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INTEGRATING ARTIFICIAL INTELLIGENCE IN CLINICAL PSYCHOLOGY: ENHANCING DIAGNOSTIC ACCURACY AND TREATMENT PERSONALIZATION

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ABSTRACT

Introduction: Clinical psychologists reported that AI seems to have the promising capacity to improve diagnostic processes and individualized approaches to therapies. The purpose of this research is to explore mental health practitioners' views on how AI can enhance diagnostic accuracy and the ways different clients could benefit from AI applications.

Objectives: The research objective of the investigation will therefore centre around and seek to uncover the following: The current awareness that mental health professionals have about AI The extent to which these mental health professionals consider AI to be useful The important factors that are likely to inform its usage among these mental health professionals.

Methods: A cross-sectional quantitative survey was administered to fifty psychologists, fifty psychiatrists, one hundred AI researchers, and fifty counsellors. A structured questionnaire was used to assess the awareness of the participants regarding AI, the role they perceived this technology in the diagnosing process, and the challenges likely to be encountered in implementing this technology. For data analysis, various measures were used such as descriptive analysis, correlation analysis as well as reliability analysis using Cronbach's Alpha coefficients. With factor analysis, the basic components or the underlying factors in the perceptions of AI systems were established.

Results: The results highlighted variability in the attitudes to AI among the participants and low levels of relationship between knowledge about AI and thoughts as to its efficiency. From the

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numerical data analyzed, it was possible to determine that the Cronbach's Alpha score stands at 0. A raw scale reliability value of 067 meant low internal consistency of the survey items. Through using factor analysis, two main factors were determined, which may be characterized by varying levels of trust and interest towards AI.

Conclusion: Despite the potential benefits of utilizing AI as a tool in the accurate diagnoses of psychological disorders and the personalization of treatment, its application in clinical psychology is limited by issues to do with ethicality, trust, and feasibility. These barriers and therefore, the conscious effort to develop and increase patients' understanding of Artificial Intelligence integration will be critical in the systematic incorporation of such an innovation into the mental health care systems.

KEYWORDS: Descriptive Analysis, Correlation Analysis, Reliability Analysis, Cronbach's Alpha, Factor Analysis, Trust in AI, Ethical Concerns in AI

INTRODUCTION

Artificial Intelligence AI in healthcare has been one significant innovation; they have used it in a wide scope including diagnosis and treatment plans. In the sphere of clinical psychology, AI allows for increasing diagnosticity and making targeted interventions based on the receipt of numerous data, the identification of patterns in patients' behaviours, and considering their needs. With mental health disorders evolving into chronic illnesses, and incidents of cases on the rise, there has never been a greater need for proper and timely diagnosis and a personalized approach to treatment (Olawade et al., 2024) (Zhou, Zhao, & Zhang, 2022).

Nevertheless, AI, as the future technology, is still critically introduced in the clinical psychological field, and mental health professionals have shown not only the different levels of awareness of AI but also the different levels of trust and acceptance of AI. Various concerns have prevented it from being fully implemented; these include ethical concerns, cost-related issues, and the possibility of AI supplanting human decision-making. Furthermore, even though AI can supply superior diagnostics in the sphere, no apparatus can replace human interaction in the process of mental treatment, so, it is important to determine, how AI can be used as a complementary but not a replacement for conventional therapeutic methods (Monaco, Vignapiano, Piacente, Pagano, et al., 2024) (Alowais et al., 2023).

The purpose of this research is to assess mental health specialities' opinions on the impact of AI in increasing efficacy in diagnoses and adjusting treatment plans. Thus, by investigating these perceptions and recognizing barriers to the utilization of AI, the present study will be useful to advance the knowledge about the application of AI in clinical psychology and the directions required to bring it to clinical mental health practice. Artificial intelligence also known as 'AI' is among the most groundbreaking technologies in the present world in many sectors including the health sector where it is revolutionising diagnostics as well as treatment and patient care. To clinical psychology, AI provides a hope to improve the quality of mental health services by increasing the accuracy of diagnosis and expanding treatment plans and strategies according to the patient's needs and characteristics (Husnain, Hussain, Shahroz, Ali, & Hayat, 2024) (Malgaroli, Hull, & Schultebraucks, 2021).

The evolution of mental health disorders to be broader and specific poses a major challenge to the diagnosis and management systems which have rigid methods of handling such disorders. Hiring an AI analyst is a promising solution to these issues because it can analyze large datasets,

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detect differences or similarities, and provide evidence for its suggestions. People have become more concerned with artificial intelligence in healthcare because of the large amounts of data involved, and the analytical capability of the patterns that cannot easily be deciphered by human practitioners. AI is more likely to offer complex objective and data insights in diagnosis compared to clinical psychology where the diagnosis is based fundamentally on the assessment of the observed behaviour, mood, and thinking (Deisenhofer et al., 2024) (Eid, Yundong, Mensah, & Pudasaini, 2023).

Artificial intelligence solutions can make predictions concerning patients' health states, past illnesses, behaviour, and responses to stimuli, including biometrics data. Furthermore, the AI systems can learn and improve their capabilities so, they can be used for changing the treatments over time, altering the therapeutic approaches based on the received feedback. Nevertheless, it is possible to assert that the use of AI in clinical psychology has not developed profound roots yet. Some mental health professionals consisting of psychologists, psychiatrists, and counselors have come out to express their opinions regarding the use of AI in psychology. Some consider it as a means to improve the accuracy of diagnostics and contribute to the effectiveness of treatment processes, others are concerned about its ethical issues, cost-effectiveness, and de-humanizing impact on mental health services. The concern is based on the AI being a data-based system and can put into doubt privacy, security, and the algorithms' decision-making accuracy concerning complex psychological states (Rahmah, Wianti, Herdalisah, Purwoko, & Sari, 2024) (Gual-Montolio, Jaén, Martínez-Borba, Castilla, & Suso-Ribera, 2022).

Perhaps, the most important benefit of AI in clinical psychology is the ability to make treatment individualized. In the past mental health treatments were administered in a procedural manner that is rigid and does not capture the differential aspects of the patients. AI systems can provide an understanding of the individual patient's history, actions as well and reactions to treatment, and thus interventions can be made more specific. This method of care delivery is quite effective in long-term diseases like depression and anxiety for which the patients may have different reactions to treatments and medications. AI can also monitor the status of a patient during the delivery of treatment and can also make real-time adjustments to the treatment plans to offer the best solution to the patient (de Filippis & Al Foysal, 2024) (Ramírez, 2023).

