

Knowledge and Attitudes among Psychiatric Healthcare Providers regard Utilization of Artificial Intelligence Technology in Psychotherapy

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Abstract

Background: The growing integration of intelligent digital systems into mental health care is transforming the delivery of Psychotherapy interventions. The successful implementation of these innovations depends largely on clinicians' awareness, acceptance, and understanding of their clinical applications. The aim of this study was to assess Knowledge, Attitudes and among Psychiatric Healthcare Providers regard Utilization of Artificial Intelligence Technology in Psychotherapy.

Methods: Research design: A descriptive cross- sectional study design was utilized in this study. **Setting:** This study was conducted at El-Azazi hospital for mental health ,affiliated with the ministry of health and Al-salam hospital of Zagazig University Hospitals, Sharkia Governorate, Egypt. **Participants:** A purposive sample of 90 psychiatric nurses, 30 Psychologists and 35 psychiatrists from the above-mentioned settings. **Tools of data collection : Three tools:** A self-administered questionnaire includes Demographic data and Artificial intelligence Practices, Knowledge about Artificial Intelligence questionnaire and Attitude towards artificial Intelligence questionnaire.

Results: The study results showed that more than half of Psychiatric nurses and Psychiatrists had high level of knowledge and attitude compared to psychologists regard utilization of AI in psychotherapy.

Conclusion: there was highly significant positive correlation between knowledge and attitude. Additionally, A Step wise multiple linear regression showed knowledge had a highly significant positive effect on attitude of psychiatric healthcare providers

Recommendation: Provide training programs to enhance knowledge of psychiatric healthcare providers and awareness of AI in psychotherapy for enabling more accessible and appropriate mental healthcare.

Keywords: Artificial intelligence technology, Attitudes, knowledge, Psychotherapy , Psychiatric healthcare providers

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Introduction

According to the World Health Organization, more than 1 billion people experience some form of mental health or substance abuse disorder, costing a lot of money per year in economic expenses. Access to timely interventions is hindered by an absence of trained mental health professionals, widespread societal stigma, and limitations within health care systems. In overcoming these barriers, digital health technologies hold great promise for enabling more accessible and equitable mental health care (Boit and Patil, 2025).

Psychotherapy is conceptualized as a variety of treatments that aim to help a person identify and change troubling emotions, thoughts, and behaviors. Psychotherapy can be used as an alternative to or alongside medication and other treatment options. Even when medication relieves symptoms, psychotherapy can help address specific issues (National Institute of Mental Health, 2024). It is focused on helping individuals to gain insight into the state of their mental health and to develop coping strategies that enable them to manage optimally in their daily lives (Marshall *et al.*, 2022).

Artificial Intelligence (AI) is technology designed to operate activities that typically require human intelligence (Tahan and Zygoulis, 2020). A global perspective further highlights the need for careful AI integration. While many AI technologies are developed and tested in high-income settings, their adoption could help address healthcare gaps in resource-limited regions. For example, AI driven decision support could guide nurses in remote or underserved areas, improving the consistency and accuracy of care where specialist expertise is scarce (Hassanein *et al.*, 2025).

Rapid advances in artificial intelligence (AI) have sparked confidence in its potential to enhance the efficiency of health care service delivery and patient outcomes. The needs of affected stakeholders on the use of AI in health care are not yet fully understood. Human factors, such as trust, perceived usefulness, and privacy, play an important role in the acceptance and adoption of past technologies in health care (Chew and Achananuparp, 2022).

However, Ethical issues, lack of standardization, and unclear legal liability are among the challenges that face the widespread of AI in healthcare today. In the context of technology, acceptance is defined as the willingness, intention and internal motivation to use a technology as a result of positive attitudes towards the technology or system. Acceptance of AI systems plays a similar role as with the introduction of all other new tools. Accepting change is not a simple process. However, in order to improve efficiency and workflow in the long run, acceptance is a key element to adopting and implementing newly introduced changes such as AI in daily practice (Lambert *et al.*, 2023).

