A STUDY ON AI POWERED MENTAL HEALTH DIAGNOSIS

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ABSTRACT

AI-powered mental health diagnosis refers to the use of artificial intelligence technologies to assess, identify, and support mental health conditions. Leveraging machine learning, natural language processing, and data analysis, these systems analyze patterns in speech, text, behavior, and physiological data to detect signs of mental health issues like anxiety, depression, or stress. By offering early detection, personalized insights, and scalability, AI tools complement traditional mental health care, enabling quicker interventions and improved accessibility, especially in underserved areas. The research methods discussed in this study are empirical research. This study is done by a convenient sampling method. The total number of responses is 206 samples from people aged between teenagers and adults. I collected samples within the surroundings of Chennai and not beyond. The independent variables are gender, age, educational qualification, employment status and marital status. The dependent variables are factors influencing individuals to adopt AI based mental health diagnosis, ethical challenges caused by AI (data privacy and security, lack of transparency, misuse of AI for surveillance, emotional disconnect), AI is effective to predict suicidal risk or mental deterioration, rate scale on effectiveness of AI powered tools to provide accurate mental health diagnosis, AI to old make mental health care accessible or not. The statistical tools used are simple bar graph, clustered bar graph, cross tabulation, one sample t test, and Anova.

KEYWORDS

Mental health, AI, Issues, Diagnosis, Challenges.

INTRODUCTION

AI-powered mental health diagnosis represents a significant breakthrough in the field of mental health care, leveraging advanced algorithms and data analytics to detect, monitor, and predict mental health conditions. These tools analyze vast amounts of data from various sources, such as speech patterns, facial expressions, social media activity, and wearable devices, to identify signs of stress, anxiety, depression, and other mental health issues. By providing timely and accurate insights, AI has the potential to bridge gaps in traditional mental health care, offering scalable and accessible solutions for individuals and communities that may lack access to professional care. AI-powered mental health diagnosis also raises critical questions about ethics, effectiveness, and accessibility. Concerns such as data privacy, transparency, and the potential for misuse of AI highlight the need for stringent regulatory frameworks. Additionally, while AI can support early detection and treatment, it cannot fully replace the empathetic, human-centric approach required in mental health care. As the technology evolves, it presents an opportunity to complement traditional methods and address the growing demand for mental health services in an increasingly digital world.

EVOLUTION

The evolution of AI-powered mental health diagnosis has progressed from simple rule-based systems to sophisticated, data-driven technologies. Early models relied on predefined criteria, but advancements in machine learning and natural language processing enabled the analysis of complex patterns in speech, text, and behavior. The integration of wearable devices and real-time sensor data further enhanced the ability to monitor mental health dynamically. Deep learning now facilitates multimodal analysis, combining inputs like facial expressions and physiological data for accurate assessments. With growing emphasis on ethical practices and accessibility, AI tools are becoming integral to personalized and preventive mental health care.

The Indian government has launched several initiatives to promote mental health awareness and provide accessible mental health care, including leveraging technology and AI. Key initiatives include:

- National Mental Health Programme (NMHP): Established in 1982, this program aims to provide affordable and accessible mental health care, reduce stigma, and integrate mental health services with primary health care.

- KIRAN Helpline: Launched in 2020, this 24/7 helpline (1800-599-0019) offers support for individuals experiencing mental health issues, with services in multiple Indian languages.

- MANAS (Mental Health and Normalcy Augmentation System): An AI-based mobile app launched in 2021 by the Ministry of Science and Technology to promote mental well-being by offering professional mental health support and self-help resources.

- National Tele-Mental Health Program (NTMHP): Announced in the Union Budget 2022, this program uses a network of 23 tele-mental health centers to provide remote consultations, especially for people in rural and underserved areas.

- Mental Health Integration in Ayushman Bharat: Mental health services are being integrated into Ayushman Bharat Health and Wellness Centres to ensure holistic primary health care for citizens.

- Digital Health Mission: The government is working toward a comprehensive digital health ecosystem, which includes mental health services, to make care accessible and data-driven.

FACTORS AFFECTING

- **Data Availability and Quality:** AI systems require large datasets for accurate predictions, but mental health data is often scarce, fragmented, or unstandardized.

- **Cultural and Linguistic Diversity:** India's varied languages and cultural attitudes toward mental health pose challenges in developing AI tools that cater to diverse populations.

- **Stigma and Awareness:** Mental health stigma can prevent individuals from seeking help or engaging with AI-powered tools, reducing their impact.

- **Infrastructure and Accessibility:** Limited internet access, especially in rural areas, and the digital divide can hinder the widespread use of AI solutions.

- **Ethical Concerns:** Issues like data privacy, algorithmic bias, and misuse of sensitive information can affect trust and adoption of AI in mental health.

- **Cost and Scalability:** While AI can reduce costs in the long term, initial development and deployment expenses can be significant, limiting its reach.

- **Integration with Human-Led Care:** AI tools must complement, not replace, human mental health professionals to ensure effective care and avoid over-reliance on technology.

- **Regulatory and Policy Support:** Clear guidelines and government support are essential for ensuring the ethical and effective implementation of AI in mental health.

TRENDS

Integration with Wearables and IoT: Wearable devices and Internet of Things (IoT) technologies are increasingly being used to collect real-time data, such as heart rate, sleep patterns, and activity levels, to monitor mental health dynamically.

- **Rise of AI-Powered Chatbots:** AI chatbots like Wysa, Woebot, and Replika are becoming popular as virtual companions that provide conversational support, detect early signs of mental health issues, and offer coping strategies.

- **Multimodal Data Analysis:** Modern AI systems combine multiple data sources—speech, facial expressions, text, and physiological data—to create comprehensive mental health assessments.

- **Personalized and Predictive Care:** AI is being used to tailor interventions to individual needs and predict future mental health risks, enabling early preventive measures.