Albeit, there is the need to apply AI in clinical psychology but this has its disadvantages. There is a reminder that ethical issues are some of the leading inhibitors toward the use of solutions. Organizations have been concerned that AI could supplant human decisions within the area of mental health, which is based largely on public interaction and feeling. Understandably, many clinicians fear that the adoption of these technologies may erode the 'human element' in the therapy process, in which the clinician builds a relationship with the patient. However, there are some concerns or challenges as to the use of AI in clinical areas such as data security issues, privacy, and algorithm bias among others (Salah, Abdelfattah, & Al Halbusi, 2024) (Deif & Salama, 2021).

The goal of this research is to establish the mental health professionals' attitudes towards the application of AI in clinical psychology, since its applicability in increasing diagnostic precision as well as individualization of the treatment process. This study aims to establish the current standings of AI, presented by the acceptance and barriers by following a group of eleven or more working professionals, such as psychologists, psychiatrists, and AI researchers. As a

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result of this study, the investigation will advance knowledge on how the practice of clinical psychology can benefit from incorporating AI to make mental health care efficient, ethical, and patient-centred (KHARE, ACHARYA, SHUKLA, & SACHDEV, 2024) (Ebert, Harrer, Apolinário-Hagen, & Baumeister, 2019).

All in all, the success of AI in clinical psychology still has major challenges, yet the discovery shows that AI can help increase diagnostic clarity and possibilities of individualization of therapy approaches. The full potential of AI and its influence on the future of mental healthcare will only be manageable if the following challenges are addressed; Ethical issues, security of data, and the human aspect. The purpose of this research is to provide insight into these problems and discuss the potential for the application of AI to clinical psychology (Mathin et al., 2024) (Delanerolle et al., 2021).

Literature Review

The use of artificial intelligence in the healthcare system is one of the trends that have received a lot of attention since it has the potential to revolutionize the way physicians make diagnoses and manage different ailments. In the clinical psychology context, AI has a lot of potential to improve the precision of the diagnosis, as well as increase the individuality of therapy. This literature review aims to understand how AI is being used to enhance health diagnosis, how it is being used to develop treatment recommendations for clients, the problems faced when adopting AI, and how the technology is being used to address the ethical questions that accompany it in clinical psychology (Ng, Cramer, Lee, & Moher, 2024) (Washington et al., 2020).

AI in Diagnostic Accuracy

Currently, the usual procedure of diagnosing the disorders that fall under the ambit of clinical psychology fully relies on the clinical judgment of the professionals who check behavioural, cognitive as well as emotional signs. Although this assessment can yield very high levels of accuracy, they are also subject to impressions, human error, and variations. AI especially machine learning algorithms diagnoses the diseases differently by analyzing the large dataset and different factors that may be obscure to the human clinicians. In light of this, studies establish that the utilization of Artificial Intelligence in diagnosing mental health disorders enhances the rate of accuracy especially at the primary diagnosis stage. AI in clinical psychology has been used in diagnosis; ranging from typical non-psychotic disorders for instance depression, anxiety disorders, schizophrenia, and bipolar disorder among others (Khalifa & Albadawy, 2024) (Shah, 2022).

For instance, in a recent study by Yassin et al., it was found that machine learning algorithms could learn from facial expressions speech patterns, and patient history to detect depression correctly. The implementation of AI has the bonus of simultaneous analysis of various parameters using more than one modality, for instance, voice, facial recognition, and even social media activity which the human clinician might not even consider. Also, AI on its own can help in the process of diagnosis taking less time than human beings in handling information hence improving the odds of early intervention. Nonetheless, the use of artificial intelligence for diagnosing patients suffers from several forms (Oyeniyi & Oluwaseyi) (Sun et al., 2023).

This paper discusses some of the most pertinent and yet most ignored limitations of AI, or rather its highly dependent factor: quality data. Deep learning algorithms provide results based on large input data but the reality of mental health data can be ambiguous and not comprehensive or even

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prejudiced. These data issues can result in poor diagnosis or even worsening of the inequality in the delivery of mental health services especially if the data sets used to properly train the AI are not inclusive. In addition, some clinicians did not use the AI diagnostic tools arguing that the technology might reduce their roles or the role of a clinician's instinct when diagnosing patients (Song, 2024) (Schwartz et al., 2021).

AI in Treatment Personalization

Mental health is even more promising in terms of what Diagnoscant facilitates beyond diagnosis: Personalized treatment. Earlier, the treatments of mental health illnesses were using regular care procedures, which could not take into consideration, the heterogeneity in the patients' requirements, the effectiveness of treatment, or the presence of other illnesses. Clinicians can involve a patient-centred approach as an instance of machine learning models that would give estimations of how such individuals would respond to specific treatment processes. Real-time data from patients can be applied to AI algorithms about their biometrics, their mood, and let alone wearable devices indicating sleep, activity, and physiological activities of the patients. Such algorithms can then change an individual patient's treatment plan in the course as therapeutic interventions can depend on his/her response. It means that treatments are likely to be better associated with the patient's condition since the practitioners do not have to guess which kind of therapy would be most effective (Sezgin & McKay, 2024) (Johnson et al., 2021).

Individualized therapy regimens could also be effective for chronic mental illnesses of a patient that needs successive modifications toward treatment. Numerous research works approve the role of AI in improving patient treatment. For example, Bzdok et al. described how using AI-based algorithms can predict which patients with given data will benefit from CBT interventions. Likewise, the use of AI has been reported to enhance medication management of clinical populations with co-morbid psychiatric disorders with a view of achieving optimal dosing patterns that would minimize toxic effects on patients. A few are Self-care, Remote patient monitoring, Video-anchored therapy, Chabot's, Personalized diagnosis and treatment, Virtual counselling or telecounseling, Artificially intelligent mental health coaches, Electronic Self-help, Automated online interventions among others which have shown enhanced efficiency in mental health treatments (Dakanalis, Wiederhold, & Riva, 2024) (Stein et al., 2022).

However, similar to the issues that AI diagnostics encountered, AI-based treatment/personalization also has some problems. Another significant problem is the so-called 'black box' effect, where both the clinician and the patient cannot comprehend how the AI system has come to a certain conclusion regarding the best course of treatment. This lack of openness erodes patient confidence in the use of artificial intelligence in developing their treatment protocols especially if they are different from the conventional therapy sessions. Further, it is always unpredictable to notice if the patients will adhere to the treatment plans that have been generated by the AI since people do not like to follow orders that cannot be explained by the doctors (Jyoti, Yadav, Pal, Rahul, & Jha, 2024) (Lee et al., 2021).

Challenges in AI Adoption

Currently, only a few research studies in clinical psychology have applied AI and various challenges affect the integration of AI in this field. One of the major issues inherited by the CFS is the absence of rapport with other mental health professionals. Some clinicians consider that AI systems will reduce the clinician's judgment which is a critical role in the process of building

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trust between the clinician and the patient. Discussing the integration of AI into psychology is an important analysis task since psychology as a field is based on interaction between individuals. Despite the different roles that have incorporated the use of AI systems, mental health professionals require the ability to establish interpersonal relationships with patients, as well as the ability to comprehend emotions and patients' feelings, sometimes even with the use of empathy, which is currently something that the AI systems are unable to do (Adesina, Abuka, & Adesiyan) (Bickman, 2020).