Notably, Nurses have positive attitude towards robotic automation, and believed that AI uses would have the potential to overcome the increase in complex medical data and monitor changes in patient care (Karaarslan, Kahrama and Ergin, 2024). Thus, in order for head nurses to be successful and flourish, they must have managerial skills and use AI in their work. Managers must now take into account using AI technologies to enhance healthcare quality and put in place a training program to raise nursing staff's awareness of AI in order to succeed and thrive at work (Abdullah *et al.*, 2023).

Moreover, The integration of Artificial Intelligence (AI) in Psychotherapy represents a significant phase in the evolution of mental health care, leveraging technology to enhance both treatment efficacy and accessibility (Zhang and Wang, 2024). Also, AI-based counseling services can be accessed through various platforms (ChatGPT, mobile applications, AI-generated websites, Chatbots,

automated self-help programs, and others), which provide mental health assistance to individuals experiencing mental health challenges, such as emotional distress, anxiety, depression, or stress (Rehman and Sajjad, 2025).

Significance of the study

In the accordance with Egypt's vision 2030, The country has started to embrace artificial intelligence & technology in different sectors (Egypt's Artificial Intelligence Future, 2020) that can address and give access to the most recent evidence-based practices (Seibert *et al.*, 2021). Moreover, AI-based psychotherapy might reduce public stigma and limited access to traditional mental health services (D'Alfonso, 2020 ;Aktan, Turhan, and Dolu, 2022). Therefore, the current study will be conducted to assess knowledge, attitudes and Perception among Psychiatric healthcare providers regard utilization of artificial intelligence technology in psychotherapy .

Aim of the study

The aim of this study was to assess the knowledge and attitudes among psychiatric healthcare providers regard utilization of artificial intelligence technology in psychotherapy.

Research question

- What is the level of Knowledge among Psychiatric Healthcare Providers regard utilization of AI in the Psychotherapy?
- What is the level of Attitudes among Psychiatric Healthcare Providers regard utilization of AI in the Psychotherapy?
- Is there relation between knowledge and Attitudes among Psychiatric Healthcare Providers regard utilization of AI in the Psychotherapy?

Methods

Research design

A descriptive cross- sectional study design was utilized in the current study.

Study setting

This study was conducted at El-Azazi hospital for mental health ,affiliated with the ministry of health and Al-salam hospital of Zagazig University Hospitals, the Sharkia Governorate of Egypt. The two hospitals are the most important government places that offer medical services in the sharquia governorate.

Study participants

A Purposive sample of 90 psychiatric nurses, 30 Psychologists and 35 psychiatrists from the above-

RESEARCH PAPER

mentioned settings. The study included psychiatric health providers who care for mentally ill patients, both genders, agree to participate in the study and all educational qualifications.

Sample size, Based on positive nurses' attitude toward using Artificial Intelligence Technology in health settings. was 65.4% (Elsayed and sleem 2021) and total number of psychiatric healthcare providers was 272 divided on nurses are 157, psychologists are 52 and are psychiatrists 63, from El-Azazy hospital and Al-salam hospital at Zagazig University; 90 psychiatric nurses, 30 Psychologists and 35 psychiatrists., at confidence level 95% added two be round number; the sample size was calculated to be 155 psychiatric health care providers. The required number of psychiatric healthcare providers will be calculated with the following formula (number of psychiatric healthcare providers /total number of psychiatric health providers in zagazig city × calculated psychiatric healthcare providers to fulfills calculated sample size.

Tools of data collection

Tool I: structured interview questionnaire :

It was developed by the researcher based on a scientific reviews of literature to assess the following parts:

Part 1: Demographic data of psychiatric health care providers:

It comprised a set of demographic data to capture gender, age, job type, educational qualifications and Experience.

Part 2: Artificial intelligence practices by psychiatric healthcare providers in psychotherapy.

It was developed by researcher to determine Psychiatric Health Providers' Practices toward AI in Psychotherapy. It consisted of four questions.

Tool II Knowledge About Artificial Intelligence

It was developed by Al-Sabawy (2023) to assess the level of Knowledge among Psychiatric Healthcare Providers regard utilization of AI in the Psychotherapy. This questionnaire consists of 4 items.