- **Focus on Accessibility:** Governments and organizations are emphasizing the development of low-cost, multilingual, and culturally sensitive AI tools to increase mental health care accessibility in underserved regions.

- **Ethical AI and Data Privacy:** As AI adoption grows, there is a stronger focus on ensuring ethical practices, minimizing biases, and safeguarding user data.

- Hybrid Care Models: AI is increasingly being integrated with traditional therapy, creating hybrid care models where technology supports human therapists for better outcomes.

- Mental Health in Workplaces: Companies are adopting AI tools to monitor employee well-being, detect burnout, and provide mental health resources as part of corporate wellness programs.

- Research and Collaboration: Collaborative efforts between governments, tech companies, and healthcare providers are driving innovation and scaling up AI-powered mental health solutions.

COMPARISON WITH OTHER COUNTRIES

- **India vs United States:** India is in the early stages, focusing on scaling affordable AI tools, while the U.S. leads globally in advanced AI innovations. India's government actively drives initiatives like MANAS and tele-mental health programs. The U.S. relies more on private-sector advancements with moderate government involvement. India emphasizes accessibility and affordability for underserved populations, whereas the U.S. prioritizes personalization, hybrid care models, and high-tech solutions. India faces infrastructure gaps and stigma, while the U.S. struggles with high healthcare costs and privacy concerns.

- **India vs China:** Both countries are rapidly expanding, but China's AI development is more advanced due to extensive investments and big data capabilities. Both governments are heavily involved, but China integrates AI into education and public health with a faster pace. India focuses on multilingual and culturally sensitive tools for rural populations. China emphasizes big data, real-time monitoring, and scalable solutions. India faces digital literacy issues and infrastructure limitations, while China deals with data privacy concerns and cultural stigma.

- **India vs United Kingdom:** India is emerging in AI mental health care, while the UK integrates AI tools into its well-established NHS systems. India's government leads efforts like tele-mental health services, while the UK ensures ethical AI development and public system integration through NHS Digital. India prioritizes accessibility and cost-effective solutions, while the UK emphasizes ethical AI, data privacy, and hybrid care

models. India struggles with rural access and mental health stigma, whereas the UK faces resistance to AI replacing traditional therapy and scalability issues.

AIM

The main aim of this research is to analyze public perceptions, ethical concerns, and demographic factors influencing the adoption and effectiveness of AI-based tools for mental health diagnosis. The study seeks to identify barriers, ethical challenges, and potential strategies to improve accessibility, transparency, and trust in AI-driven mental health solutions.

OBJECTIVE OF THE STUDY

- To analyse whether AI is effective to predict suicide risk or mental deterioration.
- To determine the factors influencing individuals to adopt AI based mental health diagnosis.
- To study the preferences of the public for specific features in AI mental health tools.
- To analyse the ethical challenges faced by AI.

LITERATURE REVIEW

M.S Supriya, Antham Aniket (2024), In this paper, a test strategy based on freely accessible Reddit information to create a mental wellbeing conclusion framework has been proposed. Common dialect preparing (NLP) procedures are misused to offer assistance machines to get social media posts from Reddit, and profound learning and machine learning models are prepared to classify the social media posts into one of taking after four mental illnesses: misery, uneasiness, schizophrenia and bipolar. **Alastair C. Van Heerden (2023),** This paper addresses treatment crevices in which to depend on nonspecialists (eg, lay wellbeing laborers, instructors, social laborers, and peer coaches) to give mental wellbeing administrations. In spite of the fact that this approach can be viable, current methodologies request considerable preparing and supervision. They moreover require profoundly standardized intercessions, which may incomprehensibly restrain more person-centered medications. **Supra Wimbarti (2024),** This article analyzes the risks related with depending on AI for self-diagnosis in mental wellbeing, highlighting the imperatives and conceivable antagonistic results that can emerge from such hones. It dives into the moral, mental, and social suggestions, underscoring the imperative part of mental wellbeing experts, counting clinicians, therapists, and nursing pros, in giving proficient help and guidance. **David B. Olawade, Oijma Z. Wada (2024),** The incorporation criteria were papers distributed in peer-reviewed diaries, conference procedures, or legitimate online databases, papers that particularly center on the application of AI in the field of mental

healthcare, and survey papers that offer a comprehensive diagram, investigation, or integration of existing writing distributed in the English dialect. Current patterns uncover AI's transformative potential, with applications such as the early discovery of mental wellbeing disarranges, personalized treatment plans, and AI-driven virtual therapists. **Rahul Negi (2024),** Mental wellbeing has seen critical headways in later a long time, but challenges stay, especially for ladies. In spite of the tall rates of mental wellbeing disarranged among ladies, numerous still confront boundaries to getting to quality care. Machine learning (ML) and fake insights (AI) have the capacity to alter the way mental wellbeing is analyzed, treated, and overseen. **Yang Cheng, Hua Jiang (2020),** This survey overviewed 1,114 US members who ever utilized chatbot administrations from best healthcare companies. Suggestions of the comes about upgrading hypothetical discourses on how fake insights has formed individuals' inspirations, communicative activity and engagement conduct to treat mental wellbeing issues. This also benefits experts who need to learn more about chatbots for mental healthcare, emergency administration and client engagement. **Zoha Khawaja (2023),** Counterfeit insights (AI)-powered chatbots have the potential to considerably increase reasonable and compelling mental wellbeing administrations by supplementing the work of clinicians. Their 24/7 accessibility and openness through a versatile phone permit people to offer assistance at whatever point and wherever required, overcoming monetary and calculated boundaries. In spite of the fact that mental AI chatbots have the capacity to make critical changes in giving mental wellbeing care administrations, they do not come without moral and specialized Challenges. **Lingala Thirupathi, Vineetha Kaashipaka (2024),** The integration of Counterfeit Insights (AI) and the Web of Things (IoT) is revolutionizing mental wellbeing care by changing determination, treatment, and progressing bolster for people with mental wellbeing conditions. These innovations upgrade the exactness, availability, and personalization of care through AI-powered symptomatic instruments and IoT-enabled wearable gadgets, which offer real-time observing and information examination for early discovery of mental wellbeing issues. **Sarah Carr (2019),** There is an accentuation on organizations between wellbeing and care suppliers, their patients, benefit clients and staff. But what might this cruel for individuals with mental wellbeing issues who are patients and benefit clients? Whereas AI shows up to be valuable for the location and treatment of certain physical wellbeing conditions, such as sepsis. **Bauer, S., & Moessner, M. (2012),** The point of this paper is to give an outline on how data and communication innovations may be utilized (a) to progress our understanding of sickness advancement and recuperation through longitudinal technology-enhanced appraisal of side effects and behaviors (e.g. result checking and biological fleeting evaluation) and (b) to