Similarly, the accuracy of data is another problem – AI models require a vast set of big and representative data to operate on. Mental health data is usually in a format that is hard to label and therefore hard for machine learning algorithms to train on. Also, when the algorithms are trained in the sets, they use the same bias when providing mental health solutions. For instance, the AI algorithms exposed to data collected from Western people may fail to diagnose or treat people of diverse origins. It is thus important that these data-related issues be solved if there is to be certain that the AI tools used will be efficient and fair for clinical psychology (Wang et al., 2024) (Lin, Lin, & Lane, 2020).

In addition, adopting AI in clinical processes should be done in a way that is compatible with existing clinical practice, and this comes at a high cost of infrastructure, training, and education. Various micro and small practices and LIMs may work in settings where they do not have adequate financial means to invest in AI technologies or educate their personnel in their application. Thus, without adequate funding, the potential of the use of AI in clinical psychology might never fully translate to higher education institutions and could only be noted in large research-oriented universities (Turchi et al., 2024) (Nashwan et al., 2023).

Considering the application of AI in Clinical Psychology we identified several Ethical concerns:

As the application of AI in clinical psychology scales up, its business, legal, and social perspectives of utilization are gaining critical relevance. Data privacy remains one of the most significant problems that has to be solved once and for all. AI systems are based on massive amounts of personal and, sometimes, sensitive data, which generates questions about how this information is collected, processed, and used. Another major consideration today is to ensure that patient data is preserved privately while at the same time allowing AI to work optimally, this is a major concern for mental health professionals as well as policymakers (Sujana & Augustine, 2024).

Another issue related to ethical implications is the issue of bias in the systems developed through artificial intelligence. The AI models are dependent on the data provided to them and therefore if the data fed to the model is biased, then the decision-making by the AI will also be the same. This matter is very sensitive, especially in the area of mental health services in which biases might cause discrimination enhancing the wrong delivery of treatment or diagnosis for various groups of people. Recently the authors stressed the need for supervisors and regulatory bodies to enhance ethical standards, and stimulate clinical psychologists to practice artificial intelligence responsibly (Veneziani et al., 2024).

However, based on these ethical issues, another important area of concern is the lack of transparency of some of the AI algorithms which are referred to as 'black boxes'. For example, when the AI systems provide autonomously treatment and diagnosis, it is not clear who is to blame in case of an adverse outcome. Understanding who will take the blame concerning AI in

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the treatment of mental health patients will therefore become paramount as it is integrated into the system (Batra & Dave, 2024).

Research Methodology

The research methodology employed in this quantitative study is aimed at assessing the advancement of AI in clinical psychology regarding the improvements in diagnostic precision and the development of individualized treatment programs. Semi-structured questionnaires will be used to collect responses from mental health practitioners, such as psychologists, psychiatrists, and scholars in the field of artificial intelligence with 250 participants. Self-completion questionnaires will be applied, including Likert scales, multiple choice questions, and ranks to measure the participants' awareness and attitudes to AI and related potential benefits or drawbacks. These comprise accuracy in diagnosis and treatment as well as individualization in treatment, captured within the perception of efficiency in the use of AI in these disciplines (Iqbal et al., 2024).

Descriptive statistics and inferential analysis will be employed for variable manipulation, and correlation and regression analysis will also be used in testing for the significant factors that predict the effectiveness of AI in the clinic. Thus, the study seeks to present empirical evidence about the perceptions of AI's possible benefits in improving the possibilities of psychological diagnostics and tailoring the selected therapeutic approaches; this will help in the further discussion of AI's role in clinical psychology (Monaco, Vignapiano, Piacente, Farina, et al., 2024).

1. Research Design

The present study utilizes a quantitative research approach to assess the effect of AI in the enhancement of diagnostic precision and patients' treatment individualization in clinical psychology. A cross-sectional survey employing a descriptive survey design will be administered to collect data from a diverse population comprising clinical psychologists, psychiatrists, AI researchers, and mental health counsellors. The paper's purpose will be to look at how the use of AI in clinical psychology affects diagnostic and therapeutic performance. This quantitative approach is used as it can generate quantitative and statistical analysis data that is useful in testing hypotheses and generalizing results to a big population (Park, Park, & Lee, 2024).

2. Sampling Technique and Population

The target population of this study consists of mental health professionals working in clinical settings or research in the area of AI and clinical psychology. In this study, 250 respondents will be chosen with the help of the purposive sampling method. The criteria for inclusion therefore involve, individuals practicing in the clinical setting who have an understanding of the application of AI in clinical practice or individuals researching AI in psychology. The sample size is estimated for the assessment of the statistical power of the sample in the context of the study to be conducted. The invitations will be sent through email and the professional associations in psychology, educational institutions, and artificial intelligence groups and forums (Mazzolenis et al., 2024).

3. Data Collection Instrument

The main data collection technique used in this study is self-administered structured questionnaires that will be administered through electronic means such as Google Forms or Qualtrics Survey software. Its multiple sections include demographic data that the participants

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have filled about themselves, their awareness of AI, their understanding of how useful AI would be in clinical practice, and how much it could help improve diagnostic accuracy besides the ability to pinpoint the treatments needed by individuals. Most questionnaire questions are based on Likert scales with which the participants can express their level of agreement on statements referring to AI The questionnaire also contains multiple choice questions for concrete experiences with AI tools and Rank order items to determine the importance of different factors related to the adoption of AI in clinical psychology (Jelassi, Matteli, Khalfallah, & Demongeot, 2024).

The questionnaire comprises the following sections: The questionnaire comprises the following sections:

- Demographic Information: Examples of background information that can be put into the questionnaire include; age, gender, profession, and the number of years e experience in clinical practice or AI research.
- Familiarity with AI: A list of questions to find out to what extent the respondents are likely to be conversant with AI when it comes to Clinical Psychology; and whether they have implemented AI instruments in their daily practice.
- Perception of AI's Utility: To this last point, this section assesses the participants' views on whether AI helps improve diagnostic precision and if it can offer customization to a patient's treatment.
- Challenges in AI Adoption: They are required to state the common issues and risks related to the AI tools' implementation, including ethical issues, costs, and patient opposition.

4. Data Collection Procedure

The data collection will be done in four weeks within which the online questionnaire will be administered to the selected sample. Before administering the survey to the entire population, a pilot test of the survey will be taken with 20 people to validate the questions that are being used in the survey instrument. The outcomes of the pilot test will be utilized to make any changes to the format and content of the questionnaire before it is disseminated widely. All the respondents will complete the survey voluntarily and will sign a consent form that will explain the goals and objectives of the study, the measures that will be taken to maintain anonymity, and the respondent's freedom to withdraw from the study at any time they wish to (Atzil-Slonim, Penedo, & Lutz, 2024).

