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Original Research Article

Artificial Intelligence in Psychotherapy: Risks, Trustworthiness, and Safety Concerns from the Perspective of Clinical Professionals

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Abstract

The rapid integration of Artificial Intelligence (AI) into psychotherapy has transformed psychological evaluation and intervention, while simultaneously raising critical concerns regarding clinical reliability, ethical integrity, and patient safety. This qualitative case study examined the perspectives of an experienced clinical psychologist on the risks, trustworthiness, and safety considerations associated with AI-based psychological evaluations. Data were collected through a semi-structured, in-depth interview and were analyzed thematically following Braun and Clarke's (2006) framework. Three overarching themes emerged: (1) clinical and social risks, including algorithmic mislabeling, decontextualized interpretation, and erosion of the therapeutic alliance; (2) technical and clinical reliability, reflecting the discrepancy between AI accuracy in objective testing and its limitations in capturing emotional and cultural nuance; and (3) ethical and justice-oriented concerns, encompassing algorithmic bias, data confidentiality, client dependency, and the need for professional training and regulatory oversight. The resulting conceptual model, described as the "Risk–Trust–Ethics Triad," demonstrates a dynamic, interdependent relationship among these dimensions, suggesting that any imbalance—technical, moral, or human—undermines the stability of the system. Findings highlight the necessity of human supervision, ethical governance, and culturally sensitive design as prerequisites for the deployment of trustworthy AI in psychotherapy. The study concludes that the sustainable integration of AI requires a human-centered framework in which technology functions not as a replacement for clinical judgment, but as an ethical partner that enhances therapeutic insight and judgment.

Keywords: Artificial Intelligence; Psychotherapy; Clinical Risk; Trustworthiness; Ethics; Human–Machine Interaction; Psychological Evaluation.

1. Introduction

Artificial intelligence is defined as non-human intelligence that can imitate or replicate human mental skills such as pattern recognition, natural language processing, adaptive learning, and reasoning. This technology has experienced significant growth since World War II and is now considered one of the most promising fields, with the potential to revolutionize various aspects of human life [1]. The technological revolution based on artificial intelligence, big data, and the Internet of Things has the potential to transform individual and social life [2]. At the organizational level, this technology has redefined decision-making principles, resulting in increased agility and flexibility in management tasks [3]. In the field of mental health, artificial intelligence and machine learning have fundamentally transformed traditional methods by creating new approaches, both in prevention and treatment [4]. One of the most important applications is the accurate identification of human emotions through the integration of audio, text, and image data, which is more precise than previous methods and is of great importance for the interaction of psychologists with patients [5]. This capability enables the personalization of interventions, enhancing efficiency in the diagnosis and treatment of mental disorders [6].

Additionally, artificial intelligence can play a crucial role in enhancing our understanding of emotional phenomena and human interactions, which are

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particularly important in psychotherapy [7]. The first steps in this field focused on processing biometric signals such as heart rate and electrodermal activity, which allowed the assessment of physiological responses to emotional stimuli. With the advancement of machine vision and image processing, pattern recognition systems were able to identify facial expressions and tone of voice as indicators of emotions. The advent of machine learning and neural networks opened a new horizon, enabling the identification of more complex emotional patterns in text and speech. Speech-to-text (STT) and natural language processing (NLP) models also played an important role in text and speech analysis. Finally, by utilizing big data and deep neural networks, it became possible to extract more accurate and coherent insights from emotions [5, 8]. Recent advances in artificial intelligence have also included predictive and behavioral analysis technologies that, in addition to identifying current emotions, can predict future reactions. Other innovations include the use of virtual reality and computer games to place people in controlled environments and analyze emotional responses [9]. Natural language processing for analyzing written and spoken texts, including data from social networks and call centers, has also contributed to a better understanding of emotions and emotional decision-making [10]. A review of studies shows that artificial intelligence in understanding and interpreting emotions provides a wide range of applications [11]. In psychotherapy, AI can help identify patients' emotional and behavioral patterns in real time [12]. It has also been used in medicine for the early diagnosis of neurological diseases such as Parkinson's and depression [13].

In the pharmaceutical industry, artificial intelligence models have shown the ability to predict the effects of drugs on patients' emotional states [14]. Furthermore, research has demonstrated that AI can improve the treatment experience and user satisfaction in mental health apps [15]. Despite these achievements, the use of AI in psychotherapy is associated with ethical, clinical, and legal challenges. Research findings [16] indicate that AI-based counseling systems lack the necessary competence to replace the clinical judgment of experts and are incapable of understanding emotional, cultural, and social nuances. The unempathetic responses of these systems can even increase the risk of suicide in some cases.