Scoring system:

This scale's items are rated on five-point Likert scale. It was categorized as one = strongly disagree, two= disagree, three= neither disagree nor agree, four= agree, five= strongly agree. The total score ranges from 4-20, The higher score, The higher level of knowledge toward AI technology in psychotherapy. The scores of the items were summed up and the total

was divided by the number of the items, giving the mean score. This mean score was divided as follow:

- Low: mean score ranged from 1 to 2.60

- Moderate: mean score ranged from 2.61 to 3.40

-High: mean score ranged from 3.41 to 5

Tool III Attitude towards artificial questionnaire

It was developed by Schepman and Rodway (2020) to Identify the level of Attitudes among Psychiatric Healthcare Providers regard utilization of AI in the Psychotherapy. This questionnaire consists of 16 items.

Scoring system:

This scale's items are rated on five-point Likert scale. It was categorized as one = strongly disagree, two= disagree, three= neither disagree nor agree, four= agree, five= strongly agree. The total score ranges from 16-80, A higher score means a higher level of attitude toward AI technology in psychotherapy.

The scores of the items were summed up and the total was divided by the number of the items, giving the mean score. This mean score was divided as follow:

- positive attitude: mean score more than 3.32

- Negative attitude: mean score less than 3.31

Tool validity and reliability

The tools were reviewed for content validity by a panel of five experts from the department of psychiatric and mental health nursing at the Faculty of Nursing, Zagazig University. The experts evaluated the tools for clarity, relevance, comprehensiveness, and understandability. All scales were translated into Arabic using the translate-back-translate method, thereby preserving the original validity of the instruments. Their recommendations were taken into consideration

Reliability was assessed using Cronbach's alpha coefficient, which demonstrated a good level of reliability as follows:

Perception scale yielded a Cronbach's α of 0.790, Knowledge scale yielded a Cronbach's α of 0.736 and Attitude scale scored 0.780, indicating strong reliability for measures.

Field work

Following ethical approval and permission to proceed with the study, the researcher approached psychiatric healthcare providers who met the

inclusion criteria. The psychiatric health care providers (nurses, psychologists and psychiatrists) were asked to fill in the form sheet. The questionnaires from psychiatric nurses were collected on different days than those from psychiatrists and psychotherapists. The researchers met the psychiatric healthcare providers in the office room. After explaining aim of the research and obtaining written consent from psychiatric health care provider and begin to interview to collect the relevant data utilizing data collection instruments. The total time that the nurses, psychologists and psychiatrists took for answering the queries ranged from 25 to 30 minutes. The researcher went to El-Azazi Hospital twice a week (Saturday and Monday), from 9:30 a.m. to 2 p.m., Al-salam hospital once a week (Thursday) from 10 a.m. to 1 p.m., to collect data. The data collection period continued for three months, starting in beginning of August to the end of October 2025..

Pilot study

A pilot study was conducted on psychiatric health care providers (10 psychiatric nurses, 3 Psychologists and 4 Psychiatrists) approximately 10% of the calculated total sample size. The primary aim was to assess the feasibility and clarity of the data collection tools, as well as to estimate the time required for completion. Since no modifications were necessary following the pilot phase, the pilot sample was subsequently incorporated into the main study sample.

Administrative and ethical consideration

The study proposal received ethical clearance from the postgraduate and research ethics committee (REC) at the Faculty of Nursing, Zagazig University, under approval code M.DZU.NUR/266/13/5/2025. Before initiating the study, formal authorization was obtained through an official letter issued by the dean of the Faculty of Nursing to both the director of El-Azazi hospital for mental health and the dean of the Faculty of Medicine at Zagazig University. Subsequently, the hospital director and nursing director granted permission to proceed with the research.

Statistical analysis

All data were collected, tabulated and statistically analyzed using IBM SPSS for windows (Version 25; IBM Corp., Armonk, NY, USA, 2017). Quantitative data were expressed as the mean $\pm$ SD and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Percent of categorical variables were compared using Chi-square test or Fisher's exact test when appropriate. ANOVA (One way analysis of

variance) test was used for comparison between more than two different groups of quantitative data which were normally distributed.