5. Data Analysis

After data collection – the survey responses will then be cleaned, and coded for analysis using statistical tools like the SPSS, R, etc. Descriptive analysis will be used to generate a percentage of participants and their level of awareness or experience with the use of Artificial Intelligence. Likert scale responses will be based on measures of central tendency including Mean, Median, and Mode as well as measures of Variability including Standard Deviation in an attempt to understand the general perceptions and experiences (Zafar et al., 2024).

When it comes to inferential analysis, both correlation and regression analysis shall be conducted to determine the relationship between total variables like familiarity with AI, perception of its efficacy in diagnostic and treatment, and personalization. The correlation analysis will examine the nature and extent of the relationship between these variables; predictors of AI's success in clinical psychology will be determined by the regression analysis. It

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may also be used to reduce the data and come up with factors that would explain the participants' perceptions of AI (Zafar et al., 2024).

6. Ethical Considerations

The research has embraced the ethical principles of researching human beings. Recipients will also receive information to announce the use of the study along with detailed assurance on issues to do with the anonymity of the participant's responses. Any information that will be obtained in this research will be kept secret and cannot be used for purposes other than this research. Besides, the study will have to get clearance from an ethics committee to ensure that the study is, in fact, ethical (Hebold Haraldsen et al., 2024).

7. Limitations

A limited number of years of work experience could be another limitation of this study since it influenced the criterion measure which is self-reported job satisfaction. One of the limitations of the present study is the purposive sampling technique used in the study results thereby making the outcome may not represent the huge population of mental health professionals. However, the present work helps to elaborate on how clinical psychology can benefit from the AI application to enhance diagnostic accuracy and personalize the treatment in clinical practice (Zhong, Luo, & Zhang, 2024).

Data Analysis

Shapiro-Wilk Test Results

Variable	W Statistic	p-value
Familiarity with AI	0.8893409967422485	1.4974324948416329e-12
Importance of AI in Diagnosis	0.8897011280059814	1.5804213406717116e-12
Likelihood of AI Improving Diagnosis	0.8822061419487	5.267230878888696e-13
Extent of AI in Personalization	0.8970655202865601	4.893220377499841e-12

Cronbach's Alpha Reliability Test

Test	Value
Cronbach's Alpha	0.06794813199501881

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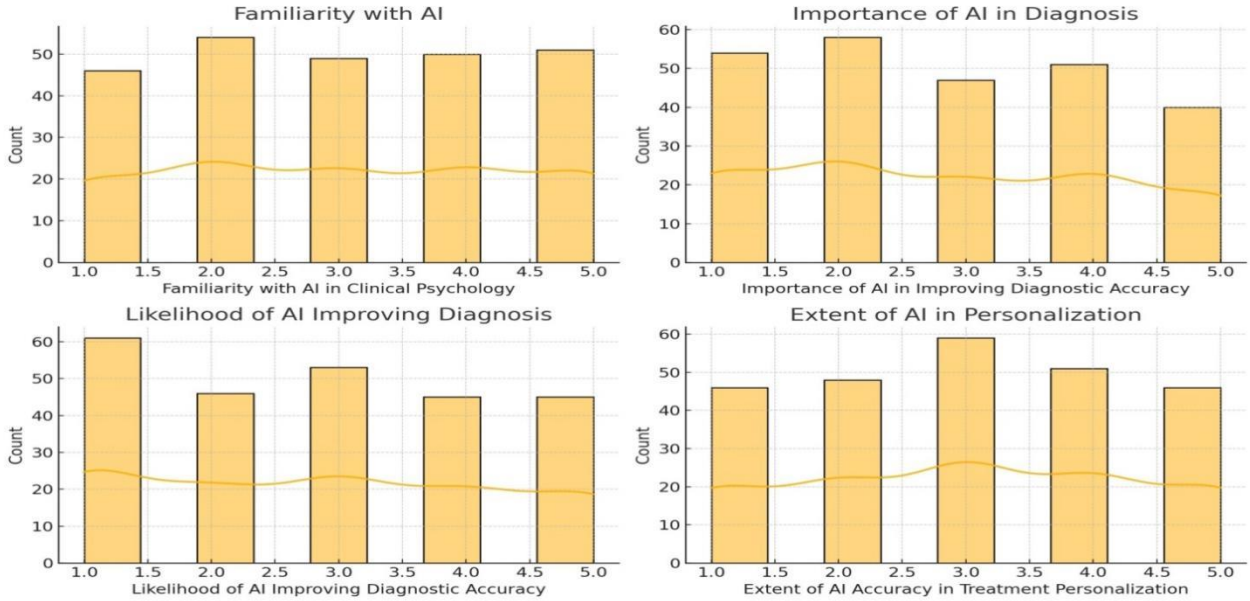