In summary, in the digital age and with the increasing acceleration of technological advances, artificial intelligence has become a key tool in risk management and safety analysis in the healthcare field [17, 18]. This technology can be efficient in forecasting and data management [19] and provide innovative tools to increase the effectiveness of health systems. However, data quality, human-machine interaction, and ethical considerations remain important challenges in this field [18-20].

Therefore, it is essential to examine the perspectives of clinical experts on the risks, reliability, and safety concerns in the use of AI in psychological evaluation. The present study, with a qualitative approach and through in-depth interviews with an experienced clinical psychologist, attempts to answer the question: What are the risks, reliability, and safety considerations in psychological evaluation with the help of AI from a clinician's perspective?

2. Method

This research employed a qualitative approach and an exploratory case study design to examine a clinical psychologist's perspectives on the risks, reliability, and safety concerns associated with the use of artificial intelligence in psychological evaluation. The case study involves a married female psychologist with a PhD in psychology and over 20 years of professional experience, currently serving as a university faculty member and director of a specialized psychology clinic. In addition to therapeutic interventions, this clinic also regularly conducts psychological tests. Her areas of expertise are very diverse and include child counseling, couples therapy, play therapy, ADHD, adolescent and academic counseling, parent–child counseling, family counseling, treatment of mood and anxiety disorders, obsessive–compulsive disorder, phobias, anger management, addiction treatment, autism spectrum disorders, mood swings, premarital and divorce counseling, infidelity and marital conflict, life skills training, psychological and intelligence tests, sex therapy, treatment of sexual dysfunction, counseling in cases of suicidal thoughts, and other specialized psychotherapy services.

2.1 Data collection tool

The primary data collection tool was a semi-structured interview, developed based on a literature review and consultation with experts. The interview themes focused on three main areas: (1) perceived risks in the use of AI in psychology, (2) views on the trustworthiness of AI-based tools, and (3) safety and ethical considerations in the clinical application of this technology. The interview questions were designed around four general themes:

- Professional background and clinical experiences in using psychological tests,
- Psychologists' perceptions and experiences of using AI-based tools in psychological evaluation,
- Risks, reliability, and safety and ethical concerns associated with this technology,
- Prospects and suggestions for improving its application in clinical psychology.

The interview consisted of 16 main questions and several probing questions, which allowed the researcher to ask additional questions as needed to delve deeper into the topic. Examples of main questions were:

- “What are the most important risks or negative consequences of using AI in psychological evaluation?”

- "To what extent do AI interpretations align with the psychologist's human judgment?" "What safety or ethical concerns are there in using this technology?"
- "If an ideal AI system were to be designed for clinical use, what characteristics would it have?"

All interviews were conducted with the participant's informed consent, in a private setting, and without the presence of other people, and were fully recorded and then transcribed verbatim. Data analysis was conducted using a thematic analysis approach. The analysis steps included familiarization with the data, initial coding, extraction and review of themes, and finalization. To enhance validity, member check was used, meaning that a summary of the findings was provided to the participant to confirm their accuracy and validity. Theoretical triangulation was also employed by comparing the findings with existing literature, and the researcher managed their own assumptions and possible biases by adhering to the principle of reflexivity.

In terms of ethical considerations, written informed consent was obtained from the participant, the principles of confidentiality and anonymization of information were observed, and the collected data were used solely for scientific purposes.

3. Finding

An in-depth interview with a clinical psychologist with over 20 years of experience was analyzed, focusing on three key axes: risks, reliability, and safety concerns related to the use of artificial intelligence (AI) in psychological evaluation. The data were analyzed by strictly following the content analysis process (Braun & Clarke, 2006) in the form of familiarization and multiple readings of the implemented text; extraction of initial line-by-line codes; clustering of codes into subthemes; merging subthemes into macro-themes; and final review and renaming of themes to ensure coherence and separability. The interviewee's combination of clinical, educational, and management roles resulted in a perspective that encompassed operational (how to interpret tests), objective (instruments and accuracy), and systemic (public access and social consequences) dimensions. This combination increases the richness of the analysis and makes the findings useful for policy recommendations.

