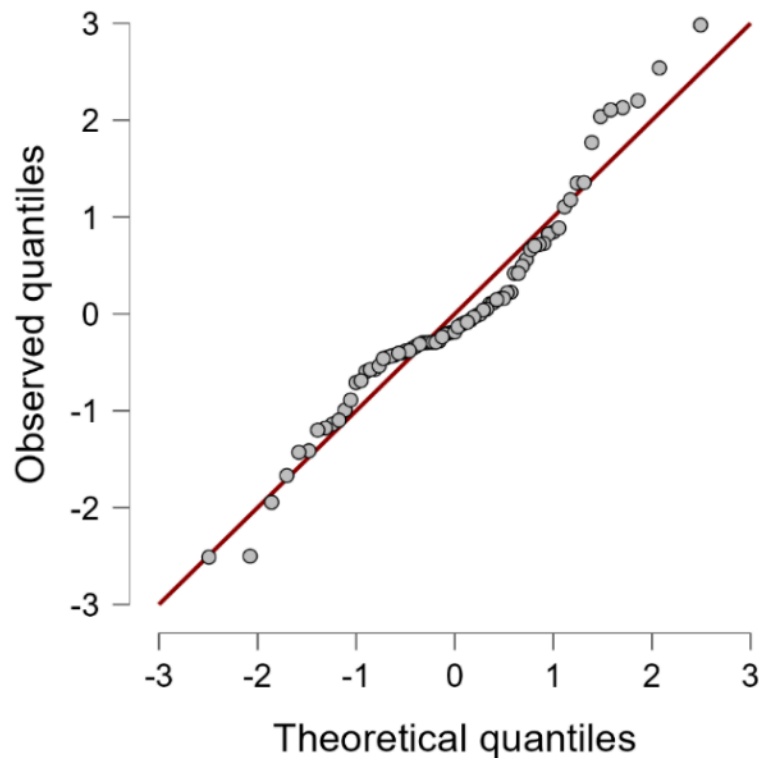
The model is statistically significant, proving that key psychological and technical factors influence AI chatbot adoption in therapy.

### Coefficient Analysis

Coefficients							
Model		Unstandardized	Standard Error	Standardized	t	p	Result
M <sub>0</sub>	(Intercept)	18.089	0.686		26.366	< .001	Significant
M <sub>1</sub>	(Intercept)	0.564	0.877		0.643	0.522	Not Significant
	Performance Expectancy	0.027	0.088	0.024	0.305	0.761	Not Significant
	Effort Expectancy	0.133	0.104	0.120	1.278	0.205	Not Significant
	Social Influence	0.072	0.084	0.073	0.854	0.396	Not Significant
	Facilitating condition	0.166	0.094	0.163	1.763	0.082	Not Significant
	Privacy	0.305	0.099	0.311	3.089	0.003	Significant
	Behavioral Intention	0.311	0.100	0.312	3.121	0.003	Significant

- Privacy ( $\beta = 0.305$ ,  $p = 0.003$ ) and Behavioral Intention ( $\beta = 0.311$ ,  $p = 0.003$ ) are statistically significant, showing a strong direct impact on AI chatbot usage.
- Facilitating Condition ( $\beta = 0.166$ ,  $p = 0.082$ ) is near-significant, suggesting that external support influences chatbot adoption.
- Performance Expectancy, Effort Expectancy, and Social influence held little sway over adoption, though they had positive regression coefficients.