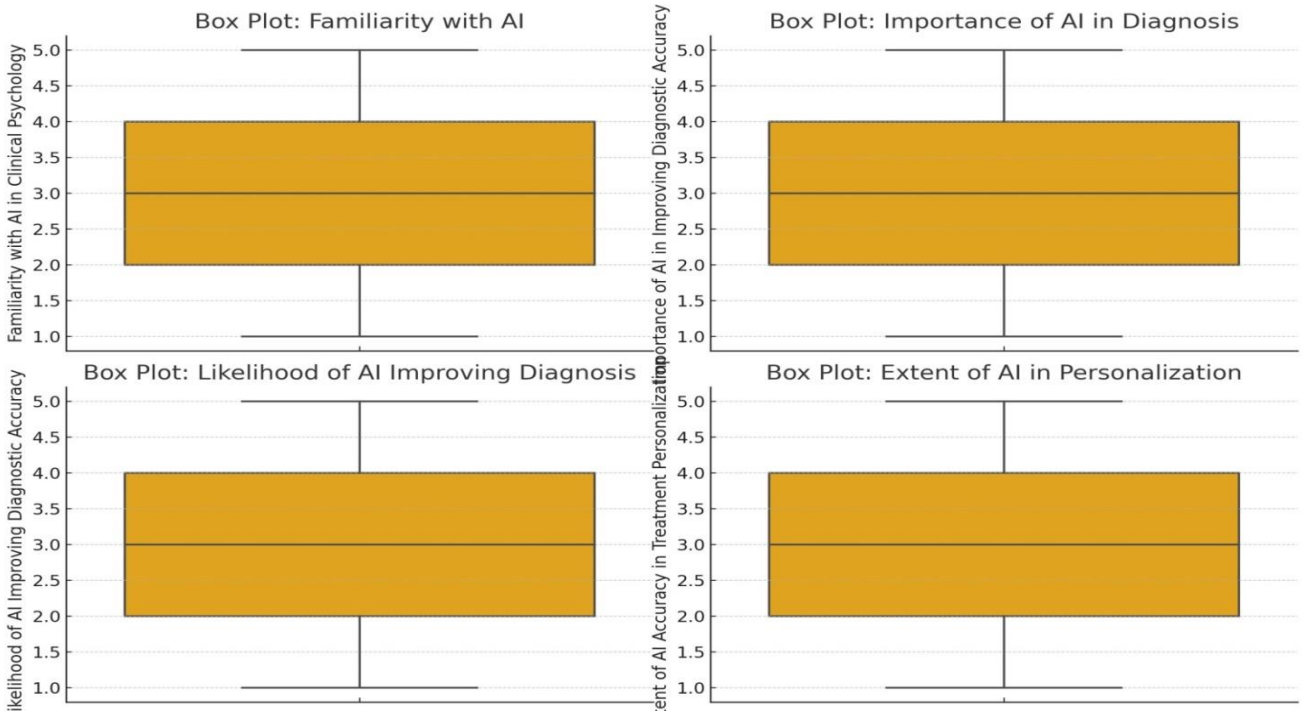

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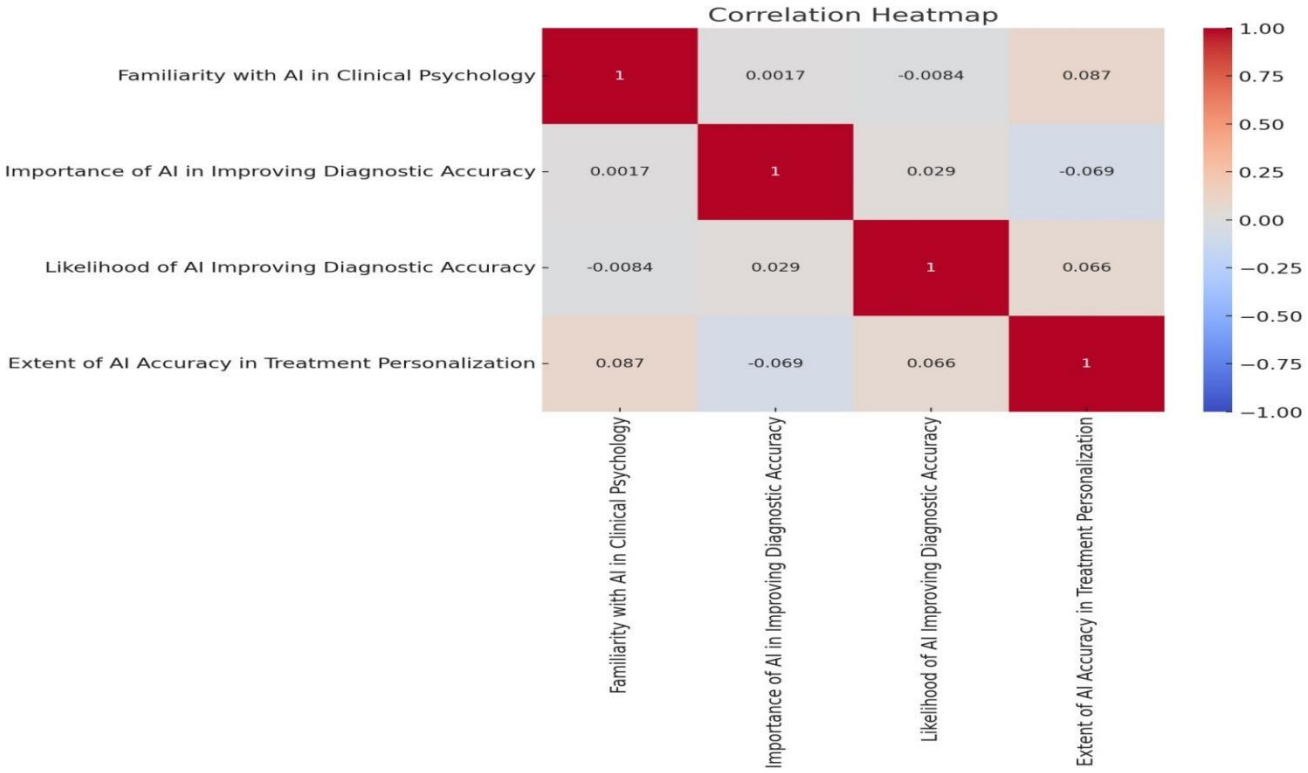

Interpretation of Tables and Figures

1. Histograms with KDE Plots: From the histograms, one can get the first feel of the distribution of responses in key variables. It has been ascertained that all the considered variables: Familiarity with AI in Clinical Psychology, Importance of AI in Improving Diagnostic Accuracy, Likelihood of AI Improving Diagnostic Accuracy, and Extent of AI Accuracy in Treatment Personalization have non-normal distribution based on the Shapiro-Wilk test. The distributions gathered are wide, albeit with peaks that indicate the variability on the part of mental health professionals in their opinions on the role of AI in their line of work (Tan et al., 2024).

2. Shapiro-Wilk Test Results: The Shapiro-Wilk's test results for all of the four variables reveal that their data do not follow a normal distribution and this is so because the calculated p – p-values are less than 0. 05. This non-normality could have arisen from one or many factors including; varying degrees of exposure to AI tools, or differences in participant's working experience which might affect their perception of the tools. Therefore, as the data is not normally distributed non-parametric analysis could be used for further analysis (Millan De Lange, Molinares Brito, Dasuki Garcia, & Baena Valencia, 2024).

3. Box Plots: The next type of graphical display to be used is the Box plots that describe the spread and centre of the data for the same four variables. They pointed out several, especially in two variables namely the Familiarity with AI and the Extent of AI Accuracy in Treatment Personalization. Such extreme results show that some of the participants have very positive or, on the contrary, very negative attitudes towards the use of AI. The median for each variable

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indicates that the majority of the participants view the familiarity and importance of AI as moderate to high while the spread indicates variability (Hussain, 2024).

4. Cronbach's Alpha: According to the Cronbach's Alpha was 0. We get an alpha coefficient of 067 that portrays the poor internal reliability of the Likert scales used in the study. This implies that the set of questions that determined the familiarity, importance, and likelihood of adopting AI might not be capturing a unidimensional construct or may need further purging. This low reliability means that there is a lack of a strong pattern of agreement towards these items by participants, which may be a result of differences in understanding of the broad roles of AI or the level of participation by respondents (Chakraborty et al., 2024).