Table 1. Sample primary codes, definitions, and symbols

Code	Operational Definition	Excerpt Example
Non-expert Misuse	Improper access and utilization by individuals lacking professional qualifications	The system may enable misuse by unqualified or opportunistic individuals.
Mislabeling	Issuing generalized judgments and stigmatizing clients	It may result in labeling and stigmatization of clients.
Lack of Contextual Understanding	Inability of the system to consider the situational or contextual background of the examinee	The software does not take the examinee's circumstances into account—for instance, a recent bereavement.
Reduced Human Interaction	Weakening of the therapeutic alliance and reduction in direct human interaction	Human interactions are likely to decrease.
Objective Test Accuracy	Reliable performance in objective indicators, such as memory measures	The system appears more reliable in assessing objective aspects such as memory.
Clinical Interpretation Weakness	Deficiency in recognizing clinical and emotional complexities	The system shows weakness in clinical interpretation.
Need for Human Supervision	Necessity for professional human oversight and review	Human supervision is essential.
Human -Machine Integration	Combining human interpretation with machine outputs	Manual interpretation alongside software assistance is beneficial.
One-Dimensional Diagnosis	Superficial and reductionist diagnostic labels produced by AI	Diagnoses tend to be shallow and one-dimensional.
Algorithmic Bias	Potential for unfair bias against minority or underprivileged groups	The system may demonstrate negative bias toward minority or disadvantaged populations.
Data Confidentiality	Requirement for protection and encryption of personal identity information	Personal data should be anonymized and encoded.
Client Dependence	Reduced client autonomy due to repeated reliance on AI	Continuous access may hinder clients' growth of independence and autonomy.
Required Training	Necessity for psychologists to gain competence in AI-related domains	Therapists need to enhance their expertise and knowledge regarding AI systems.
Emergency Limitation	AI's weakness in identifying high-risk or emergencies	AI systems generally perform poorly in detecting dangerous behaviors or crisis situations.

According to Table 1, each quote was coded as a unit; in cases where a statement had multiple meanings (e.g., both risk and ethical concern), various codes were assigned. The codes were then combined into subthemes and themes based on semantic similarity.

Table 2. Themes, subthemes, and related code examples

Main Theme	Subthemes	Related Codes
Clinical and Social Risks and Consequences	Misuse and uninformed access; labeling and diagnostic errors; reduced quality of therapeutic relationships; neglect of clinical context	*Non-expert Misuse; Mislabeling; Reduced Human Interaction; Lack of Contextual Understanding*
Reliability and Technical–Clinical Limitations	Accuracy in objective testing; inability to interpret emotional complexity; necessity of combining with human judgment	*Objective Test Accuracy; Clinical Interpretation Weakness; Human-Machine Integration; Need for Human Supervision*
Concerns of Safety, Ethics, and Justice	Algorithmic bias and inequality, data confidentiality and security, harm to psychological growth mechanisms, and the need for training and standardization.	*Algorithmic Bias; Data Confidentiality; Client Dependence; Required Training*

3.1.1 Theme 1: Clinical and social risks and consequences

The participant emphasized that AI systems may generate decontextualized interpretations, leading to mislabeling, stigmatization, and inappropriate clinical decisions. She noted that AI tools often fail to consider situational factors—such as recent bereavement—which may result in pathologizing normal emotional reactions. The psychologist also expressed concern that increased reliance on AI could weaken the therapeutic relationship by reducing direct human interaction.

3.1.2 Theme 2: Reliability and technical-clinical limitations

According to the participant, AI demonstrates acceptable accuracy in objective indicators (e.g., memory tasks), but its performance declines when interpreting emotionally charged, culturally complex, or clinically nuanced material. She emphasized that a trained clinician must always review AI outputs and that human–machine integration is crucial for maintaining diagnostic validity. AI should therefore be used as a complementary tool rather than an independent evaluator.

3.1.3 Theme 3: Safety, Ethics, and Justice Concerns

The psychologist highlighted several ethical risks, including algorithmic bias against minority groups, threats to data confidentiality, and the possibility of clients developing psychological dependence on AI systems. She emphasized the need for professional training, clear standards, and regulatory oversight to ensure safe and equitable use of AI in clinical settings. The conceptual model is outlined in Figure 1.

