Pegem Journal of Education and Instruction, Vol. 16, No. 1, 2026 (pp. 189-194)

RESEARCH ARTICLE WWW.PEGEGOG.NET

Applications of Artificial Intelligence in Clinical Psychology

Dr. Khaoula Hamadi[1] , Prof. Nassima Mezaour [2], Prof. Djemaa Ouledhaimouda [3]

[1] University of Ghardaia, Algeria. Email: hamadi.khaoula@univ-ghardaia.dz
[2] University of Ghardaia, Algeria. Email: mezaour.nassima@univ-ghardaia.dz
[3]University of Ghardaia, Algeria. Email: ouledhaimouda.djemaa@univ-ghardaia.dz
Received : 21/08/2025 ; Accepted : 26/11/2025 ; Published : 05/01/2026

Abstract:

This theoretical research paper aims to highlight the applications of artificial intelligence in the field of clinical psychology by presenting a set of theoretical information and some applied previous studies relevant to our topic.

The results showed the effectiveness of AI-based programs, which can be considered as an integrated solution combining technology and mental health within the healthcare system.

Keywords: Artificial Intelligence Programs, Clinical Psychology.

Introduction:

Technological and informational development has imposed on the world the necessity of utilizing all research innovations and discoveries in various fields of science, in order to keep pace with the astounding strides of scientific inventions. This has generated significant interest in the models and applications of artificial intelligence in all fields of knowledge.

Artificial intelligence is considered one of the modern technologies contributing to the understanding of human behavior. The systematic integration of these technologies into clinical psychology contributes to providing innovative solutions for understanding and analyzing various mental and psychological processes.

These innovative solutions include aspects of: psychological assessment, diagnosis, therapy, as well as healthcare.

Artificial intelligence is one of the most prominent technological developments that has changed the course of many sciences and applied fields. It is a type of software system that aims to simulate human capabilities in thinking, learning, and decision-making. This field has witnessed significant development in recent years due to advances in machine learning and deep neural networks, giving it the ability to process and analyze massive amounts of data in ways humans cannot.

The employment of remote service delivery means peaked during the "COVID-19" crisis, transforming information technology and artificial intelligence into a central player in bridging the service gap for individuals in remote locations or areas lacking services, thus helping to balance access to mental healthcare opportunities across the national territories of countries. (Al-Razrazi, 2024, p. 338)

Based on the above, this study aims to highlight the applications of artificial intelligence in the field of clinical psychology by presenting a set of theoretical information and analyzing some applied previous studies relevant to our topic.

The research problem lies in attempting to uncover the role of artificial intelligence in the field of clinical psychology by answering the following questions:

1. Can artificial intelligence provide an appropriate diagnosis for the condition?
2. Can artificial intelligence manage interactive therapy sessions?

3. What are the most prominent results obtained from using artificial intelligence in the field of psychology?

Significance of the Study:

- The study highlights the importance of artificial intelligence as an auxiliary tool in the field of clinical psychology.
- Presenting a brief overview of available AI applications at the electronic means level.
- Clarifying the most important contributions of AI in the field of psychology.

Objectives of the Study:

- To determine the possibility of applying AI in the field of psychological diagnosis and analysis.
- To determine the possibility of applying AI in managing interactive therapy sessions.
- To identify the contributions of AI in the field of clinical psychology.

The Concept of Artificial Intelligence:

It is the science and technology aimed at developing systems and machines that mimic human intellectual and mental capabilities and that improve themselves by learning from the data and information they obtain. (Fayrouz & Noureddine, 2025, p. 140)

Objectives of Artificial Intelligence in Clinical Psychology:

The use of artificial intelligence has become urgent in the field of clinical psychology, especially in the diagnostic, therapeutic, and healthcare aspects:

1. **Psychological Diagnosis:**
    - AI can assist the psychological specialist in diagnosing psychological disorders accurately and quickly.
    - Contributing to the early detection of psychological and personality disorders.
    - Patient data is currently analysed and assessed remotely through the development of AI algorithms without the need for a physical visit to the psychologist's office.
    - AI technology allows for the processing of body language and tone of voice emitted by the patient.
    - Although AI contributes to analysing massive data on psychological conditions and discovering various factors leading to psychological disorders, it raises a set of concerns that could potentially lead to the misuse of their personal information, necessitating the existence of organizations or bodies to protect their rights (ethical issues). On the other hand, the potential marginalization of human competencies is very likely in light of the impressive results achieved by AI.
2. **Therapeutic Intervention:**
    - AI technologies enable the development of therapeutic systems that contribute to alleviating the psychological suffering of pathological cases.
    - Creating effective personalized treatment plans based on individual case data, including medical recommendations and appropriate lifestyle changes.
    - The existence of applications that provide moral support and appropriate psychological and therapeutic counselling guidance for the individual case.
    - Using exposure therapy technology through AI-supported virtual reality simulations for some disorders such as phobias and pathological fears.
3. **Mental Healthcare:**
    - Documenting psychological medical information.
    - It benefits the practicing psychologist in uncovering all the problems facing the

