Vol. 06, No. 1, pp. 163-184 | APRIL 2026
DOI: https:// DOI 10.34118/jskp.v6i1.4560

Article history (leave this part):
Submission date: 04.02-2026
Acceptance date: 31-03-2026
Available online: 20-04-2026
Keywords:
artificial intelligence, psychological assessment , clinical accuracy, ethical challenges.
Funding:
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.
Competing interest:
The author(s) have declared that no **competing interests** exist.
Cite as (leave this part):
Hanan Abufares Elkhimry; . (2024). Title. Journal of Science and Knowledge Horizons: 4(1), 283-293. https://doi.org/10.34118/jskp.v2i02.2727

Journal of Science and Knowledge Horizons
ISSN 2800-1273-EISSN 2830-8379

The role of artificial intelligence in Clinical Psychological Assessment an analytical approach between clinical accuracy and ethical challenges

*1 Pr, Kamila Sider, University of Bouira (Algeria) *, k.sider@univ-bouira.dz*
2 Pr,Samir Qouta, Doha Institute for Graduate Studies (Qatar), Samir.qouta@dohainstitute.edu.qa
https://orcid.org/0009-0005-9822-6108
https://orcid.org/0000-0003-2020-9664

Abstract:

This article explores the use of artificial intelligence in clinical psychological assessment, focusing on its benefits and limitations. It highlights how AI can enhance diagnostic accuracy, efficiency, and reliability, while also raising ethical concerns related to confidentiality, professional responsibility, and the human aspect of therapy.

Based on an analytical review of recent research, the study shows that although AI supports clinical decision-making, it cannot replace human judgment, especially in complex emotional or cultural contexts. The article concludes by stressing the need for ethically regulated, hybrid assessment models that integrate artificial intelligence with clinical expertise to preserve the quality and humanity of psychological practice.

* ***Kamila Sider***

Introduction:

Clinical psychological assessment is one of the main pillars in clinical practice, as it enables the specialist to understand the individual's psychological state, identify disorders, and build an appropriate treatment plan based on objective data. (Al-Sarjani, 2014). This type of assessment is based on various tools, including clinical interviews, psychological tests, and behavioral observations, which together allow the therapist to draw a comprehensive picture of the individual's psychological balance and his emotional or cognitive problems.

In recent years, both the medical and psychological field has witnessed an accelerated integration of AI technologies into a number of clinical processes, such as diagnosis, classification, and analysis of complex psychological data (Topol, 2019). Applications based on machine learning algorithms have emerged in the analysis of language patterns, tone of voice, facial expressions, and even biodata, to help detect disorders such as depression and PTSD. (Chaudhury & al, 2021)

Despite the revolutionary nature of these tools, their use in the clinical context is not without problems, perhaps the most prominent of which are: the extent to which artificial intelligence can enhance the accuracy of psychological assessments compared to traditional practices, as well as ethical challenges associated with privacy, algorithmic bias, and Professional Responsibility (Floridi & al, 2018).

The importance of this topic stems from the fact that it represents a sensitive intersection between science, technology, and ethics, and raises new questions about the limits of artificial intelligence in the human field. Therefore, this article aims to provide a critical analytical approach to the clinical applications of artificial intelligence in psychological evaluation, through a theoretical analysis of recent studies, and elucidating their ethical and clinical dimensions. He also seeks to propose approaches to a balance between technological progress and the maintenance of human values in psychological practice.

1--Problematic:

In light of the increasing use of artificial intelligence in clinical psychological environments, a fundamental problem arises related to the nature of the change that these technologies make in the essence of the evaluation process. While artificial intelligence is presented as a way to improve objectivity and reduce human bias in psychological assessment. (Esteva & al, 2019), raises a profound question about the ability of these systems to capture the emotional and contextual complexity that characterizes individual psychological states, something that has long required an interactive human understanding that goes beyond the Digital given.

This problem is compounded when we consider that algorithms designed to analyze psychological data may carry built-in biases in the data they have been trained on, which puts the assessment results at risk of deviation, especially in diverse cultural contexts or psychologically vulnerable groups. (O'neil, 2016) The lack of transparency in the mechanism of algorithmic decision-making also poses an ethical dilemma regarding the patient's right to understand how to assess his psychological state. (Goodman & Flaxman, 2017)

On the other hand, clinical practice is traditionally based on the principle of the moral responsibility of the psychological evaluator, while the use of artificial intelligence tools poses new problems about who bears responsibility if the evaluation results are found to be faulty or misused (Cabitza & al, 2017). This opens the way for rethinking the ethical structure of contemporary psychological practice, and within the limits of what can be delegated to the machine within such a highly sensitive field as clinical psychological work.

The use of artificial intelligence in psychological evaluation is presented as an alternative or complement to human clinical experience, based on its ability to process huge amounts of data, analyze behavior patterns and language accurately and quickly. (Esteva & al, 2019) however, this approach, despite its technical potential, is not without scientific and ethical complexities that touch the essence of the diagnostic process, especially since psychological practice depends, in depth, on human interaction, cultural and individual context.

While AI systems aim to improve the objectivity of evaluation and reduce bias, the algorithms themselves may be based on unbiased data, reproducing the same biases that exist in society (O'neil, 2016). The lack of such systems of "interpretative transparency" also limits the ability of the beneficiary and the practitioner to understand the mechanisms of psychological judgment, which weakens the trust of patients and undermines the principle of autonomy in clinical practice. (Goodman & Flaxman, 2017)

In addition, the absence of unified ethical and legal norms for the use of artificial intelligence in a psychological context raises questions about the distribution of Professional Responsibility, the limits of technology intervention in the decision of assessment and treatment (Cabitza & al, 2017). Therefore, there is a need to hold these technological transformations accountable from a critical perspective that balances technical effectiveness with human values.