optimize care for mental disarranged by joining such checking evaluations in particular intercessions. **Dennis Becker, Ward van Breda (2018),** This paper points to bridge the authentic and conceptual holes between the removed inquire about spaces included in this unused collaborative inquiry by giving a conceptual demonstration of common inquire about objectives. Later advancements in versatile innovation, sensor gadgets, and fake insights have made unused openings for mental wellbeing care inquire about. **Nikolaos Koutsouleris (2022),** In this paper, it investigates the guarantees and challenges of fake insights (AI)-based accuracy medication instruments in mental wellbeing care from clinical, moral, and administrative viewpoints. The real-world execution of these instruments is progressively considered the prime arrangement for key issues in mental wellbeing, such as deferred, wrong, and wasteful care conveyance. Essentially, machine-learning-based experimental procedures are getting to be commonplace in psychiatric inquiry about their potential to satisfactorily deconstruct the biopsychosocial complexity of mental wellbeing clutters, and subsequently to move forward nosology of prognostic and preventive ideal models. **Mills C, & Hilberg E (2018),** This paper focuses on an underexplored relationship of fortification between forms of measurement and digitisation in the development of mental wellbeing as amiable to innovative mediation, in India. Progressively, innovation is utilized to collect mental wellbeing information, to analyze mental wellbeing issues, and as a course of mental wellbeing intercession and clinical administration. **Thakkar A, Gupta A & De Sou A (2024),** The paper surveys the whole range of Manufactured Insights (AI) in mental wellbeing and its positive part in mental wellbeing. AI has a tremendous number of guarantees to offer mental wellbeing care and this paper looks at numerous aspects of the same. The part of AI in positive enthusiastic direction and its affect in schizophrenia, extreme introvertedness range disarranged and disposition clutters is too highlighted. **Singh, Vipul (2024),** The shame related with mental disarranges comes about in deferred help-seeking, decreased get to wellbeing administrations, problematic treatment, destitute results, and an expanded chance of individuals' human rights infringement. The genuine mental wellbeing burden is ostensibly distant higher; accepting the cover between psychiatric and neurological disarranged, mental wellbeing disarranged (MHDs) account for 32.4% of add up to a long time of well being displaced due to inability (YLDs). Sadness, uneasiness disarranged, bipolar clutter, schizophrenia and other psychoses, dementia, substance utilize disarranged, attention-deficit/hyperactivity clutter, and formative disarranged, counting extreme introvertedness, are the driving donors to mental wellbeing horribleness. **Singh, S., Gambill, J (2024),** Neuropsychiatric clutters (NPDs) pose a significant burden on the healthcare framework. The major challenge in diagnosing NPDs is the subjective appraisal

by the doctor which can lead to wrong and deferred determination. Later thoughts have portrayed that the integration of manufactured insights (AI) in neuropsychiatry might possibly revolutionize the field by absolutely diagnosing complex neurological and mental wellbeing disorders in a convenient design and giving individualized administration methodologies. **Das, K. P., & Gavade, P. (2024),** Uneasiness disarranged are psychiatric conditions characterized by drawn out and generalized uneasiness experienced by people in reaction to different occasions or circumstances. At show, uneasiness clutters are respected as the most far reaching psychiatric disarranged all inclusive. Pharmaceutical and diverse sorts of psychotherapies are utilized as the essential restorative modalities in clinical hone for the treatment of uneasiness disorders. **Agarwal, J., & Sharma, S. (2024),** In this regard, a Convolutional Neural organize (CNN) based cognitive computer-based demonstration for identifying children's mental wellbeing based on discourse signals and profound learning. Programmed children's mental wellbeing location is creating an interesting thought about theme since communication between frameworks and people is requested to happen more regularly. **Bondre, A., Pathare, S., & Naslund, J. A. (2021),** The Mental Wellbeing Care Act 2017 in India speaks to a point of interest enactment pushing for the rights, respect, and independence of people confronting the challenges of mental sickness and points to change the conveyance of mental wellbeing care over the country. The unused law notices computerized information security; however few ponders have centered on this to date. This has contributed to its moo prioritization in developing advanced mental wellbeing programs in India. **PANDITA P (2024),** Areas of information science having suggestions in agribusiness incorporates adherent and Unmanned Airborne Vehicle based information procurement, Web of Things (loT), Fake Insights (machine and profound learning) and huge information analytics. Agriculturists presently have get to to cutting-edge information and analytics instruments since of Al, which will advance way better cultivating, boost efficiency, and minimize squander in the generation of nourishment and biofuel whereas restricting unfavorable natural impacts.