disturbed individual before delving into therapeutic methods and plans.
    - Explaining treatment programs and various specialized scientific terms in the field of psychological diagnosis.
    - AI can be used to improve the quality of healthcare and enhance patient experience, such as using robots to provide basic healthcare to patients in remote or distant areas.
    - AI systems can predict potential relapses and provide rapid interventions to prevent the deterioration of the condition in a timely manner.
    - Reducing the cost of obtaining mental healthcare through the use of AI applications often leads to a lack of human interaction, feeling dissatisfied, and non-adherence to recommendations and treatment programs.
4. **Medical Research:**
    - AI can be used to accelerate medical research processes and analyse medical data, genetic transformations, and other health-related factors.
    - It can also identify relationships between various health-related factors and develop predictions for future diseases and treatments.

Some Applications of Artificial Intelligence in the Field of Mental Health:

The results of a study (Penne baker & all, 2015) show that data analysis using AI can reveal feelings of depression, allowing the specialist to provide early intervention, as these techniques contribute to making an accurate diagnosis and providing targeted psychological solutions. (Penne baker, 2015, p. 12)

In addition, a study (Bake & Siemens, 2014) indicates that AI can improve the initial diagnosis of psychological disorders and confirm the effectiveness of electronic therapy in improving cases of depression and anxiety. (Dehbozorgi, 2025)

The following table presents a group of smart applications used in the psychological field and their most prominent research results:

AI Application	**What it is**	**Research Results**
Woebot	An AI-based chat bot that relies on natural language processing. It is based on principles of Cognitive Behavioural Therapy (CBT). It provides psychological services and support to the user.	Experimental studies showed a noticeable decrease in depressive symptoms. The program's effects are strong for cases that have external support.
Wysa	An AI-based chat bot that relies on natural language processing. It is based on principles of CBT and Dialectical Behaviour Therapy (DBT). It provides psychological services for dealing with stress, anxiety, mood disorders, and sleep.	Provides short-term psychological support while the application continues to update its capabilities regularly and expand its resources.

Tess	An AI-based chat bot that relies on natural language processing. It is based on principles of CBT. It provides services to support mental health in dealing with stress, anxiety, and negative thoughts.	Preliminary research indicates that the application helps alleviate some anxiety symptoms in the short term.
Mood path	An application designed to track the user's mood daily.	Results showed that using the application for 4 weeks leads to increased self-awareness of mood.
Headspace	An application designed to provide meditation and mindfulness exercises to relieve anxiety and improve sleep.	Results showed that regular use of the application reduces cortisol levels and improves sleep quality and attention.
Quartet Health	An integrated behavioural healthcare system. It provides virtual therapeutic services and analytics to improve the quality of care.	It can be considered an integrated solution that combines technology and mental health within the comprehensive healthcare system.
Spring Health	An integrated platform that offers training programs and cognitive exercises with medication management features based on DSM diagnostic criteria.	Reports indicate an improvement in users' conditions, with the aim of achieving high-quality mental healthcare.
Emotionary	An application designed to help those with autism spectrum disorder, relying on three main functions: facial recognition, interactive exercises, and progress tracking.	Results showed a noticeable improvement in the ability to recognize emotions with regular use. It is used as an auxiliary training tool in rehabilitation centers.
Autism AI	An intelligent system for detecting autism spectrum disorder. It provides a quick and comprehensive screening based on user behavioural and demographic data.	AI can effectively analyse behavioural data, which enhances the ability to predict autism.
Apraxia Therapy	An application designed for children suffering from apraxia of speech.	Studies have shown that the application helped improve speech when used 3-4 times per week.

Table 01: Prepared by the researcher.

These applications represent a realistic picture of the uses of AI and its integration into actual life. Technological progress has allowed for the provision of more information, and it is expected that in the future, AI will play an important role in the psychological field by providing new opportunities for the early detection of various disorders, their differential and accurate diagnosis, and the provision of appropriate, more effective, and individualized treatment plans for cases.

Previous Studies:

Many researchers and specialists in the psychological field are interested in conducting studies that include artificial intelligence to keep pace with the technological age. We have selected a group of studies, categorized as follows:

In the Field of Autism:

- **Study by "Al-Sharqawi & Al-Hataliya, 2024" in Oman:**
  - **Title:** The Effectiveness of Artificial Intelligence Applications in Developing Expressive Language Vocabulary among Children with Autism Spectrum Disorder .
  - **Objective:** The study aimed to verify the effectiveness of AI applications in developing expressive language vocabulary among children with ASD.
  - **Sample:** The study was conducted on 10 children with ASD.
  - **Results:** The study resulted in the effectiveness of the used program, based on the educational feedback strategy, in increasing the language vocabulary of the participating cases, in addition to the continuity of improvement during the follow-up period. (Al-Sharqawi & Al-Hataliya, 2024)
- **Study by "Nashwa Mohamed Soliman, 2025" in Egypt:**
  - **Title:** The Effectiveness of Artificial Intelligence Applications in Diagnosing and Reducing Autism Spectrum Disorder in Children (in the Primary Stage).
  - **Objective:** The study aimed to investigate the effectiveness of AI applications in diagnosing ASD and reducing its impact on children in the primary stage.
  - **Sample:** Included 125 male and female teachers in schools and special needs care centers.
  - **Results:** The study found that AI represents an effective tool in improving the diagnosis of autism and enhancing educational and therapeutic strategies. (Nashwa, 2025, p. 144)