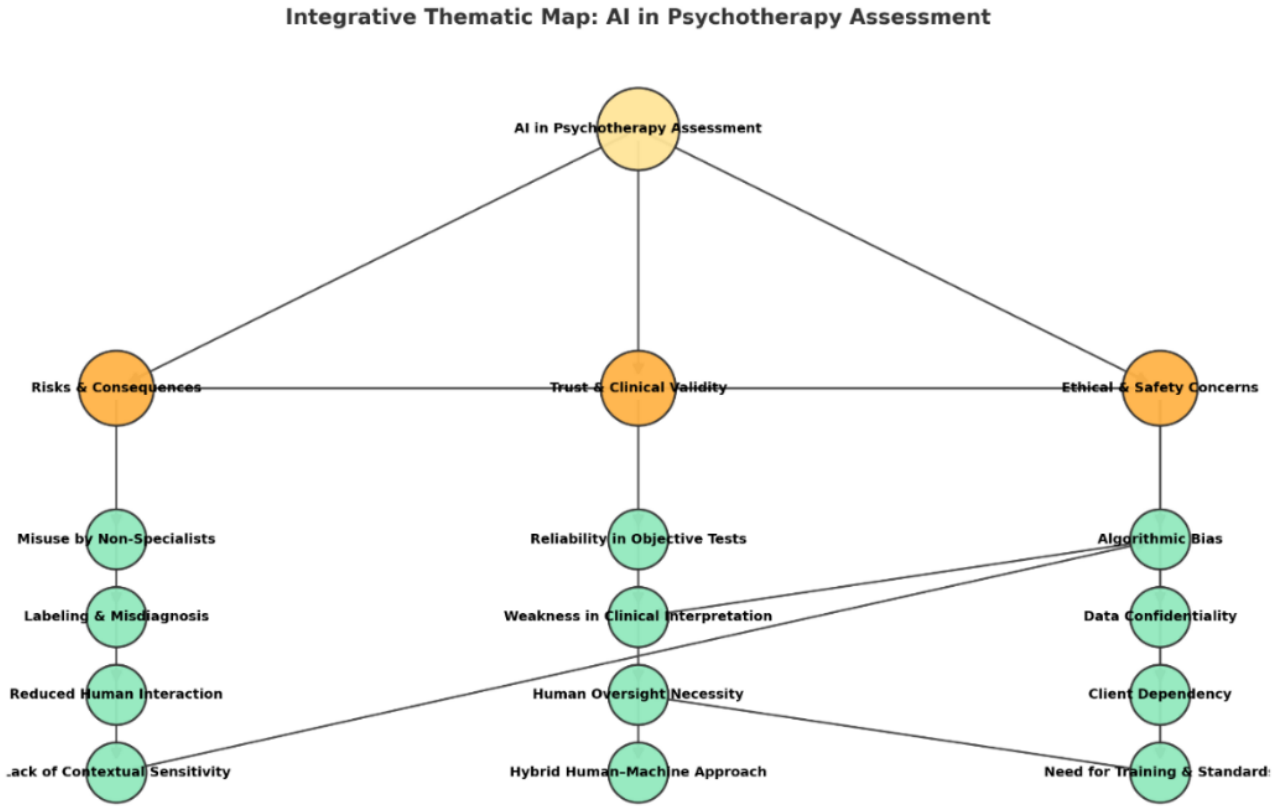

Figure 1. Integrated conceptual model

Figure 1 shows the integrated conceptual model resulting from the content analysis of the clinical psychologist interview data. In this map, the three macro-themes extracted from the study of risks and consequences, clinical reliability and validity, and safety and ethical concerns are organized in a dynamic and multifaceted relationship around the central theme of the research, "the use of artificial intelligence in psychological evaluation."

1. Central level: the central concept of the research

At the center of the map is the main node "AI in Psychotherapy Evaluation", which serves as the phenomenological core of the study. This node shows that all themes and subthemes are formed in direct proportion to the psychologist's experience and perception of the role, function, and challenges of AI in the psychological evaluation process. This core is a platform for explaining the interaction between three macrothemes, each reflecting a dimension of the professional's experience: risks imply operational and clinical threats, clinical trust concerns the boundaries of reliability, and ethical concerns concern the human and value implications of the technology.

2. Middle Level: Macrothemes and Inter-Thematic Relationships

The three macrothemes are linked together in an interactive cycle:

- Risks → Trust: Increasing risks (such as manual interpretation or misuse by non-experts) directly lead to reduced clinical trust in AI outputs.
- Trust → Ethics: Next, the degree of trust or distrust of experts affects the type of ethical concerns; the lower the trust, the greater the sensitivity to safety and confidentiality issues.
- Ethics → Risks: In a feedback loop, inadequate ethical considerations (such as lack of data standards or professional training) can lead to increased clinical and social risks.