METHODOLOGY

The research methods discussed in this study are empirical research. This study is done by a convenient sampling method. The total number of responses is 206 samples from people aged between teenagers and adults. I collected samples within the surroundings of Chennai and not beyond. The independent variables are gender, age, educational qualification, employment status and marital status. The dependent variables are factors influencing individuals to adopt
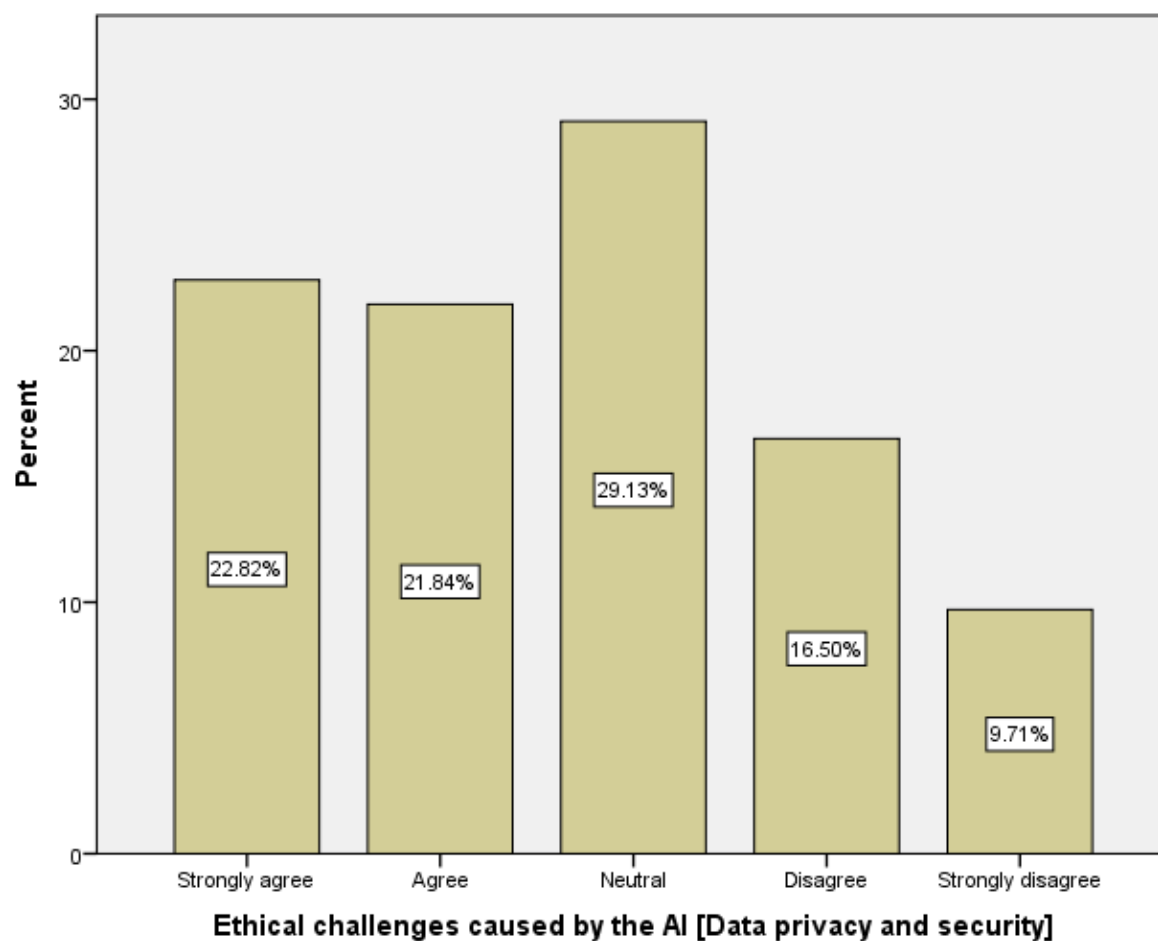
AI based mental health diagnosis, ethical challenges caused by AI (data privacy and security, lack of transparency, misuse of AI for surveillance, emotional disconnect), AI is effective to predict suicidal risk or mental deterioration, rate scale on effectiveness of AI powered tools to provide accurate mental health diagnosis, AI to old make mental health care accessible or not. The statistical tools used are simple bar graph, clustered bar graph, cross tabulation, one sample t test, and Anova.
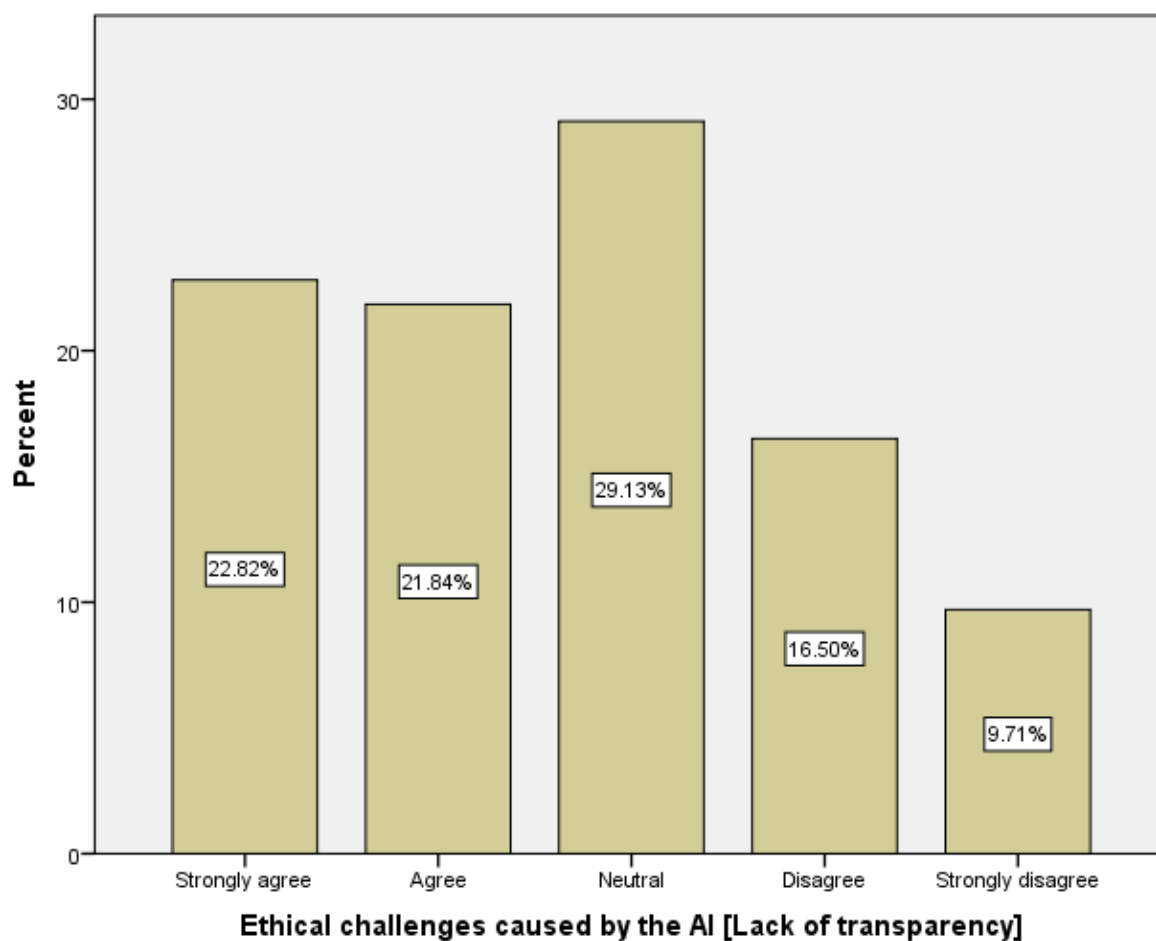
DATA ANALYSIS