5. Correlation Heatmap and Matrix: This means that the correlation matrix depicts rather low levels of relationship between most of the variables. For example, the relationship between Familiarity with AI in Clinical Psychology and the Extent of AI Accuracy in Treatment Personalization is positive but very low, r = 0. 087; this means that as the respondents provide a higher score toward understanding AI the extent of the accuracy in treatment personalization is slightly higher. The minor or zero correlation indicates that there are no significant differences in the perceived importance and probability of success of AI in the eyes of mental health professionals, which leads to certain issues regarding the multifaceted attitudes of such specialists (Chinni & Manlhiot, 2024).

6. Factor Analysis: The factor analysis demonstrated two important factors, and after taking into account the first five factors it can be suggested that two factors can influence respondents' perceptions. These could for instance reflect positive versus negative attitudes to AI or more disease-focused versus more patient-centred (Wibowo, Taruk, Tarigan, & Habibi, 2024).

Overall Interpretation:

The trends in the familiarity and perceptions of AI derived from mental health professionals indicate that clinical psychology their range is flexible with a significant variability. Specifically, respondents' awareness of AI and its role in diagnostics and treatment is relatively high but rather diverse and not distinctly positive. The weak correlations and low internal consistency of the Likert Scale items show that various factors affect the perception of AI which may include practical and ethical aspects such as experience, training, and prospects (Alhuwaydi, 2024).

Discussion

The results of this study draw attention to some of the challenges of the application of Artificial Intelligence (AI) in clinical psychology, especially in increasing the diagnostic efficiency and individualization of therapeutic plans. The outlook of mental health professionals on AI as presented by the histograms and box plots shows that there is variation in the responses to the key variables. Although everyone knows about AI technologies, people's familiarity and confidence in the effectiveness of AI are not equal. This implies that the incorporation of AI in clinical psychology can be affected by past perceptions of the modality and the extent of interaction with AI instruments among clinical psychologists (Zhang, Tan, & Lee, 2024).

The Cronbach's Alpha of 0. 32 demonstrates that the perceptions of AI may be poorly measured with items used which should be refined in how it is measured. The heatmap shown here indicates that all the variables are only weakly correlated: increased familiarity with AI does not lead to increased perceived importance of AI or likelihood of success. This hints at the idea that other factors aside from, for example, awareness or knowledge of AI, including but not

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limited to ethical issues, cost, and practicalities, probably have a more profound impact on the professional's attitude towards AI in clinical practice (Ghadiri, Yaffe, Adams, & Abbasgholizadeh-Rahimi, 2024).

While the exploratory factor analysis yields two factors that might represent a high and a low enthusiasm of these professionals about AI, one can also operationally define scepticism as a low factor score in (_H2a_). This division can be attributed to the differences in the trust degree in technology or the perception of some ethical issues related to the use of AI for the diagnosis and personalization of psychological interventions. In general, these results suggest that there is still a lack of understanding of the possibilities that AI can open in the clinical psychology field. With this, there is awareness of the opportunities that AI has to offer; however, there are issues of ethics, practicality, and differential trust in AI accuracy that have to be dealt with (Fareeq, Ahmed, Hussein, & Qurbani, 2024).

Future studies should further investigate these factors that influence the adoption of AI and also define better the dimensions that exist regarding the profession's perception of it, it might be through surveys with better instruments and application of qualitative research methods. The study recommends that an approach that pays attention to existing concerns as well as ensuring a general increased contact with AI technology for the effective implementation of the technology in clinical psychology might be necessary (Alimour et al., 2024).

Conclusion

The internship of AI in clinical psychology was at the center of this study with a special emphasis on the utilization of this approach to the diagnosis and treatment of mental disorders. The results show that, even though mental health professional recognize AI, their attitudes toward its use are diverse. This highlights the finding on the weak positive associations between, on the one hand, self-reported familiarity with AI and, on the other hand, the self-rated efficiency of AI: Even familiarity is not enough to fuel confidence in AI. However, other factors such as ethics, cost, and the extent of trust in the AI's capabilities are some of the major factors involved.

By observing the low reliability of the channels, survey items suggest that better tools should be created to measure perceptions of AI. Even in the context of the great potential that AI holds in clinical psychology, the variability of the responses indicates that professionals' worries should be heard and more detailed information about how and when AI can be used in practice and its shortcomings must be given.

Therefore, it can be suggested that AI in its current form has a great potential to improve clinical outcomes in a broad sense to become a meaningful addition to clinical psychology practice if certain activities are practised to fine-tune this concept for work in a clinical environment. Ethical issues, trust, and the ease of implementation of AI will remain critical to the acceptance of such change across the field of mental health.

References

Adesina, A. O., Abuka, O. A., & Adesiyan, J. S. Enhancing adolescent mental health outcomes through integrated technology (AI) innovations in the United States.

Alhuwaydi, A. M. (2024). Exploring the Role of Artificial Intelligence in Mental Healthcare: Current Trends and Future Directions–A Narrative Review for a Comprehensive Insight. *Risk management and healthcare policy*, 1339-1348.

Alimour, S. A., Alnono, E., Aljasmi, S., El Farran, H., Alqawasmi, A. A., Alrabeei, M. M., . . . Aburayya, A. (2024). Original Research Article The Quality Traits of artificial intelligence operations in predicting mental healthcare professionals' perceptions: A case study in the psychotherapy division. *Journal of Autonomous Intelligence, 7*(4).

Alowais, S. A., Alghamdi, S. S., Alsuhebany, N., Alqahtani, T., Alshaya, A. I., Almohareb, S. N., . . . Badreldin, H. A. (2023). Revolutionizing healthcare: the role of artificial intelligence in clinical practice. *BMC Medical Education, 23*(1), 689.

Atzil-Slonim, D., Penedo, J. M. G., & Lutz, W. (2024). Leveraging novel technologies and artificial intelligence to advance practice-oriented research. *Administration and Policy in Mental Health and Mental Health Services Research, 51*(3), 306-317.

Batra, P., & Dave, D. M. (2024). Revolutionizing healthcare platforms: the impact of AI on patient engagement and treatment efficacy. *International Journal of Science and Research (IJSR), 13*(10.21275), 613-624.

Bickman, L. (2020). Improving mental health services: A 50-year journey from randomized experiments to artificial intelligence and precision mental health. *Administration and Policy in Mental Health and Mental Health Services Research, 47*(5), 795-843.

Chakraborty, T., Paul, R., Dey, S., Dey, S., Asif, M., Raj, V., & Ghosh, R. (2024). THERAPY AND MANAGEMENT FOR DEPRESSION AND ANXIETY USING ARTIFICIAL INTELLIGENCE (AI) AND MACHINE LEARNING (ML).

Chinni, B. K., & Manlhiot, C. (2024). Emerging analytical approaches for personalized medicine using machine learning in pediatric and congenital heart disease. *Canadian Journal of Cardiology*.