This closed cycle suggests that expert understanding of AI is not linear but systemic and interrelated—any change in one dimension also changes the other two dimensions.

3. Sub-level: Sub-themes and inferential paths

Sub-themes branching out from each domain illuminate its internal structure. In the risks and consequences section, issues such as non-expert abuse and disregard for individual contexts are identified as primary causes of distrust and weakening of the therapeutic relationship. In the trustworthiness section, sub-themes such as weaknesses in clinical interpretation and the need for human oversight reflect the fact that AI can only be trusted if accompanied by human judgment, and in the ethical concerns section, concepts such as algorithmic bias, data confidentiality, and client dependency indicate the profound human implications of this technology. The horizontal arrows between some sub-themes indicate conceptual overlap; that is, a deficiency in clinical interpretation has both an ethical root (algorithmic bias) and a cognitive consequence in clinical trust.

4. A macro-interpretive reading of the model

The figure shows that the participant psychologist has an integrative and relational view of AI in psychotherapy: He sees the technology not as a purely useful tool or a mere threat, but as a phenomenon whose effectiveness is entirely dependent on the degree of human oversight, ethical commitment, and cultural sensitivity in interpreting the data. From an analytical perspective, the direction of the arrows in the model is based on a causal-interpretive relationship. Risks "set the stage" for changes in trust, trust "moderates" moral attitudes, and morality "prevents" or "accelerates" the emergence of risks. In other words, the three themes are in a dynamic cycle that determines the stability of the AI-based psychological evaluation system.

5. Analytical Conclusion of the Model

The integrated thematic map suggests that AI in psychotherapy is an interdisciplinary and context-sensitive phenomenon; its sustainability and effectiveness depend on a balance between technical efficiency, human trust, and professional ethics; the desired model is not to eliminate AI but to integrate it into a human-centered framework. In short, this graph represents the "risk-trust-ethics triad," which reveals the underlying structure of clinicians' experiences with the use of AI.

6. Validity, Reliability, and Replication

- Steps to Ensure Validity: The full interview transcript was transcribed verbatim and read several times; to increase validity, the researcher used participant review (as per the method report). Independent coding by the researcher and multiple theme reviews were conducted to ensure internal consistency.
- Stability/Reliability: Because the analysis is based on a single case interview, results should be reported with caution in generalizing; however, the depth of study and the repetition of key concepts (such as the "need for human supervision") indicate conceptual stability.
- Researcher Reflexivity: The researcher acknowledged their positions and assumptions and attempted to mitigate the effects of bias. This makes interpretations clearer and more traceable.

4. Conclusion

The findings of this study present a multidimensional picture of clinicians' perceptions of AI in psychotherapy, organized around three fundamental axes: "risks," "trustworthiness," and "ethical considerations." These three dimensions are not parallel lines, but rather sides of a dynamic triangle that have a causal and feedback relationship with each other, a pattern that was also revealed in the integrated thematic graph of this study. According to the existing theoretical literature, AI in the field of mental health has two faces: empowering and threatening. [1] and [3] They believe that the introduction of AI into human structures will lead to a redefinition of decision-making and the role of humans in cognitive processes, which is the most sensitive aspect of human interaction in psychotherapy. From the perspective of the specialist in the study, this redefinition, if it occurs without an ethical framework and cultural context, can lead to distortion rather than transformation. In this regard, the findings are consistent with the report [4], which showed that artificial intelligence, when used in controlled conditions, can help reduce stress and increase psychological well-being, provided that humans remain the ultimate decision-makers.

4.1 Risks: From a lack of contextualization to a threat to the therapeutic relationship

Thematic analysis revealed that the participating psychologist identified the greatest risk as the lack of situational sensitivity and contextual understanding of AI tools. This view aligns with the findings of [11] and [12], which highlight the limitations of machine learning in comprehending multilevel emotional patterns. In particular, in personality tests such as the MMPI, relying solely on numerical data can lead to pathological interpretations of natural reactions; an issue that [16] also raised in the context of suicide counseling, warning that unempathetic responses of intelligent systems themselves exacerbate psychological risk. From a theoretical perspective, this phenomenon represents a cognitive gap between computational explanations and lived experiences. What AI analyzes in the form of data is often devoid of the human meaning of the situation. As [5] showed in their review of multimodal emotion recognition systems, even deep algorithms in emotion analysis cannot understand "intentional context".