FIGURE 1:
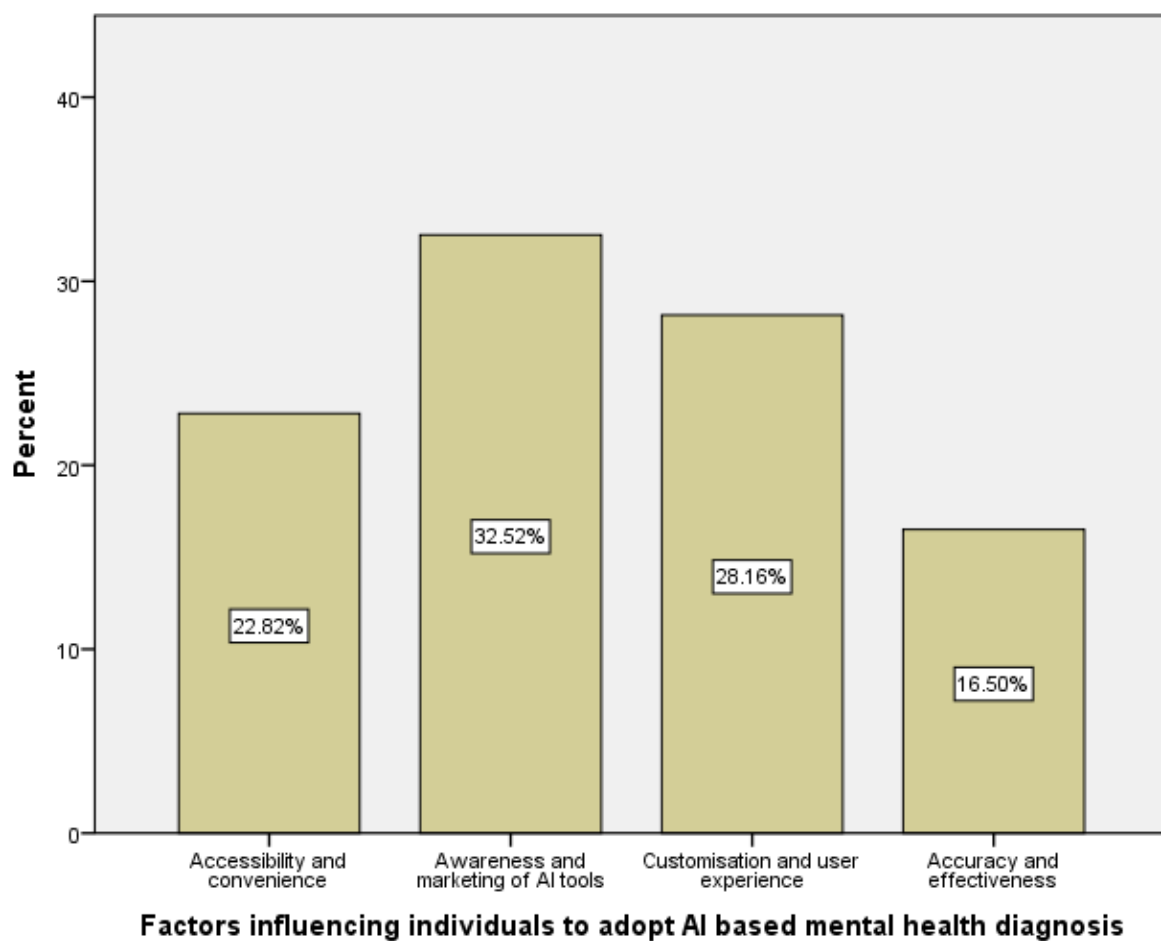
Factors influencing individuals to adopt AI based mental health diagnosis