Based on the above, the questions of this research are centered on:

- ✓ To what extent can artificial intelligence improve the accuracy of clinical psychological assessments ?
- ✓ What are the limits of this improvement in light of the complexities of the human experience ?

- ✓ What ethical considerations should be considered when using AI tools in psychological assessment ?
- ✓ How to build a model that balances technical competence and ethical responsibility in this context ?

2-Research hypotheses:

- ✓ Artificial intelligence contributes to improving the accuracy of clinical psychological assessments through its ability to quickly and in-depth analyze psychological, linguistic and behavioral data, reducing errors caused by human bias or clinical fatigue.
- ✓ Total dependence on artificial intelligence cannot compensate for the human dimension in psychological assessment, since individual psychological experience is characterized by emotional and cultural complexity that algorithms are not able to perceive or interpret in depth.
- ✓ The use of artificial intelligence in psychological evaluation involves multiple ethical risks, most notably compromising the principle of confidentiality, the possibility of algorithmic bias, and ambiguity in decision-making mechanisms, which may weaken the trust of beneficiaries in psychological practice.
- ✓ The effectiveness of artificial intelligence in the clinical field requires the adoption of an integrative model, combining the technical efficiency of these tools with human professional control, within a legal and ethical framework that ensures the safety and quality of practice.

3-The importance of research:

The importance of this research stems from its confluence with one of the most prominent current issues in clinical psychology, the integration of artificial intelligence into psychological assessment processes. At a time when technical innovations are accelerating to provide intelligent solutions in the medical field, including psychology, the issue of psychological assessment remains one of the most sensitive aspects due to its direct connection with the individual's mental health, and with therapeutic decisions that require accuracy and high responsibility.

The importance of this work lies in the fact that it provides a critical analytical approach that contributes to clarifying the potential and limits of artificial intelligence in this context, without being driven by simplistic or promotional perceptions that focus only on the efficiency of technology without considering its ethical and professional dimensions. The current study also sheds light on the gap between technical progress and responsible clinical practice, making it a theoretical reference that can contribute to the development of

policies for the safe and responsible use of artificial intelligence in psychological assessment.

This study also acquires another significance, as research on artificial intelligence technologies in Psychological Sciences is still rare or limited, while the practical use of these technologies is beginning to find its way to clinics and digital platforms. From this point of view, this research aims to enrich the Arab and international academic debate on this topic, to open new horizons for future research, and to develop integrative models that combine technology and humanitarian considerations.

4-Research objectives:

This research aims to achieve a set of theoretical and analytical goals that seek a deeper understanding of the dimensions of the use of artificial intelligence in psychological assessment, as follows:

- ✓ Analyzing the role of artificial intelligence in enhancing the accuracy of clinical psychological assessments, by reviewing the most prominent applications and techniques adopted in this field.
- ✓ To clarify the limits of artificial intelligence in understanding the human psychological experience, especially in terms of emotional, contextual and cultural aspects that are difficult for algorithms to perceive.
- ✓ Identify the most prominent ethical challenges associated with the use of artificial intelligence in the clinical context, such as privacy issues, algorithmic bias, and lack of transparency.
- ✓ Propose an integrative theoretical framework that balances the technical competence of artificial intelligence with the professional and human responsibility of a psychologist.

5 - Definition of terminology:

5.1. Clinical Psychological Assessment:

Clinical psychological assessment is one of the main pillars of Clinical Psychological work, as it is used to determine the psychological state of an individual and provide an accurate diagnosis of his disorders, as well as the development of an appropriate treatment plan, so that it depends on a set of tools and methods aimed at understanding the psychological and environmental factors that affect the behavior of the individual and his emotional experiences.

- **Definition of Clinical Psychological Assessment:**

Clinical psychological assessment is a systematic process during which a psychologist uses a set of methods and tests to assess the psychological state of an individual, with the aim of identifying mental disorders, diagnosing them, and understanding factors that may affect overall mental health. (Moses, 2018) this assessment includes the collection of information through individual

interviews, standard psychological tests, behavioral assessments, and sometimes the use of special scales to describe the psychological state.

- **The objectives of Clinical Psychological Assessment:**

-The main goal of psychological assessment is to determine the presence or absence of mental disorders, including disorders such as depression, anxiety, personality disorders, adjustment disorders, and others (Miller, 2016).

-Psychological assessment seeks to uncover psychological or environmental factors that may contribute to the appearance of psychological symptoms, such as past trauma or ongoing psychological stress. (Al-Sarraj, 2017)

-A clinical psychological assessment helps the specialist to develop an accurate treatment plan adapted to the patient's needs, whether through psychotherapy or drug therapies.

(Young & al, 2015)

-The purpose of measuring changes over time: psychological assessment can be used to monitor the development of the patient's psychological state over time, which makes it possible to assess the effectiveness of treatment and, if necessary, adjust it.

- **The use of Clinical Psychological Assessment Tools:**

-Clinical interviews: clinical interviews are one of the most prominent tools used in psychological assessment, and are characterized by direct interaction between the psychologist and the patient, so that these interviews allow to understand the psychological state through open dialogue that allows the patient to express his feelings and thoughts freely.

(Hunsley & Mash, 2017)

-Structural diagnostic interview: it is used especially in the diagnosis of mental disorders and contains specific questions aimed at identifying symptoms and diagnostic criteria.

(Al Mazrouei, 2015).

-Psychological tests : they are standard tools used to measure various dimensions of personality and behavior, such as intelligence, social behavior, and feelings. There are two main types of psychological tests:

- **Projective tests:** such as the Rorschach test, which relies on a person's interpretation of ambiguous images to assess deep aspects of their personality (Sullivan & Reitz, 2020).
- **Objective tests:** such as the multidimensional personality scale, which is used to assess a wide range of mental disorders (Butcher & al, 2001).