Pearson correlation coefficient was calculated to assess relationship between study variables, (+) sign indicate direct correlation & (-) sign indicate inverse correlation. Multiple linear regression (step-wise) was also used to predict factors which affect perception, knowledge and attitude scores. Cronbach alpha coefficient was calculated to assess the reliability of the scales through their internal consistency. P-value < 0.05 was considered statistically significant, p-value < 0.01 was considered highly statistically significant, and p-value ≥ 0.05 was considered statistically non-significant.

Results

Table 1 Demographic characteristics of psychiatric healthcare providers. Regarding psychiatric nurses, most of them were females, from 20 to 30 years old, had bachelor degree, had up to five years of experience. Regarding psychologists, most of them were females, from 20 to 30 years old, had bachelor degree, had up to five years of experience. Regarding Psychiatrists, most of them were females, from 20 to 30 years old, had bachelor degree, had up to five years of experience.

Table 2 illustrates artificial intelligence practices by psychiatric healthcare providers in psychotherapy.

Figure 1 illustrates total knowledge levels score about AI in psychotherapy where more than half of Psychiatric nurses (54.4%) and Psychiatrists (57.1%) had high level of knowledge compared to Psychologists(30%) .

Table 3 illustrates total attitude score about AI in psychotherapy where more than half of Psychiatric nurses (52.2%) and Psychiatrists (68.6%) had positive score compared to of Psychologists(30%) .

Table 4 shows a highly statistical significant ($p < 0.01$) positive correlation between knowledge and attitude among psychiatric healthcare providers.

Table 5 clarifies that knowledge had a highly significant positive effect on attitude of psychiatric healthcare providers. The model explains 34.5% of the attitude score as shown by value of r-square. Other socio-demographic characteristics had no effect on the attitude score.

Discussion

This study aimed to assess knowledge and attitudes among psychiatric healthcare providers regard utilization of artificial intelligence technology in psychotherapy. The findings indicated a statistically significant difference among psychiatric nurses,

psychologists and psychiatrists regarding total knowledge levels score and total attitude score about AI in psychotherapy. These exhibited highly significant positive correlation between knowledge and attitude among psychiatric healthcare providers. The results offer clear answers to the research questions.

Regarding artificial intelligence Practices, the current study results showed that all healthcare providers are not having AI unit in the hospital, but reported that the most common types of AI tools in psychotherapy were deep seek ,Gemini, copilot and GPT. The common uses of AI in psychotherapy were schizophrenia , depression and anxiety conditions, cognitive behavioral therapy, acceptance and commitment therapy, dialectical behavior therapy, emotional support and use in mindfulness and the most common purposes of AI use were in Psychotherapy and Psycho-education.

These patterns can be rationally explained by the accessibility, cost-effectiveness, and functional strengths of these tools. DeepSeek, Gemini, Copilot and GPT are widely recognized for strong performance in information retrieval, psychoeducational content generation, supportive dialogues, and aligning with training in evidence-based psychotherapies, as these models excel in generating structured therapeutic content, role-playing scenarios, and adapting cognitive behavioral therapy, acceptance and commitment therapy, dialectical behavior therapy techniques making them practical choices for psychiatric healthcare providers. The focus across all groups on schizophrenia, depression, and anxiety conditions reflects the high global and regional prevalence of these disorders, combined with AI's demonstrated capabilities in symptom monitoring, psychoeducation, and adjunctive support for common mental health conditions.

This result was in harmony with the study **García-Sastre *et al.*,(2024)** in Spain revealed that nurses have been shown to effectively provide psychotherapy in a variety of settings, including mental health, chronic illness and bereavement.

Moreover, these results were in line with a study conducted by **Yıldız, (2025)** in Türkiye revealed that AI offers undeniable contributions to diagnostic processes and care coordination and **Dehbozorgi *et al.*,(2025)** in Iran stated that AI enhances early detection and intervention for mental health conditions and highlighted the effectiveness of AI-driven tools, such as chatbots and predictive modeling, in improving patient engagement and tailoring interventions.