LEGEND: The graph represents the factors influencing individuals to adopt AI based mental health diagnosis or not.
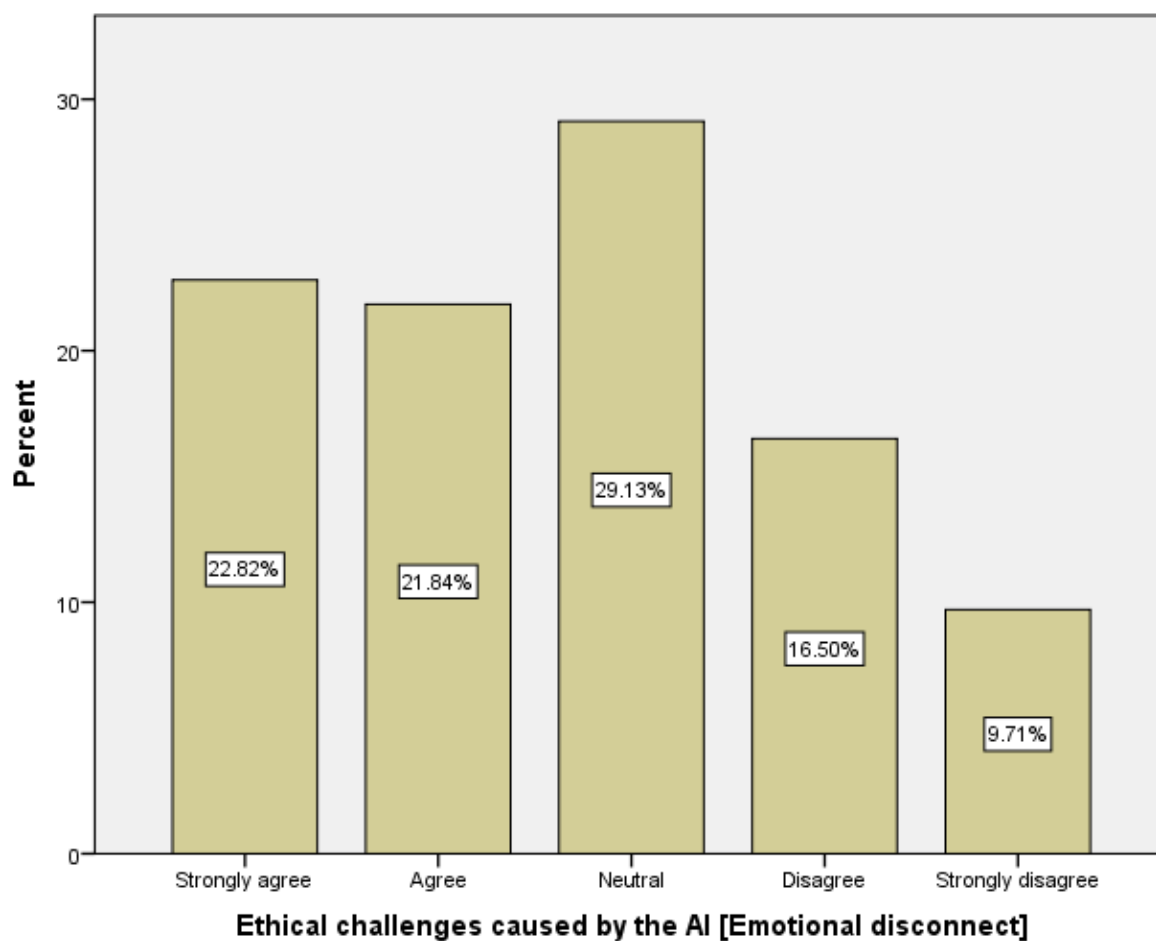
FIGURE 2:

LEGEND: The graph represents data privacy and security as the ethical challenges caused by the AI.

FIGURE 3:

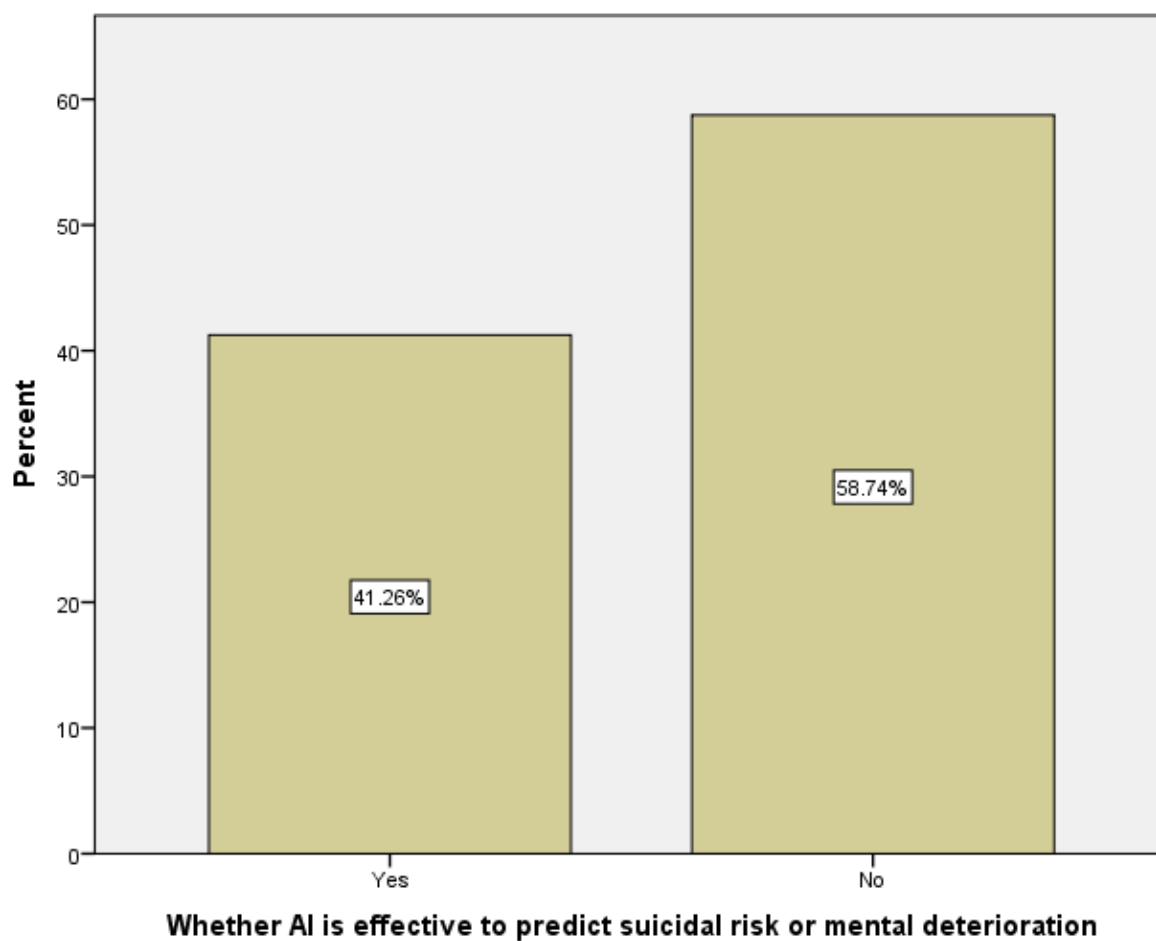**LEGEND:** The graph represents lack of transparency as the ethical challenges caused by the AI.