In the Field of Language and Communication Disorders:

- **Study by "Walid Sayed, 2021" in Egypt:**
  - **Title:** The Effectiveness of Using Artificial Intelligence Applications for the Automatic Recognition of Physical Acoustic Characteristics of the Speech of Primary School Students with Speech Sound Disorders.
  - **Objective:** The study aimed to use AI applications for the automatic recognition of the physical acoustic characteristics of the speech of primary school students with speech sound disorders.
  - **Sample:** The study was conducted on six students.
  - **Results:** The study revealed that the presence of physical support and technological support (AI) is an urgent requirement in the context of studying speech disorder sciences. (Sayed, 2021, p. 1176)
- **Study by "Sara El-Henawy, 2024" in Egypt:**
  - **Title:** Artificial Intelligence and its Applications in the Field of Language and Communication Disorders.
  - **Objective:** The study aimed to identify the extent of the effectiveness of the technical integration of AI, its potential in dealing with the field of language and communication disorders and how to diagnose, in addition to its ability to conceive a comprehensive assessment of the condition and propose a treatment plan.
  - **Results:** AI is an effective tool that can contribute to the development of the science of language and communication disorders by employing its capabilities and assessing its impact on the quality of the necessary data. (El-Henawy, 2024, p. 82)

In the Field of Obsessive-Compulsive Disorder:

- **Study by "Qotb Hanour, 2025" in Egypt:**
  - **Title:** The Efficiency of Using Artificial Intelligence in Psychological Diagnosis.

- **Objective:** The study aimed to evaluate the efficiency and effectiveness of using AI techniques in psychological diagnosis.
- **Sample:** The study was conducted on an individual case suffering from OCD.
- **Results:** After analyzing the data and drawings using the (Chat GPT) program, the results showed that AI has high efficiency in interpreting psychometric responses.
- The analysis of free drawings using AI proved its effectiveness in revealing feelings of isolation, anxiety, and internal conflicts, indicating the possibility of integrating this technique as an auxiliary tool in psychiatry.

Conclusion:

Through the review of theoretical literature on AI and previous studies on its applications, the results showed the effectiveness of the used programs, starting from the effective analysis of behavioral data, which enhances the ability to predict psychological disorders. It can be considered an integrated solution that combines technology and mental health within the comprehensive healthcare system, in addition to its use as an auxiliary training tool in rehabilitation centers.

Today, AI is causing a revolution in the field of clinical psychology, and the success of its application depends on systematically and regulated overcoming regulatory, technical, and ethical challenges, as optimal exploitation leads to improved mental health.

Recommendations:

- Intensive training on the use of AI applications.
- Organizing training courses on the use of AI applications.
- Developing AI programs for psychological diagnosis that take into account Arab and local culture.

References

Al-Razrazi, A.-M. (2024). Pathways to Enhancing Mental Healthcare through Digital Health Technology and Artificial Intelligence: Opportunities, Challenges, and Future Trends. *Journal of Humanities and Social Sciences of the Academy of the Kingdom of Morocco, Vol. 111, No. 1*, p. 311_324.

Al-Sharqawi & Al-Hataliya. (2024). The Effectiveness of Artificial Intelligence Applications in Developing Expressive Language Vocabulary among Children with Autism Spectrum Disorder. *Journal of Scientific Research in Education, Vol. 25, No. 5*.

Dehbozorgi, R. Z. (2025). *The application of artificial intelligence in the field of mental health.* BMC Psychiatry 25.

El-Henawy, S. (2024). Artificial Intelligence and its Applications in the Field of Language and Communication Disorders. *Journal of the Faculty of Arts, Port Said University, Vol. 30, No. 30, Part 1*, p. 81_109.

Fayrouz & Noureddine. (2025). The Importance of Artificial Intelligence Applications in Developing Statistical Processing Skills.

Nashwa, M. S. (2025). The Effectiveness of Artificial Intelligence Applications in Diagnosing and Reducing Autism Spectrum Disorder in Children (in the Primary Stage). *Journal of Applied Research in Sciences and Humanities, Vol. 2*, p. 144_161.

Penne baker, J. W. (2015). *The development and psychometric properties of LIWC.*

Sayed, W. (2021). The Effectiveness of Using Artificial Intelligence Applications for the Automatic Recognition of Physical Acoustic Characteristics of the Speech of Primary School Students with Speech Sound Disorders. *Educational Journal, Faculty of Education, Sohag, No. 88*, p. 1176_1269.