Additionally, this result was in consistent with the study **Blease *et al.*, (2024)**, in a survey of American Psychiatric Association-affiliated psychiatrists, found that 44% had used ChatGPT-3.5 and 33% had used GPT-4.0 to assist with clinical questions and **Spytska,(2025)** in Ukraine, revealed that chatbot successfully decreases anxiety, personal engagement and emotional support offered by a therapist provide more profound therapeutic effects, especially in high-stress or crisis circumstances.

Regarding total knowledge levels score among psychiatric healthcare providers, the current study found that a statistically significant difference among psychiatric nurses, psychologists and psychiatrists regarding total knowledge levels score about AI in psychotherapy where more than half of Psychiatric nurses and Psychiatrists had high level of knowledge compared to Psychologists, who were predominantly clustered at the moderate knowledge level. Notably, no psychiatrist scored in the low-knowledge category, whereas of psychologists did.

These findings indicate that psychologists demonstrating comparatively lower levels relative to both psychiatric nurses and psychiatrists. This difference can be explained by the distinct professional roles, daily demands, and patterns of AI tool exposure among the groups. Psychiatric nurses and psychiatrists, who often work in hospital settings , encouraging greater experimentation with accessible AI tools (e.g., DeepSeek and Gemini), and gain knowledge from scientific conferences of AI, thereby building higher functional knowledge. In contrast, psychologists may adopt approaches consistent with structured psychotherapies, relying less on generative AI for core therapeutic processes and more on traditional evidence-based methods.

These findings were in line with **Alruwaili *et al.*, (2024)** in their study in Saudi Arabia and **Nikbakht,(2024)** in Iran who reported that high level of high knowledge of artificial intelligence in the nurses.

Also,These findings supported by an international study conducted by **Cecil *et al.*,(2025)** in Germany and the United States which found that psychiatrists showing higher learning and adoption intentions of AI technologies compared to psychologists and psychotherapists.

On contrary, **Abdullah and Fakieh (2020)**, in Saudi Arabia who reported a general lack of knowledge regarding AI applications across diverse healthcare employee categories and **Ahmed, Elderiny and Elhoty, (2024)**, in Egypt who reported

around two-thirds of studied nurses had unsatisfactory level of knowledge.

Moreover, Iranian study carried out by **Namdar Areshtanab et al., (2025)** revealed that most nurses had low knowledge and **Elshamy et al., (2026)** in Egypt, found that minority of nurses (14.6%) demonstrated a high knowledge level.

Also, a study of **Wagner and Schwind, (2025)**, in Germany, revealed that approximately 40% of psychotherapists have a knowledge gap regarding Artificial intelligence (AI)/ machine learning (ML) is structural rather than incidental within psychotherapy-oriented professions and a study of **Sommer, Schmidbauer and Wahl, (2024)** in Germany, revealed that the majority of nurses (74.8%) have limited knowledge about Artificial Intelligence (AI).

Regarding total attitude score towards artificial intelligence among psychiatric healthcare providers, the current study results indicated that a statistically significant difference among psychiatric nurses, psychologists and psychiatrists regarding total attitude score about AI in psychotherapy, where more than half of Psychiatric nurses and two thirds Psychiatrists had positive score compared to Psychologists. This significant difference can be explained by the varying nature of professional roles and daily responsibilities. Also, psychiatric nurses and psychiatrists, had high level of knowledge compared to psychologists.

In contrast, psychologists, who are trained to deliver structured, in-depth psychotherapies may adopt a more cautious attitude due to greater concern about the potential limitations of AI in replicating therapeutic alliance, empathy, and nuanced clinical judgment and prioritize theoretical fidelity and evidence-based therapeutic frameworks.

In the same vein, **Abdelkareem, Bakri and Ahmed. (2024)**, in Egypt who found that more than 64% of nurses had a positive attitude toward the application of AI in health care and **Issa et al., (2024)** in Jordan, the Kingdom of Saudi Arabia (KSA), the United Arab Emirates (UAE), and Egypt, revealed that participants have generally positive attitudes toward the role of AI in administrative and clinical processes.

Also, Iranian study carried out by **Namdar Areshtanab et al., (2025)** revealed that most nurses had high positive attitude toward using artificial intelligence in nursing care and **Al-Sabawy, (2023)**, who carried out a study in Iraq, clarified that most of

the nurses had positive attitude toward the adoption of AI in their nursing practice.