-Behavioral metrics: these tools involve observing an individual's behaviors in certain environments (such as at home or school) to identify abnormal or maladaptive behavioral patterns. Such tools can include direct observations or daily records (Kanfer & Goldstein, 2013).

-Biological assessments: in some cases, psychological assessment may also require the examination of biological aspects that may affect the psychological state, such as the use of blood tests or measurements of nervous activity (Muench & al, 2016)

5.2. Artificial intelligence:

Artificial intelligence (AI) is defined as a branch of computer science concerned with the design of systems capable of simulating human mental functions such as learning, analysis, decision-making, and adapting to new situations, so that it seeks to develop software capable of performing tasks that usually require a degree of human intelligence, such as problem solving and logical thinking (Russell & Norvig, 2021).

The term artificial intelligence is used to refer to a range of systems that vary in complexity, from simple tools such as profiling engines to advanced systems based on deep learning and Big Data Analysis.

In a psychological context, artificial intelligence can be used to analyze clinical symptoms, identify patterns of depression or anxiety from texts or sounds, or even predict suicide risk based on behavioral data.(Spring, 2021).

- **The nature of artificial intelligence algorithms:** algorithms are the basis of the work of artificial intelligence, they are used to process data and make decisions based on certain patterns, algorithms are divided into main types, the most prominent of which are:

*** Rule-based algorithms:**

They are used in traditional artificial intelligence systems based on "if...The" to guide decisions, but they are limited in terms of flexibility and adaptation.

*** Data - driven algorithms:**

They are used in modern models that learn from data without direct programming, and include classification, clustering, and regression algorithms.

*** Genetic algorithms :**

Inspired by the principles of biological evolution, they are used to solve complex problems by simulating natural selection (Mitchell, 1998).

***Machine learning:**

Machine learning is one of the most widely used branches of artificial intelligence, and refers to the ability of systems to learn from data and gradually improve their performance without being explicitly programmed (Goodfellow & al, 2016). This technique is increasingly used in psychological assessment to analyze patients ' answers, and to identify patterns associated with disorders such as depression, anxiety, or PTSD.

• Its basic types:

O Supervised learning: it is based on parameter data to predict new values or ratings (e.g. to determine the level of anxiety).

- Unsupervised learning: aims to reveal hidden patterns without pre-classified data.

- Reinforcement learning: where the system learns through trial and error, and gets "rewards" to enhance performance.

***The nature of natural language processing:**

Natural language processing refers to the ability of intelligent systems to accurately understand and analyze human language, both through written texts and recorded sounds. The technique is widely used in digital psychological applications, where it can analyze patient messages, therapeutic dialogues, or even recognize suicide indicators from social media platforms (Miner & al, 2020).

- **Tools include:**

* Sentiment analysis
* Extraction of linguistic features
* Language generation
* Machine translation and text interaction

The integration of these tools in psychological assessment is a qualitative development, but it requires great accuracy in linguistic and cultural control, especially in Arab environments, where linguistic and emotional expressions differ in different cultural contexts.

(Al-Shennawi, 2020)

5.3. Clinical accuracy:

Clinical accuracy is the ability to provide accurate and correct diagnoses or assessments based on available clinical information. In the field of clinical psychology, it refers to the ability of doctors or psychologists to identify mental disorders and understand the psychological conditions of patients based on clinical examinations, psychological tests, and clinical interviews. Clinical accuracy is a vital element to ensure proper treatment and effective patient outcomes.

Studies show that clinical accuracy is influenced by a number of factors, such as human biases or the cognitive limits of doctors, which can influence clinical decision-making. On the other hand, modern technologies such as artificial intelligence can help improve accuracy by providing accurate quantitative analyses on a large scale, but they still need human supervision to ensure accuracy and contextualization (Groves, 2019).

5.4. Ethical considerations:

Ethical considerations in psychological assessment are related to the ethical principles that psychologists must adhere to when using tools and methods in assessing patients. In the context of the use of artificial intelligence in psychological assessment, a set of ethical issues have emerged that require careful assessment to ensure the protection of patients ' rights, among them:

- Privacy and data protection: respect for the privacy of patients and the protection of their personal data is one of the most important ethical principles. Artificial intelligence systems should ensure the confidentiality of psychological information and protect it from unauthorized access (Mittelstadt & al, 2016).

-Transparency: it is essential that smart systems are transparent in the way they work, so that patients and doctors know how data is collected and how decisions are made based on it (Ananny & Crawford, 2018).

-Algorithmic bias: all factors that may contribute to biases within algorithmic models should be taken into account, such as discrimination based on race, gender, or culture. Objective and impartial analysis of data is essential to ensure fairness in evaluation (Obermeyer & al, 2019).

-The nature of legal liability: when errors occur in the assessment due to intelligent systems, it is important to establish legal liability. And who bears responsibility in case of an error in diagnosis Are doctors responsible or are the companies developing these systems.

(Torous & al, 2018)

6-the development of the uses of artificial intelligence in the psychological field:

The use of artificial intelligence in psychology has witnessed a gradual development since recent decades, especially with the great advances in computing technologies and data analysis.artificial intelligence began as a theoretical research field used in building cognitive models that simulate human thinking, and then evolved into an effective tool used today in clinical and research circles, specifically in the fields of diagnosis, evaluation, prediction, and treatment. The evolution has been through the following stages:

-Preliminary stage: cognitive modeling :

Initially, the attention of computer psychologists was focused on building cognitive models that simulate mental processes such as perception, attention and decision-making, so that these models were used to explain human behavior under certain conditions, which helped to develop a theoretical understanding of the mechanisms of thinking (Newell & Simon, 1972). This stage did not include a practical intervention in treatment or evaluation, but it paved the way towards the introduction of big data analysis tools into psychology.