Dakanalis, A., Wiederhold, B. K., & Riva, G. (2024). Artificial intelligence: a game-changer for mental health care. *Cyberpsychology, Behavior, and Social Networking, 27*(2), 100-104.

de Filippis, R., & Al Foysal, A. (2024). The Fusion of Minds: Navigating the Confluence of AI, ML, and Psychology in the Digital Era. *J Math Techniques Comput Math, 3*(6), 01-09.

Deif, R., & Salama, M. (2021). Depression from a precision mental health perspective: utilizing personalized conceptualizations to guide personalized treatments. *Frontiers in Psychiatry, 12*, 650318.

Deisenhofer, A.-K., Barkham, M., Beierl, E. T., Schwartz, B., Aafjes-van Doorn, K., Beevers, C. G., . . . Brakemeier, E.-L. (2024). Implementing precision methods in personalizing psychological therapies: Barriers and possible ways forward. *Behavior research and therapy, 172*, 104443.

Delanerolle, G., Yang, X., Shetty, S., Raymont, V., Shetty, A., Phiri, P., . . . Shi, J. Q. (2021). Artificial intelligence: a rapid case for advancement in the personalization of gynaecology/obstetric and mental health care. *Women's Health, 17*, 17455065211018111.

Ebert, D. D., Harrer, M., Apolinário-Hagen, J., & Baumeister, H. (2019). Digital interventions for mental disorders: key features, efficacy, and potential for artificial intelligence applications. *Frontiers in Psychiatry: Artificial Intelligence, Precision Medicine, and Other Paradigm Shifts*, 583-627.

Eid, M. M., Yundong, W., Mensah, G. B., & Pudasaini, P. (2023). Treating Psychological Depression Utilising Artificial Intelligence: AI for Precision Medicine-Focus on Procedures. *Mesopotamian Journal of Artificial Intelligence in Healthcare, 2023*, 76-81.

Farooq, A., Ahmed, S. K., Hussein, S., & Qurbani, K. (2024). Artificial intelligence-assisted nursing interventions in psychiatry for oral cancer patients: A concise narrative review. *Oral Oncology Reports*, 100343.

Ghadiri, P., Yaffe, M. J., Adams, A. M., & Abbasgholizadeh-Rahimi, S. (2024). Primary care physicians' perceptions of artificial intelligence systems in the care of adolescents' mental health. *BMC Primary Care, 25*(1), 215.

Gual-Montolio, P., Jaén, I., Martínez-Borba, V., Castilla, D., & Suso-Ribera, C. (2022). Using artificial intelligence to enhance ongoing psychological interventions for emotional problems in real-or close to real-time: a systematic review. *International Journal of Environmental Research and Public Health, 19*(13), 7737.

Hebold Haraldsen, I. R., Hatlestad-Hall, C., Marra, C., Maestú, F., Renvall, H., & Rossini, P. M. (2024). AI-Mind: Revolutionizing Personalized Neurology Through Automated Diagnostics and Advanced Data Management. *Drug Repurposing, 1*(1), 20240005.

Husnain, A., Hussain, H. K., Shahroz, H. M., Ali, M., & Hayat, Y. (2024). Advancements in Health through Artificial Intelligence and Machine Learning: A Focus on Brain Health. *Revista Espanola de Documentacion Cientifica, 18*(01), 100-123.

Hussain, I. (2024). Artificial Intelligence in Neurology: Applications in Diagnosis and Prognosis. *Review Journal of Neurological & Medical Sciences Review, 2*(01), 61-71.

Iqbal, T., Masud, M., Amin, B., Feely, C., Faherty, M., Jones, T., . . . Vazquez, P. (2024). Towards integration of artificial intelligence into medical devices as a real-time recommender system for personalized healthcare: State-of-the-art and prospects. *Health Sciences Review*, 100150.

Jelassi, M., Matteli, K., Khalfallah, H. B., & Demongeot, J. (2024). Enhancing Mental Health Support through Artificial Intelligence: Advances in Speech and Text Analysis within Online Therapy Platforms.

Johnson, K. B., Wei, W. Q., Weeraratne, D., Frisse, M. E., Misulis, K., Rhee, K., . . . Snowdon, J. L. (2021). Precision medicine, AI, and the future of personalized health care. *Clinical and translational science, 14*(1), 86-93.

Jyoti, A., Yadav, V., Pal, A., Rahul, M., & Jha, S. K. (2024). The Transformative Impact of AI and Machine Learning on Human Psychology. *Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), 17*(2), 31-39.

Khalifa, M., & Albadawy, M. (2024). Artificial Intelligence for Clinical Prediction: Exploring Key Domains and Essential Functions. *Computer Methods and Programs in Biomedicine Update*, 100148.

KHARE, M., ACHARYA, S., SHUKLA, S., & SACHDEV, A. (2024). Utilizing Artificial Intelligence (AI) in the Diagnosis of Psychiatric Disorders: A Narrative Review. *Journal of Clinical & Diagnostic Research, 18*(4).

Lee, E. E., Torous, J., De Choudhury, M., Depp, C. A., Graham, S. A., Kim, H.-C., . . . Jeste, D. V. (2021). Artificial intelligence for mental health care: clinical applications, barriers, facilitators, and artificial wisdom. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 6*(9), 856-864.

Lin, E., Lin, C.-H., & Lane, H.-Y. (2020). Precision psychiatry applications with pharmacogenomics: artificial intelligence and machine learning approaches. *International journal of molecular sciences*, *21*(3), 969.

Malgaroli, M., Hull, T. D., & Schultebraucks, K. (2021). Digital health and artificial intelligence for PTSD: improving treatment delivery through personalization. *Psychiatric Annals*, *51*(1), 21-26.

Mathin, S., Chandra, D. S., Sunkireddy, A. R., Varma, B., Hariharan, S., & Kukreja, V. (2024). *Personalized Mental Health Analysis Using Artificial Intelligence Approach.* Paper presented at the 2024 International Conference on Advances in Data Engineering and Intelligent Computing Systems (ADICS).

Mazzolenis, M. V., Mourra, G. N., Moreau, S., Mazzolenis, M. E., Cerda, I. H., Vega, J., . . . Thérond, A. (2024). The Role of Virtual Reality and Artificial Intelligence in Cognitive Pain Therapy: A Narrative Review. *Current Pain and Headache Reports*, 1-12.

Millan De Lange, C. A., Molinares Brito, C. M., Dasuki Garcia, K. H., & Baena Valencia, S. (2024). PLANNING OF PERSONALIZED PSYCHOLOGICAL INTERVENTION IN VICTIMS OF THE ARMED CONFLICT IN COLOMBIA THROUGH ARTIFICIAL INTELLIGENCE. *Pesquisa Operacional*, *44*, e279900.