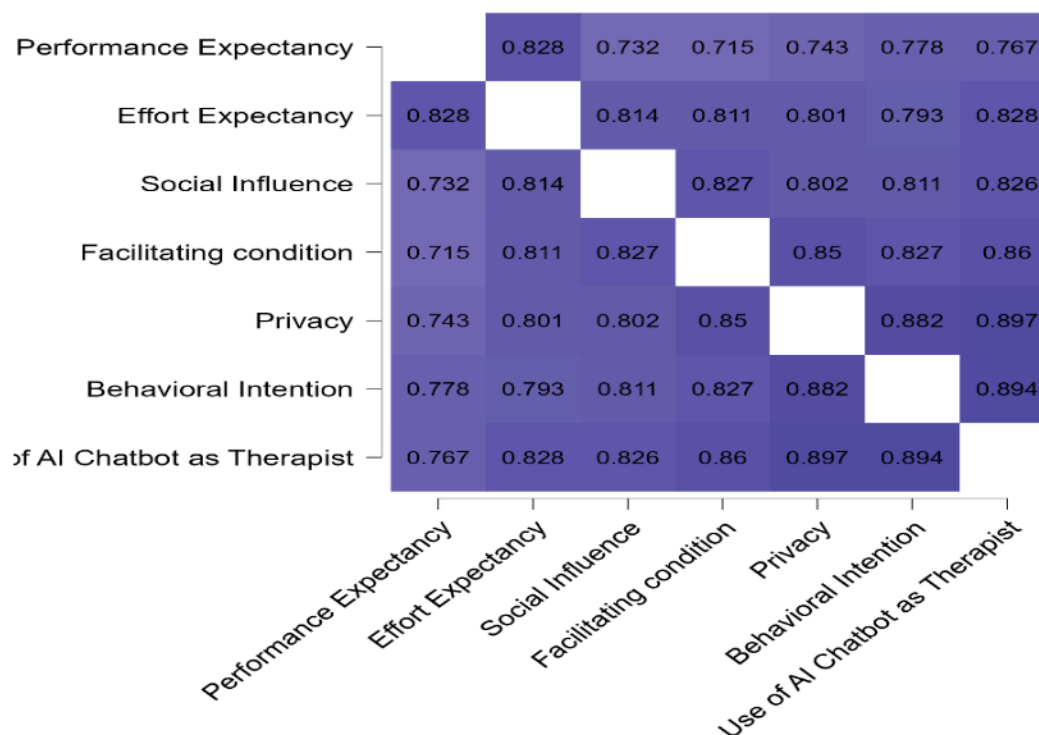
#### Q-Q Plot Standardized Residuals



The Q-Q plot shows that the residuals approximately follow a normal distribution, as the points align closely with the red reference line. A slight S-shaped pattern in the middle suggests minor deviations from normality, but they are not extreme. Deviations at the tails indicate potential outliers or slight skewness. Overall, the plot supports the assumption of normality, which is essential for valid regression inferences. Privacy concerns and user intention play the most crucial role in chatbot adoption. Other factors like ease of use and social influence contribute but are not direct determinants.

#### Pearson's $r$ heatmap

The Pearson Heatmap provided illustrates the correlation coefficients between various factors influencing the adoption of AI chatbots as therapists. The factors include Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Privacy, Behavioral Intention, and the Use of AI Chatbot as Therapist. The correlation coefficients range from 0.715 to 0.897, indicating strong positive relationships between these variables. Notably, Privacy (0.897) and Behavioral Intention (0.894) show the highest correlations with the use of AI chatbots as therapists, suggesting that these factors are the most influential in driving adoption. The heatmap underscores the importance of addressing privacy concerns and fostering positive behavioral intentions to enhance the acceptance and use of AI-driven therapeutic tools.



## CONCLUSION

This study presents robust empirical evidence supporting the potential of AI chatbots as viable therapeutic tools for mental health support. However, their widespread adoption is primarily influenced by privacy concerns and user intention, rather than technical or social factors alone. While elements such as effort expectancy, social influence, and facilitating conditions contribute to users' willingness to engage with AI-driven therapy, they do not serve as the primary determinants of adoption. The study's model, which demonstrates a high explanatory power ( $R^2 = 0.877$ ), highlights the significant role that psychological factors (such as trust and perceived effectiveness) and technical factors (such as data security and AI responsiveness) play in shaping users' acceptance of AI-based mental health interventions. These findings emphasize the need for addressing ethical considerations, transparency in AI-driven therapy, and user trust-building mechanisms to enhance adoption rates and maximize the therapeutic potential of AI chatbots.

## AI as a supplement, not as a replacement for human therapists

Despite the promising capabilities of AI in mental health care, it is crucial to recognize its limitations. While AI systems can offer initial support, early detection, and continuous monitoring, they cannot replace the empathy, understanding, and human connection that a licensed therapist provides. AI is best positioned as a supplement to human therapists, enhancing the therapeutic process through personalized recommendations and real-time data analysis, but not as a standalone solution.

Human therapists remain essential for providing deep emotional understanding, complex decision-making, and the nuanced judgment required in mental health care. AI, in its current form, lacks emotional intelligence and the ability to form the trusting relationships that are integral to successful therapy. Therefore, AI should be viewed as a tool to support mental health professionals, rather than a substitute.

In conclusion, AI's role in mental health care is to provide additional resources, improve accessibility, and offer tools for better diagnostics and early intervention. However, for individuals to receive comprehensive, compassionate care, AI should always work in tandem with human expertise, ensuring a balanced, ethical, and effective approach to mental health support.

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