-The process of digital transformation in psychological diagnosis :

With the development of machine learning algorithms, researchers have begun to use artificial intelligence to analyze patient data, such as answers to psychological tests, the content of therapy sessions, or even their social media posts. Models capable of predicting disorders such as depression or PTSD have emerged through the analysis of language, tone of voice or digital behaviors (Coppersmith & al, 2015).

-How artificial intelligence enters psychological clinics :

During the last decade, artificial intelligence tools have begun to be actively integrated into clinical psychological practice, through:

* Assessment programs that provide intelligent digital questionnaires adapted to the patient's answers.
* Voice and facial expression analysis systems to monitor depressive or anxious signs.
* Natural Language Processing (NLP) - based chatbots that provide initial psychological support, such as "Woebot" or "Wysa", designed to provide supportive responses based on cognitive behavioral principles . (Fitzpatrick & al, 2017)

- A step towards predictive psychiatry:

Artificial intelligence is today the cornerstone of the field of "predictive Psychiatry", which aims to predict the risk of developing mental disorders before the onset of their clinical symptoms, by analyzing long-term digital data such as sleep patterns, digital use, or physiological indicators. Studies such as the Insel Study (2018) have shown that artificial intelligence can contribute to early intervention and reduce relapse rates.

The integration of artificial intelligence in digital psychotherapy programs:

Intelligent therapeutic applications are now being developed that rely on the analysis of behavioral data in real time to adjust their interventions according to the user's condition, which is known as intelligent adaptive therapy (Just-in-time Adaptive Interventions). These models represent a paradigm shift in the delivery of psychotherapy in a flexible and continuous way, without the need to always have a human therapist.

7-tools and applications based on artificial intelligence in assessment and psychological support:

The development of artificial intelligence has led to the emergence of a range of intelligent digital tools designed to provide psychological services ranging from Assessment, Monitoring, and therapeutic intervention. These applications combine natural language processing (NLP), machine learning (ML), and behavioral data analysis techniques to provide customized and

continuous support, often without the need for direct human intervention. The following are the most prominent of these tools:

***Woebot:** is an intelligent chatbot (chatbot) powered by artificial intelligence, developed by researchers

At Stanford University to provide psychological support based on cognitive behavioral therapy (CBT).

Woebot works through daily text conversations with the user, where he assesses the mood, helps to restructure negative thoughts, offers evidence-based therapeutic content.

- **Characteristics:** it is based on NLP technology to understand and react to emotions, it does not provide a medical diagnosis, but it helps in daily self-assessment.

- **Efficacy:** a study showed (Fitzpatrick & al. 2017) that using Woebot for two weeks helped to reduce depression and anxiety levels in young people compared to a control group.

* **Tess:** Tess is an AI-based psychological support platform widely used in educational and medical institutions.

Tess interacts with users via text messages, uses algorithms to analyze emotions, based on which it provides supportive content adapted to the emotional state of the individual.

- **Characteristics:** it works in 14 languages and is used in more than 20 countries, and can be customized according to the needs of institutions (universities, hospitals, insurance companies).

-Functions: assess mood and behavioral changes, provide coping strategies, direct the user to HR if necessary. (Gaffney & al, 2019)

***Mindstrong:** Mindstrong is different from interactive robots, as it is considered a smartphone application focused on passive behavioral monitoring, that is, collecting and analyzing digital data resulting from the use of the phone, such as: typing patterns, reaction speed, changes in interaction with the device.

- **Objective:** to predict mood changes or relapses in patients with chronic mental disorders such as bipolar depression and schizophrenia.

- **Effectiveness:** preliminary studies have found that the application can monitor early changes that precede relapses, which helps specialists to proactively intervene. (Torous & Roberts, 2017)

***Wysa:** a smart app that uses artificial intelligence to support mental health through a combination between an NLP-based chatbot and therapeutic exercises. It is based on CBT techniques, ACT (acceptance and commitment therapy), and meditation exercises.

- **Characteristics:** it has a nice and attractive interface for users, offers diverse content (conversations, audios, exercises).

- Usage: it is widely used among adolescents and adults seeking non-binding or expensive self-support.

- **The relevance of these applications in psychological assessment:**

It enables real-time monitoring of the psychological state in a more accurate and continuous way than traditional assessment. It provides a safe and non-judgmental environment for expression, which encourages some users to express their feelings more freely.

It paves the way for a technological integration between the human therapist and the digital tool, enhancing the effectiveness of interventions.

8-Previous studies on the accuracy of smart models in psychological assessment:

In recent years, there has been a marked increase in the number of studies that have tested the accuracy and effectiveness of artificial intelligence tools in clinical psychological assessment, especially those based on the analysis of non-verbal and linguistic data such as voice tone, written texts, and facial expressions, so that these tools provide the possibility of continuous and objective assessment, which opens new horizons in early diagnosis and preventive intervention.

***Features of voice analysis (voice Analysis) :**

Several studies have found that AI systems are able to detect signs of depression or anxiety by analyzing voice tone qualities, such as monotony, decreased intensity, and slow speech.

Conducted by (Low & al. 2020) an experiment using machine learning algorithms to analyze voice recordings of people with mood disorders, and the results showed that the algorithms were able to predict depression with an accuracy of 80% compared to clinical diagnosis.

(Cummins & al, 2015) also pointed out that acoustic characteristics such as pitch variation are vital indicators that artificial intelligence can reliably monitor.

(Al-Sarraj , 2021) suggests that incorporating voice analysis into psychological assessment may be an effective tool especially in contexts where direct clinical services are difficult to access.