Monaco, F., Vignapiano, A., Piacente, M., Farina, F., Pagano, C., Marenna, A., . . . Prisco, V. (2024). Innova4Health: an integrated approach for prevention of recurrence and personalized treatment of Major Depressive Disorder. *Frontiers in artificial intelligence*, *7*, 1366055.

Monaco, F., Vignapiano, A., Piacente, M., Pagano, C., Mancuso, C., Steardo Jr, L., . . . Leo, S. (2024). An advanced Artificial Intelligence platform for a personalized treatment of Eating Disorders. *Frontiers in psychiatry*, *15*, 1414439.

Nashwan, A. J., Gharib, S., Alhadidi, M., El-Ashry, A. M., Alamgir, A., Al-Hassan, M., . . . Abufarsakh, B. (2023). Harnessing artificial intelligence: strategies for mental health nurses in optimizing psychiatric patient care. *Issues in Mental Health Nursing*, *44*(10), 1020-1034.

Ng, J. Y., Cramer, H., Lee, M. S., & Moher, D. (2024). Traditional, complementary, and integrative medicine and artificial intelligence: Novel opportunities in healthcare. *Integrative Medicine Research*, 101024.

Olawade, D. B., Wada, O. Z., Odetayo, A., David-Olawade, A. C., Asaolu, F., & Eberhardt, J. (2024). Enhancing mental health with Artificial Intelligence: Current trends and prospects. *Journal of Medicine, Surgery, and Public Health*, 100099.

Oyeniyi, J., & Oluwaseyi, P. Emerging Trends in AI-Powered Medical Imaging: Enhancing Diagnostic Accuracy and Treatment Decisions.

Park, Y., Park, S., & Lee, M. (2024). Effectiveness of artificial intelligence in detecting and managing depressive disorders: Systematic literature review. *Journal of Affective Disorders*.

Rahmah, L., Wianti, S., Herdalisah, W., Purwoko, R. Y., & Sari, F. E. (2024). The Impact of AI-Powered Diagnostics, Personalized Medicine, and Digital Health Records on Patient Care Quality. *The Journal of Academic Science*, *1*(2), 118-130.

Ramírez, L. Á. (2023). Artificial Intelligence in Psychological Diagnosis and Intervention. *LatIA*, *1*, 26-26.

Salah, M., Abdelfattah, F., & Al Halbusi, H. (2024). The Good, the Bad, and the GPT: Reviewing the Impact of Generative Artificial Intelligence on Psychology. *Current Opinion in Psychology*, 101872.

Schwartz, B., Cohen, Z. D., Rubel, J. A., Zimmermann, D., Wittmann, W. W., & Lutz, W. (2021). Personalized treatment selection in routine care: Integrating machine learning and statistical algorithms to recommend cognitive behavioural or psychodynamic therapy. *Psychotherapy Research, 31*(1), 33-51.

Sezgin, E., & McKay, I. (2024). Behavioural health and generative AI: a perspective on future of therapies and patient care. *npj Mental Health Research, 3*(1), 25.

Shah, V. (2022). AI in Mental Health: Predictive Analytics and Intervention Strategies. *Journal Environmental Sciences And Technology, 1*(2), 55-74.

Song, H. (2024). Application of big data and artificial intelligence in mental health prediction and intervention. *Interdisciplinary Humanities and Communication Studies, 1*(6).

Stein, D. J., Shoptaw, S. J., Vigo, D. V., Lund, C., Cuijpers, P., Bantjes, J., . . . Maj, M. (2022). Psychiatric diagnosis and treatment in the 21st century: paradigm shifts versus incremental integration. *World Psychiatry, 21*(3), 393-414.

Sujana, D. S., & Augustine, D. P. (2024). Practical Benefits of Using AI for More Accurate Forecasting in Mental Health Care. In *Artificial Intelligence in Forecasting* (pp. 242-264): CRC Press.

Sun, J., Dong, Q.-X., Wang, S.-W., Zheng, Y.-B., Liu, X.-X., Lu, T.-S., . . . Lu, L. (2023). Artificial intelligence in psychiatry research, diagnosis, and therapy. *Asian Journal of Psychiatry*, 103705.

Tan, M., Xiao, Y., Jing, F., Xie, Y., Lu, S., Xiang, M., & Ren, H. (2024). Evaluating machine learning-enabled and multimodal data-driven exercise prescriptions for mental health: a randomized controlled trial protocol. *Frontiers in psychiatry, 15*, 1352420.

Turchi, T., Prencipe, G., Malizia, A., Filogna, S., Latrofa, F., & Sgandurra, G. (2024). Pathways to democratized healthcare: Envisioning human-centred AI-as-a-service for customized diagnosis and rehabilitation. *Artificial Intelligence in Medicine, 151*, 102850.

Veneziani, I., Marra, A., Formica, C., Grimaldi, A., Marino, S., Quartarone, A., & Maresca, G. (2024). Applications of artificial intelligence in the neuropsychological assessment of dementia: A systematic review. *Journal of Personalized Medicine, 14*(1), 113.

Wang, W., Chen, J., Hu, Y., Liu, H., Chen, J., Gadekallu, T. R., . . . Hu, X. (2024). Integration of Artificial Intelligence and Wearable Internet of Things for Mental Health Detection. *International Journal of Cognitive Computing in Engineering, 5*, 307-315.

Washington, P., Park, N., Srivastava, P., Voss, C., Kline, A., Varma, M., . . . Patnaik, R. (2020). Data-driven diagnostics and the potential of mobile artificial intelligence for digital therapeutic phenotyping in computational psychiatry. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 5*(8), 759-769.

Wibowo, A. P., Taruk, M., Tarigan, T. E., & Habibi, M. (2024). Improving Mental Health Diagnostics through Advanced Algorithmic Models: A Case Study of Bipolar and Depressive Disorders. *Indonesian Journal of Data and Science, 5*(1), 8-14.

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Zafar, F., Alam, L. F., Vivas, R. R., Wang, J., Whei, S. J., Mehmood, S., . . . Nazir, Z. (2024). The Role of Artificial Intelligence in Identifying Depression and Anxiety: A Comprehensive Literature Review. *Cureus*, *16*(3).

Zhang, Y., Tan, W., & Lee, E. J. (2024). Consumers' responses to personalized service from medical artificial intelligence and human doctors. *Psychology & Marketing*, *41*(1), 118-133.

Zhong, W., Luo, J., & Zhang, H. (2024). The therapeutic effectiveness of artificial intelligence-based chatbots in alleviation of depressive and anxiety symptoms in short-course treatments: A systematic review and meta-analysis. *Journal of Affective Disorders*.

Zhou, S., Zhao, J., & Zhang, L. (2022). Application of artificial intelligence on psychological interventions and diagnosis: an overview. *Frontiers in Psychiatry*, *13*, 811665.