Furthermore, these findings were in line with a study conducted by **Swan, (2021)** in the United States of America and **Sabra et al., (2023)** in Egypt, showed that most nurses had a positive attitude toward using AI in healthcare.

On the contrary, the study by **Higgins et al., (2023)** a study in Australia and **Dailah et al., (2024)**, in Saudi Arabia revealed that conservative attitudes toward AI and these results were inconsistent with study conducted by **Pazer, (2024)**, in Germany that revealed there was complex attitudes of mental health professionals regarding AI.

Moreover, A study of **Ghazy, Diab and Shokry, (2023)** in Egypt that revealed that (58.4%) of nurse managers had negative attitude towards using artificial intelligence.

Concerning the correlation between knowledge and attitude, there was highly significant positive correlation between knowledge and attitude. Step wise multiple linear regression for predicting factors which affect attitude of psychiatric health care providers, that knowledge had a highly significant positive effect on attitude of psychiatric healthcare providers. This strong interrelationship can be rationally explained by greater knowledge about a technology fosters more favorable attitudes.

These findings were consistent with a study conducted in Egypt by **Azzam et al., (2026)**, which revealed that attitude scores were significantly correlated with Knowledge among healthcare professionals. Also, **Rony et al., (2024)**, in Bangladesh and **Alabbad et al., (2025)** in Saudi Arabia reported that significant positive correlation between knowledge score and each attitude among healthcare workers.

These findings were consistent with a study conducted in Saudi Arabia by **Alrashedi et al., (2026)**, which revealed that there was the moderate positive correlation between nurses' knowledge of and attitudes toward AI and showed that higher attitude scores were associated with higher knowledge levels. Also, the current study results were congruent with Iranian study carried out by **Namdar Areshtanab et al., (2025)**, which found that there was a positive and significant correlation with a small effect size between nurses' knowledge and their attitude.

Furthermore, **Elshamy et al., (2026)** in Egypt, found that a statistically positive correlation was

RESEARCH PAPER

found between the total knowledge score regarding utilization of artificial intelligence and the total attitude score regard utilization of artificial intelligence among nurses .

Conclusion

Based on the findings of the current study, it can be concluded that more than half of Psychiatric nurses and psychiatrists had high level of knowledge compared to Psychologists and more than half of Psychiatric nurses and two thirds Psychiatrists had positive attitude compared to Psychologists. Moreover, there was highly significant positive correlation between knowledge and attitudes. Additionally, step wise multiple linear regression showed that knowledge had a highly significant positive effect on attitude of psychiatric healthcare providers.

Recommendations

Based on the study findings, it was recommended that

- Provide continuous educational courses highlighting benefits, potential limitations, ethical implications, and practical applications of AI in psychotherapy to foster informed perceptions and encourage positive attitudes toward adoption of AI.

- Provide training programs to raise knowledge of psychiatric healthcare providers toward AI in psychotherapy.

Authors' contributions

Y.F.; created the thesis, provided an explanation, collected information, produced the first manuscript. S.R.E., M.M.E.; made significant contributions to the goal and research questions, introduction, review of the study's significance, debate, conclusion, and recommendations. reviewed, edited, and offered critical feedback on the text. H.H.A; participated in every phase of the research process, oversaw everything, and provided the manuscript's initial draft for publication. All authors revised and approved the final manuscript.

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Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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Table 1: Demographic characteristics of the studied Psychiatric healthcare providers according demographic characteristics (n=155).

demographic characteristics	psychiatric nurses (n=90)		Psychologists (n=30)		Psychiatrists (n=35)	
	No.	%	No.	%	No.	%
Gender						
Male	29	32.2	12	40.0	17	48.6
Female	61	67.8	18	60.0	18	51.4
Age (years)						
20-30	64	71.1	24	80.0	26	74.3
31-40	20	22.2	3	10.0	9	25.7
>40	6	6.7	3	10.0	0	0.0
Educational Qualifications						
License/ Bachelor	75	83.3	25	83.3	24	68.6
Higher Diploma	13	14.4	0	0.0	1	2.9
Master	2	2.2	4	13.3	10	28.6
Ph. D	0	0.0	0	0.0	0	0.0
Assist. Prof.	0	0.0	0	0.0	0	0.0
Prof	0	0.0	1	3.3	0	0.0
Experience (years)						
0-5	51	56.7	26	86.7	23	65.7
6-10	23	25.6	1	3.3	11	31.4
11-15	10	11.1	0	0.0	1	2.9
16-20	4	4.4	3	10.0	0	0.0
>20	2	2.2	0	0.0	0	0.0
Workplace						