***The analysis of written texts (Text Mining & Sentiment Analysis)**

Text analysis tools are becoming more accurate in extracting psychological indicators from personal writings or conversations, be it on social media platforms or from therapy sessions. So that (Coppersmith & al. 2015) an analytical study on Twitter tweets of users with depressive disorders, and used classification algorithms to detect language patterns associated with sadness, withdrawal, and despair, with an accuracy of more than 85%. He also used (Tadesse & al. 2019) natural language analysis (NLP)

To classify cases of depression and anxiety based on the content of personal blogs and achieved a classification accuracy of 91%.

As for (Al-Mazrouei , 2022), he pointed out that artificial intelligence tools are beginning to be used in analyzing digital forums in Arabic to detect underlying mental disorders, with encouraging initial results that require linguistic and cultural improvements.

***Features analysis of facial expressions (Facial Expression Recognition)**

This technology is based on tracking the exact movements of the face using high-resolution cameras and analyzing them with artificial intelligence algorithms to deduce emotional states.

So that Girard et al. 2014) developed an automated system for analyzing the facial expressions of depressed patients during clinical interviews, and found that a decrease in emotional facial expressions was an accurate indicator of the severity of depression.

As shown by (Haines & al. 2019) that facial expression analysis algorithms were able to distinguish anxiety, anger, and sadness states with an accuracy of 87%, compared to manual assessment scales by therapists.

As for (Al-Rubaie, 2021), he pointed out that the analysis of facial expressions may also be used to assess the effectiveness of treatment, by comparing emotional changes before and after Sessions.

Therefore, most studies indicate that smart models achieve accuracy rates ranging from 80-90% in detecting mental disorders based on voice, text or face. However, these tools remain complementary to, not a substitute for, human clinical assessment, especially in complex cases that require a deep contextual and cultural understanding.

9-Critical analysis: clinical accuracy versus ethical considerations :

9.1. Artificial intelligence gains in psychological assessment:

Artificial intelligence has represented a quantum leap in the development of psychological assessment tools, not only at the level of analysis and processing techniques, but also in terms of its contribution to facilitating access to psychological service and alleviating the shortcomings associated with traditional interventions. The most notable qualitative gains made by this progress are the following.

***The main advantages are speed and operational efficiency:**

Artificial intelligence allows psychological assessments to be performed at a fast and efficient pace, this feature reduces the time required for a specialist to analyze psychometric tools, and allows instant, accurate, and comprehensive reports, which enhances the effectiveness of clinical decision-making in a timely manner. (Torous & al, 2018) this speed is also extremely important in high-

pressure environments such as psychiatric emergency departments or acute psychiatric crises.

*** The purpose of reducing personal and cognitive biases:**

Unlike humans, intelligent algorithms do not rely on subjective impressions or socio-cultural backgrounds that may affect clinical judgment.artificial intelligence systems are based on purely quantitative and empirical criteria, which reduces the likelihood of errors caused by conscious or unconscious bias on the part of the specialist.

(Chancellor & De Choudhury, 2020) however, the effectiveness of this gain remains conditioned by the quality of the data used to train the models, as warned (Binns, 2018), since the biases inherent in the data can transfer to the results of the models if they are not systematically rigorously tuned.

*** The task of expanding access to psychological services:**

In many remote areas or communities with a shortage of specialists or lack of awareness of mental health, artificial intelligence is an effective way to bridge the gap in service delivery, as smart assessment applications such as Wysa and Tess allow access to psychological help tools via mobile phone, without the need for complex infrastructure or high material cost. (Gaffney & al, 2019) a study by (Bin Taleb , 2022) also found that the use of artificial intelligence tools among university students in rural areas contributed to improving the ability to identify psychological problems early, and promote seeking support without fear of stigma or logistical barriers.9

9.2. Limits of clinical accuracy in the use of artificial intelligence in psychological assessment:

Despite the remarkable gains that artificial intelligence offers in the field of psychological assessment, excessive reliance on it raises serious questions about the limits of its clinical accuracy, especially in aspects related to emotional and contextual understanding and personal assessment of psychological experience. Smart tools, no matter how complex their algorithms are, are still unable to simulate some of the fundamental human dimensions on which Clinical Psychological Assessment is based.

***Lack of deep emotional and contextual understanding:**

One of the most important challenges that limits the accuracy of artificial intelligence in psychological assessment is its lack of a complete contextual and deep emotional understanding of the individual's experience, as algorithms rely mainly on statistical patterns and superficial responses, while real clinical understanding requires the ability to read the social, cultural, and historical backgrounds of the psychological state, as well as the "clinical intuition" that develops with human experience (Ekhtiari & Gutkin, 2021).

So a study by (Vaidyam & al indicates.2019) that automated assessment tools often deal with symptoms piecemeal without taking into account the surrounding circumstances or complex relationships between psychological variables and the social context, for example, the algorithm may record a decrease in digital activity as an indicator of depression, while it may be caused by a technical malfunction or a routine change unrelated to the psychological state.

(Trifan & al, 2021) have warned. that relying on algorithms that ignore the relational dimension between the specialist and the patient may lead to a "dry automated diagnosis", lacking empathy and clinical foresight.

As (Zhou & al.2020) point out that emotional understanding depends not only on words, but also on tone of voice, body language, and communicative context, elements that are often reduced or overlooked in AI models.

He also stressed (Al-Sarraj, 2021) that digital tools cannot, so far, capture accurate non-verbal signals or assess "therapeutic silence" that may carry deep psychological connotations in clinical sessions.

***Over-reliance on quantitative data and ignoring subjective meaning:**

Intelligent models are based mainly on quantitative data and apparent behavioral data, but they cannot access the personal meaning that an individual gives to his psychological experiences, which is a key component in understanding psychological disorders and difficulties, so this constitutes an obvious shortcoming when dealing with situations that need a deep interpretation of experiences such as existential sadness, internal conflict, or repressed desires, which are difficult to measure digitally.