4.2 Trustworthiness: From Statistical Accuracy to Moral Trust

The results showed that clinical trust in AI is a concept beyond technical accuracy. According to the interviewee, even if the output in objective tests is accurate, it lacks clinical meaning and validity without human supervision. This perception is consistent with the findings of [18], which considers the role of AI in "risk reduction" dependent on the presence of a human loop in decision-making. In fact, trust in the context of psychotherapy is a type of moral trust, similar to what [20] proposes in his research on "AI literacy". This type of trust is not based on numerical accuracy, but on the assurance of fairness and empathy in decision-making. The findings are also consistent with the results of [15] on user satisfaction with mental health applications: a positive experience with technology is achieved when the feeling of "understanding" and "human control" is maintained in the interaction with the system.

4.3 Ethical Considerations: The Human-Machine Boundary

At the third level, data implies a wide range of ethical concerns, including the risk of algorithmic bias against minorities, data privacy violations, and psychological dependency of clients on the system. These findings are consistent with the analysis of [19] on the need for data ethics in the health system. They asserted that in the absence of data governance, AI can reproduce structural discrimination. The concept of "algorithmic bias," which was also prominent in the present study, is particularly raised in [10] and [8]. They demonstrated that sentiment analysis models, when trained on culturally specific data, tend to produce errors against other linguistic and ethnic groups. In this regard, [2] also emphasized the need for "strategic management of AI," that is, institutionalizing ethical and control processes before the general deployment of the technology, to minimize the risk of deviation and abuse.

4.4 Linking the Findings to Open Systems Theory and Human-Centered Psychotherapy

The analytical model resulting from this study (Risk-Trust-Ethics) can be explained within the theoretical framework of open systems. In this model, the human-machine relationship is a self-regulating system whose sustainability depends on the balance between technical feedback and human values [3]. If one of these components is removed or weakened (for example, ethics or human supervision), the system suffers from functional imbalance and decision-making errors. The findings also overlap with the principles of human-centered psychotherapy. The participant's emphasis on empathy, congruence, and the therapist's unconditional attention to the client is reminiscent of the main components of the Rogerian model. From this perspective, technology can be a complementary tool for enhancing cognitive understanding, but it will not replace the "human connection between the therapist and the client."

4.5 Recommendations for Policy, Education, and Practice

a) Policy and Data Governance

Based on the findings and recommendations of [19], it is essential to establish a national framework for the ethics of AI in mental health. This framework should include: the encryption and anonymization of psychological data, the design of a multidisciplinary ethical oversight body, the mandating of the use of explainable AI, and the development of legal guidelines for the therapeutic applications of AI.

b) Professional training

According to [20], improving "AI literacy" is a fundamental strategy for risk reduction. The present findings also emphasize that psychologists should be trained in technical, data, and ethical areas. This training should include understanding data bias, how to interpret outputs, and the principles of human oversight of algorithms.

C) Clinical application

In line with the view [17] on industrial safety models, the human-in-the-loop model should also be used in psychotherapy. In this model, the final treatment decision is always approved by a human expert, and AI plays a supporting role rather than making the decision itself. Overall, the findings emphasize that AI in psychotherapy is a two-faced phenomenon, simultaneously enhancing and posing a threat to the field. On the one hand, it can increase the accuracy of diagnosis and prediction by processing complex and multifaceted data [7, 13, 14]. On the other hand, in the absence of ethical and cultural sensitivity, it may lead to a decrease in humanity in therapy [16]. According to the analytical model of this study, the desired future depends on a balance between three central components: informed risk-taking, ethical trust, and human supervision. In such a system, technology is not a substitute for the therapist, but their ethical partner; A partner guided by human wisdom.

4.6 Future Research Horizons

- Conducting multi-case studies with the participation of therapists from different cultural backgrounds to generalize the risk-trust-morality model.
- Investigating the effect of AI literacy training on changing psychologists' attitudes towards trust and risk.
- Designing new qualitative tools to measure "moral trust" in human-machine interaction in mental health.
- Studying the effect of localized Persian algorithms on reducing cultural bias in the interpretation of emotions.

Artificial intelligence in psychotherapy is like a double-edged sword, whose success depends on the skillful application of its techniques. The therapist of the future will rewrite a new meaning of humanity in the field of therapy, not in competition with the machine, but in a constant dialogue with it.

Conflict of Interests

No conflict of interest has been expressed by the authors.

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