RESEARCH PAPER

Al-Azazi Hospital	80	88.9	21	70.0	10	28.6
Al-salam hospital/Psychiatric Department, Faculty of medicine	10	11.1	9	30.0	25	71.4

Table 2: illustrates artificial intelligence practices by psychiatric healthcare providers in psychotherapy.

Items	psychiatric nurses (n=90)		Psychologists (n=30)		Psychiatrists (n=35)	
	No.	%	No.	%	No.	%
Having AI unit in college/hospital?						
Yes	0	0.0	0	0.0	0	0.0
No	90	100.0	30	100.0	35	100.0
What do you think about ?						
A. Types of AI Tools in psychotherapy						
deep seek	35	38.9	1	3.3	15	42.9
Gemini	30	33.3	2	6.7	10	28.6
copilot and GPT	19	21.1	17	56.7	5	14.3
APPS	1	1.1	1	3.3	3	8.6
Grok	3	3.3	5	16.7	1	2.9
smart questionnaires	0	0.0	1	3.3	0	0.0
virtual reality therapy	0	0.0	1	3.3	0	0.0
Do not know	2	2.2	2	6.7	1	2.9
B. The uses of AI in psychotherapy						
Schizophrenia , depression, anxiety	30	33.3	9	30.0	11	31.4
Substance addiction	5	5.6	2	6.7	2	5.7
CBT,ACT,DBT	10	11.1	8	26.7	2	5.7
Phobia PTSD	4	4.4	2	6.7	4	11.4
Support	20	22.2	3	10.0	2	5.7
use in mindfulness	20	22.2	5	16.7	6	17.1
Do not know	1	1.1	1	3.3	8	22.9
C. The purpose of AI used in Psychotherapy.						
Psychotherapy	45	50.0	23	67.6	12	34.3
Easy to use and reduce effort.	12	13.3	2	6.7	2	5.7
Psycho-education	23	25.6	2	6.7	12	34.3
Help communication and reduce stigma.	6	6.7	2	6.7	2	5.7
Do not know	4	4.4	1	3.3	7	20.0

ACT – Acceptance and Commitment Therapy. **CBT** – Cognitive Behavioral Therapy

Apps-Applications

DBT – Dialectical Behavior Therapy.

PTSD – Post-Traumatic Stress Disorder

Figure 1: Total knowledge score of healthcare providers about artificial intelligence in psychotherapy(n=155).



Table 3: Frequency distribution of total attitude score regard utilization of artificial intelligence in psychotherapy as reported by studied Psychiatric healthcare providers (n=155).

Attitude score	psychiatric nurses (n=90)		Psychologists (n=30)		Psychiatrists (n=35)		χ^2	p-value
	No.	%	No.	%	No.	%		
Negative	43	47.8	21	70.0	11	31.4	9.655	0.008**
Positive	47	52.2	9	30.0	24	68.6		

χ^2 : Chi square test, **: statistically highly significant ($p < 0.01$).

Table 4: correlation matrix between study variables.

	R	p	r	p
Knowledge	0.429	0.001**		
Attitude	0.474	0.001**	0.517	0.001**

**: statistically highly significant ($p < 0.01$), r: correlation coefficient

Table 5: Step wise multiple linear regression for predicting factors which affect attitude of psychiatric health care providers

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta				Lower Bound	Upper Bound
(Constant)	.931	.258			3.606	.000	.421	1.441
knowledge	.394	.075	.384		5.282	0.001**	.247	.542

**: statistically highly significant ($p < 0.001$) R-square=0.345, ANOVA: F= 40.001, $P < 0.001$

Variables entered and excluded: age, gender, educational qualifications, experience and workplace.

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