According to (Larsen & al. 2019) that this type of assessment may produce accurate statistical images, but they are distorted in their human dimension, as they do not take into account factors such as Faith, personal values, existential experiences, and other elements that constitute the essence of psychological suffering. As (Ma & al. 2022) point out an overemphasis on measurable variables may eliminate patterns of suffering that are not translated digitally, but carry a decisive therapeutic effect when detected.

9.3. Ethical challenges associated with the use of artificial intelligence in psychological assessment:

Despite the technical advantages that artificial intelligence provides in psychological evaluation, its application raises a number of fundamental ethical problems, especially in light of the sensitive nature of psychological information and the profound impact that the results of the evaluation may have on the lives of individuals. The most prominent of these challenges are four main axes: privacy, transparency, algorithmic bias, and legal responsibility.

***Privacy and data protection:**

Maintaining the confidentiality of psychological information is the cornerstone of the relationship between the patient and the specialist, but the use of systems based on artificial intelligence, especially through mobile applications or cloud platforms, increases the risk of breaching this privacy or leaking data.

Only (Floridi & al. 2018), one of the fundamental challenges is the weak legal regulations governing how to store and analyze machine-collected psychological data, which makes the patient vulnerable to the risk of tracking or exploitation by third parties.

He was alerted (Mittelstadt & al.2016) pointed out that some applications do not allow the user to effectively control the way his data is used, which contradicts the principle of informed consent.

(Al-Shennawi ,2020) also pointed out that privacy requires dedicated legal and cultural frameworks, taking into account social and religious particularities in dealing with sensitive psychological information.

***Transparency and patient understanding of the nature of the assessment:**

In a traditional assessment, he explains to the patient the diagnostic tools, the nature and purpose of the questions, what enhances his sense of control and participation. In Intelligent Systems, many patients do not understand exactly how the analysis is done, or what is being measured, which creates a gap in transparency.

According to (Ananny & Crawford, 2018), "algorithmic ambiguity" is one of the most prominent ethical problems, as evaluation results are difficult to interpret or justify to the patient, especially when the models rely on complex neural networks.

Binns (2018) confirms that the lack of understanding not only harms the patient's confidence, but also weakens his ability to object or request a review.

***The algorithmic bias problem:**

Despite the claim that artificial intelligence reduces human bias, the models used may reproduce discrimination based on race, gender, or cultural background, if trained on unbalanced data.

A study (Obermeyer & al. 2019) in the United States that an AI-powered health assessment system discriminated against black patients due to reliance on non-neutral indicators such as past medical costs, which influenced treatment recommendations.

Al-Rubaie (2021) also warned that text analysis models in Arabic show linguistic biases towards speech patterns associated with women or minorities, which can lead to erroneous classifications in emotional assessment.

*** Legal liability in case of error:**

One of the most prominent ethical dilemmas facing intelligent psychological assessment is: who bears responsibility in the event of an error in diagnosis or recommendation

Is he a software developer Or the institution providing the application Or the specialist who used the model

Accordingly, he points out(Zerilli & al.2019) pointed out that the absence of legal clarity about legal liability makes it difficult to determine which party is responsible for psychological or clinical harm that may result from the adoption of recommendations or results issued by an algorithm.

In Arab law, this issue is a recent one. Al-Zahrani (2021) has called for the need to establish legislation that distinguishes between the auxiliary and the reparative use of artificial intelligence in psychological assessment.

9-4-towards an integrative ethical-technical model (Integrative Ethical-Tech Framework)

The use of artificial intelligence in psychological evaluation requires an integrated framework that combines the ethical and technical dimension in a way that ensures the provision of accurate and safe psychological services, without compromising human rights or harming the patient.

To achieve this goal, it is necessary that AI tools are developed according to clear professional principles that integrate cutting-edge technology with human values, commensurate with the psychotherapeutic environment.

***A preliminary proposal for aspects that should be available in artificial intelligence systems used psychologically:**

When developing artificial intelligence systems for psychological assessment purposes, several basic aspects should be taken into account that ensure the safety and effectiveness of such systems:

- Transparency of processing and interpretation: the systems should allow users (whether patients or doctors) to understand the mechanism of the algorithms and how to reach the decisions issued by them, as the ambiguity of the evaluation process may lead to anxiety and loss of confidence in the results of the system. (Ananny & Crawford, 2018)

- Privacy and security: high standards of personal and psychological data protection should be applied, including encryption and data preservation in secure environments to ensure the confidentiality of patient information and its non-exploitation.

(Mittelstadt & al, 2016)

- Bias and fairness: AI tools must undergo periodic audits to ensure that the data used to train models represent cultural and ethnic diversity, avoiding the reproduction of human biases. (Obermeyer & al, 2019)

- Continuous monitoring and updates: systems should be updatable based on changes in scientific knowledge or professional practices in psychology, and performance should be constantly monitored to ensure the accuracy of assessments and avoid errors. (Torous & al, 2018)

***The need for human clinical supervision of intelligent systems:**

Despite the significant development of artificial intelligence tools, these systems cannot replace the human role in the therapeutic and psychological process. Human clinical supervision remains essential to ensure that appropriate final decisions are made that take into account psychological and social aspects that may not be captured by algorithms.

So that he points (Zerilli & al. 2019) pointed out that artificial intelligence can be an auxiliary tool, but the psychological practitioner must be characterized by the ability to differentiate between digital analysis and human emotional reading of the patient.

Al-Sarraj (2020) also emphasizes that there is a need to develop a digital human supervision program that can work in tandem with intelligent systems, where the specialist is ultimately responsible for interpreting the results and making therapeutic decisions based on a full understanding of the case.

*** Integration of human rights values and professional psychological principles in the development of digital tools:**

It is important that AI tools are developed based on human rights values and professional psychological principles, such as respect, human dignity, and equality. These tools should seek to activate the protection of the patient's rights by ensuring equality in treatment and providing fair access to psychological services through modern technologies.

Therefore, smart models should incorporate ethical human rights standards, such as the right to privacy, the right to information, and the right to make decisions about personal data. It must also comply with ethical standards in psychology, such as harmlessness, full respect for the patient, providing a supportive and safe environment. (APA, 2017)

In this context, Al-Zahrani (2021) points out the importance of these systems being subject to a strict legal framework that defines the limits of their use while ensuring adherence to the ethical values of the profession, as smart tools can improve access to treatment, but provided that they remain under the supervision of professionals.

Conclusion:

With the accelerated development of artificial intelligence and its increasing use in various medical and psychological fields, the importance of integrating advanced technologies into clinical practices to increase the accuracy of psychological assessments is emerging. This study has shown that artificial

intelligence offers promising possibilities to improve the speed and efficiency of psychological assessment, reduce human biases, and also contribute to the provision of psychological treatment to individuals in disadvantaged areas. However, these possibilities do not come without challenges, as many ethical aspects need to be taken into account, such as protecting privacy, ensuring transparency, addressing issues of algorithmic bias, and determining legal liability in case of error.

Through this article, it was shown that artificial intelligence cannot replace psychologists, it must work side by side with human practitioners, highlighting the importance of human clinical supervision, as well as the need to integrate human values and ethical principles in the design and application of such systems.

Recommendations:

1. Further research on improving the accuracy of intelligent models in psychological assessment: studies should continue to explore the effectiveness of AI tools in predicting psychological diagnoses and the accuracy of predicting treatment, focusing on integrating emotional and contextual examinations that may not currently capture.
2. Enhance transparency and clarity in the use of smart systems: researchers and developers should work to improve the mechanisms of explanation and interpretation related to how smart models reach their decisions, so that patients and doctors can clearly understand the processing performed by algorithms.
3. Development of comprehensive legal and ethical frameworks: it is necessary to develop clear legislation and ethical rules regulating the use of artificial intelligence in psychological assessment, including the protection of personal data, the establishment of legal liability in case of diagnostic errors caused by the system.
4. Ensure that algorithms are free from cultural or ethnic bias: companies and organizations that develop smart models should ensure that the training data they use are free from bias, by conducting periodic checks of these models and making sure that they are fair and inclusive of all societal groups.
5. Integrate continuous human supervision into intelligent systems: the psychologist should remain the primary responsible for making final decisions in assessments and treatment, while providing human supervision of smart gadgets to ensure their health and safety.
6. Integrating human values into the design of digital psychological tools: artificial intelligence tools used in psychological assessment should be designed to respect human dignity, and take into account the professional values of psychology such as integrity, respect, justice, and confidentiality.

References:

-*Al-Mazrouei, N. (2022). Digital language analysis in the early detection of mental disorders in young people. Arab Journal of Psychological Sciences, 18(2), 113–132.*
-*Al-Rabeei, F. (2021). Artificial intelligence and mental health. Beirut: Center for Social Intelligence Studies.*
-*Al-Rabeei, F. (2021). Artificial intelligence in psychology: An introduction to clinical applications. Riyadh: Academic Publishing House.*
-*Al-Rabeei, F. (2021). Bias in psychological algorithms: Monitoring and analysis. Beirut: Center for Social Intelligence Studies.*
-*Al-Sarjani, H. (2014). Introduction to clinical psychology. Cairo: House of University Knowledge.*
-*Al-Sarraj, P. (2017). Introduction to psychological assessment methods. Amman: Academic Book House.*
-*Al-Sarraj, P. (2020). Ethical guidelines in the use of artificial intelligence in psychiatry. Journal of Medical Ethics, 5(2), 101–120.*
-*Al-Sarraj, P. (2021). Artificial intelligence tools in mental health assessment: Towards a digital understanding of disorders. Riyadh: Dar Al-Qalam.*
-*Al-Sarraj, P. (2021). Determinants of psychological assessment in the age of algorithms. Riyadh: University Publishing House.*
-*Al-Zahrani, I. (2021). Artificial intelligence legislation: A legal and rights perspective. Riyadh: University Publishing House.*
-*Al-Zahrani, I. (2021). Psychological legislation in the face of artificial intelligence: An analytical reading. Arab Journal of Psychiatry and Technology, 5(1), 45–62.*
-*Ananny, M., & Crawford, K. (2018). Seeing without knowing: Limitations of the transparency ideal and its application to algorithmic accountability. New Media & Society, 20(3), 973–989. https://doi.org/10.1177/1461444816676645*
-*APA (2017). Ethical Principles of Psychologists and Code of Conduct. American Psychological Association.*
-*Ben Taleb, H. (2022). The effectiveness of artificial intelligence applications in supporting mental health among rural university students. Arab Journal of Psychological Technology, 6(1), 112–130.*
-*Binns, R. (2018). Fairness in machine learning: Lessons from political philosophy. In Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency. https://doi.org/10.1145/3287560.3287598*
-*Butcher, J. N., et al. (2001). Minnesota Multiphasic Personality Inventory (MMPI-2) Manual. University of Minnesota Press.*
-*Cabitza, F., Rasoini, R., & Gensini, G. F. (2017). Unintended consequences of machine learning in medicine. JAMA, 318(6), 517–518. https://doi.org/10.1001/jama.2017.7797*
-*Chancellor, S., & De Choudhury, M. (2020). Methods in predictive techniques for mental health status on social media. ACM Transactions on Computer-Human Interaction, 27(5), 1–53. https://doi.org/10.1145/3369941*
-*Chaudhury, S., Putchala, S. R., & Sinha, R. (2021). Artificial Intelligence in Psychiatry: A Clinical Perspective. Indian Journal of Psychiatry, 63(2), 113–118. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_596_20*
-*Coppersmith, G., Dredze, M., & Harman, C. (2015). Quantifying mental health signals in Twitter. In ACL Workshop on Computational Linguistics and Clinical Psychology. https://doi.org/10.3115/v1/W15-1204*

-*Cummins, N., et al. (2015). A review of depression and suicide risk assessment using speech analysis. Speech Communication, 71, 10–49. https://doi.org/10.1016/j.specom.2015.03.004*
-*Elhai, J. D., & Ford, J. D. (2011). Advances in clinical decision-making in mental health care. Psychological Assessment, 23(3), 603–610. https://doi.org/10.1037/a0023451*
-*El-Shenawy, A. (2020). An introduction to the analysis of natural language in psychological contexts. Cairo: Arab Center for Research and Training.*
-*El-Shenawy, A. (2020). Artificial intelligence and its applications in digital psychotherapy. Cairo: The House of Arab Thought.*
Esteva, A., et al. (2019). A guide to deep learning in healthcare. Nature Medicine, 25(1), 24–29. https://doi.org/10.1038/s41591-018-0316-z
-*Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy using a conversational agent. JMIR Mental Health, 4(2), e19. https://doi.org/10.2196/mental.7785*
-*Floridi, L., et al. (2018). AI4People—An ethical framework for a good AI society. Minds and Machines, 28(4), 689–707. https://doi.org/10.1007/s11023-018-9482-5*
-*Gaffney, H., Mansell, W., & Tai, S. (2019). Conversational agents in mental health: Systematic review. JMIR Mental Health, 6(10), e14166. https://doi.org/10.2196/14166*
-*Girard, J. M., et al. (2014). Social risk and depression. In Proceedings of the ACM Conference. https://doi.org/10.1145/2632048.2636074*
-*Goodfellow, I., Bengio, Y., & Courville, A. (2016). Deep Learning. MIT Press.*
-*Goodman, B., & Flaxman, S. (2017). EU regulations on algorithmic decision-making. AI Magazine, 38(3), 50–57. https://doi.org/10.1609/aimag.v38i3.2741*
-*Groves, M. (2019). Clinical decision making in mental health. Journal of Clinical Psychology, 75(2), 145–159. https://doi.org/10.1002/jclp.22729*
-*Haines, N., et al. (2019). Automated facial coding using machine learning. PLOS ONE, 14(2), e0211735. https://doi.org/10.1371/journal.pone.0211735*
-*Hunsley, J., & Mash, E. J. (2017). A guide to assessment scales in clinical psychology. Oxford University Press.*
-*Insel, T. (2018). The future of mental health care. Harvard University Conference Paper.*
-*Kanfer, F. H., & Goldstein, A. P. (2013). Behavioral approaches to assessment. Routledge.*
-*Larsen, M. E., et al. (2019). Smartphone tools for suicide prevention. PLOS ONE, 11(4), e0152285. https://doi.org/10.1371/journal.pone.0152285*
-*Low, D. M., et al. (2020). Automated assessment using speech. Laryngoscope Investigative Otolaryngology, 5(1), 96–116. https://doi.org/10.1002/lio2.354*
-*Ma, T., et al. (2022). Limits of algorithmic mental health care. AI & Society, 37(3), 1127–1140. https://doi.org/10.1007/s00146-021-01266-3*
-*Miller, L. (2016). Psychological assessment. Springer.*
-*Miner, A. S., et al. (2020). Digital psychiatry and NLP. Current Opinion in Behavioral Sciences, 36, 89–94. https://doi.org/10.1016/j.cobeha.2020.08.001*
-*Mitchell, M. (1998). An introduction to genetic algorithms. MIT Press.*
-*Mittelstadt, B. D., et al. (2016). The ethics of algorithms. Big Data & Society, 3(2), 1–21. https://doi.org/10.1177/2053951716679679*
-*Moses, A. (2018). Psychological assessment in clinical practice. Cairo: University Publishing House.*
Muench, F., et al. (2016). Biological bases of psychological disorders. Academic Press.
-*O'Neil, C. (2016). Weapons of Math Destruction. Crown Publishing.*

-*Obermeyer, Z., et al. (2019). Racial bias in health algorithms. Science, 366(6464), 447–453. https://doi.org/10.1126/science.aax2342*
-*Russell, S., & Norvig, P. (2021). Artificial intelligence: A modern approach (4th ed.). Pearson.*
-*Sullivan, H. S., & Reitz, M. (2020). The Rorschach Test. American Journal of Psychotherapy.*
-*Tadesse, M. M., et al. (2019). Depression detection on Reddit. IEEE Access, 7, 44883–44893. https://doi.org/10.1109/ACCESS.2019.2909180*
-*Topol, E. (2019). Deep Medicine. Basic Books.*
-*Torous, J., & Roberts, L. W. (2017). Ethical use of mobile health tech. Journal of Nervous and Mental Disease, 205(1), 4–8. https://doi.org/10.1097/NMD.0000000000000596*
-*Torous, J., et al. (2018). Mental health apps usage. JMIR Mental Health, 5(1), e11715. https://doi.org/10.2196/11715*
-*Trifan, A., et al. (2021). Passive sensing via smartphones. JMIR mHealth and uHealth, 9(2), e17528. https://doi.org/10.2196/17528*
-*Young, S. H., et al. (2015). Psychological testing and evaluation. Wiley.*
-*Zerilli, J., et al. (2019). Algorithmic decision-making. Minds and Machines, 29(4), 555–578. https://doi.org/10.1007/s11023-019-09508-w*
-*Zhou, Y., et al. (2020). Detecting mental health disorders on social media. ACM Transactions on the Web, 14(3), 1–30. https://doi.org/10.1145/3394171*