FIGURE 4:
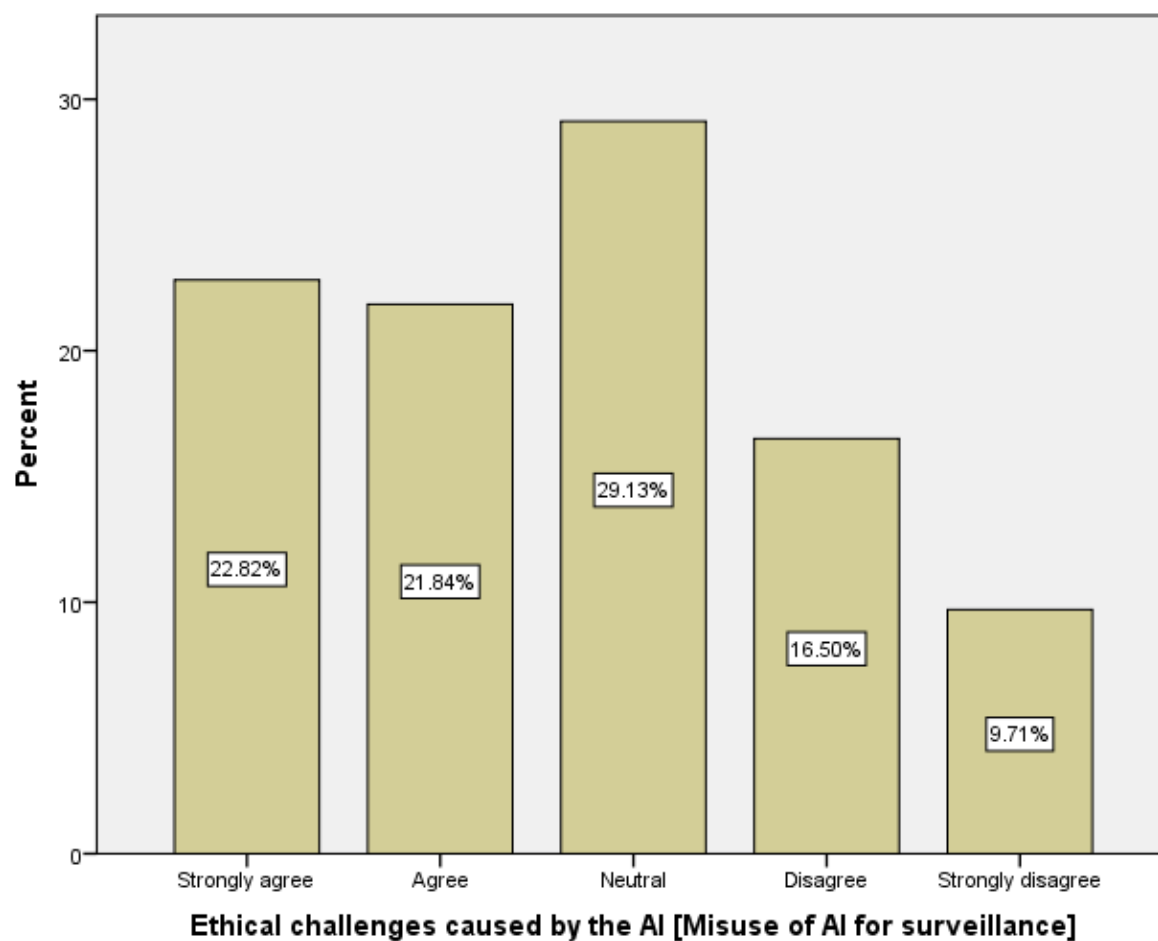
LEGEND: The graph represents misuse of AI for surveillance as one of the ethical challenges caused by the AI.
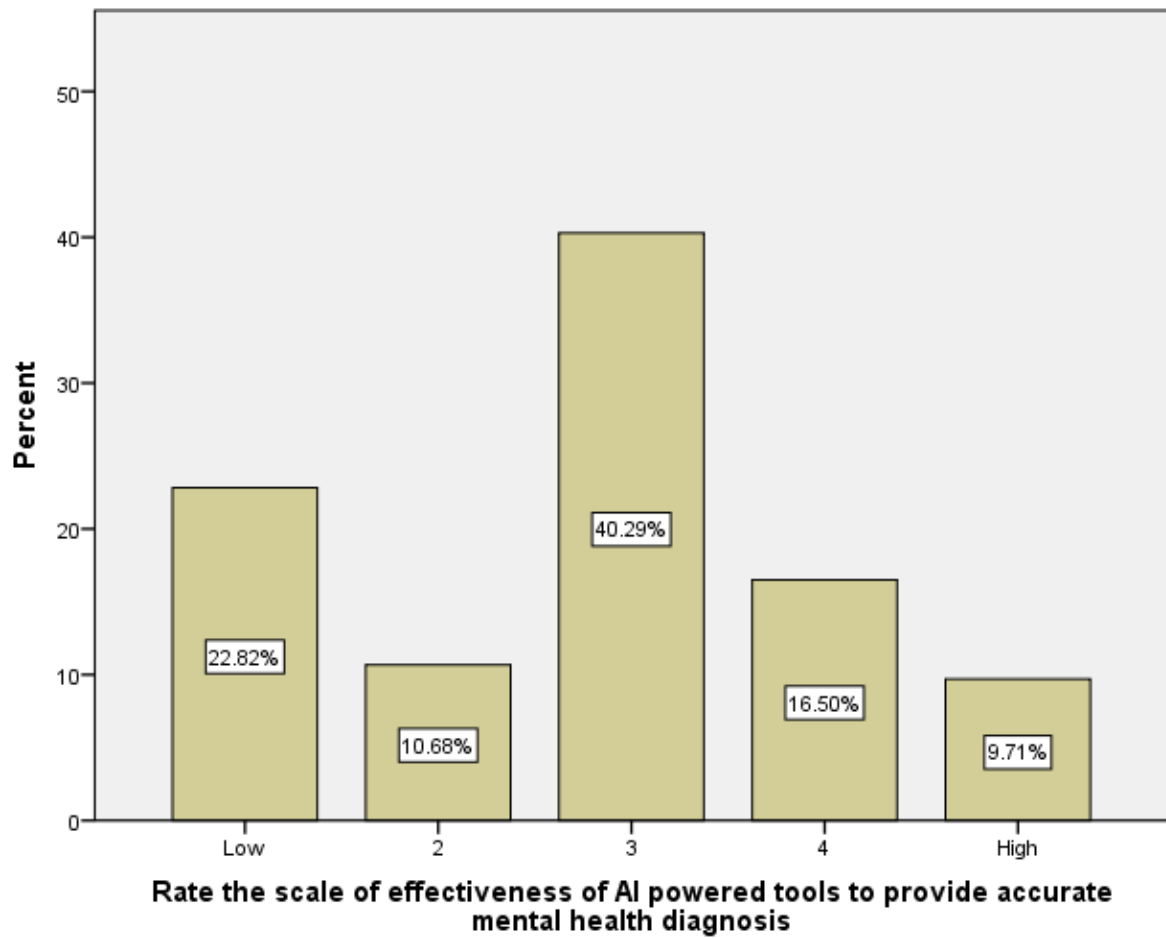
FIGURE 5:

LEGEND: The graph represents emotional disconnect as one of the ethical challenges caused by the AI.
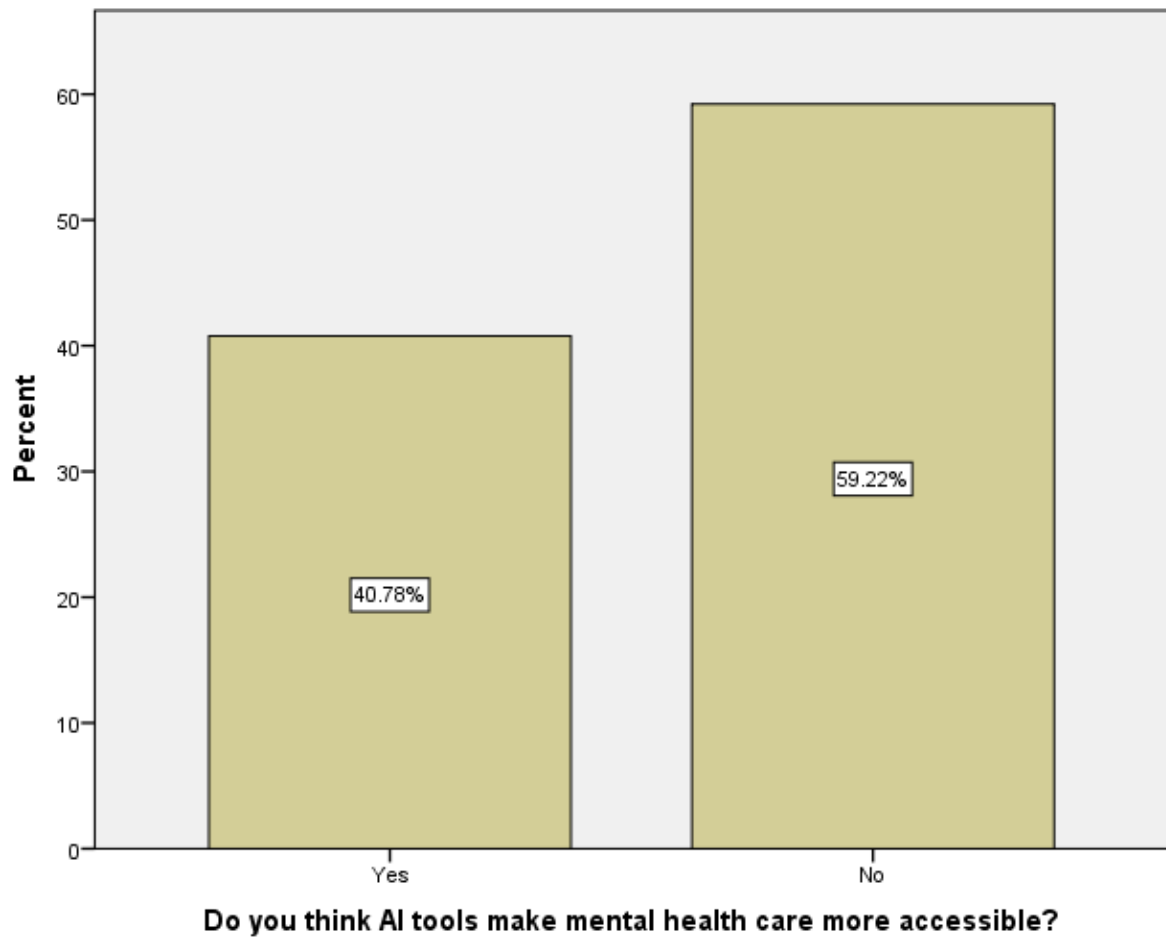
FIGURE 6:

LEGEND: The graph represents whether AI is effective to predict suicidal risk or mental deterioration?
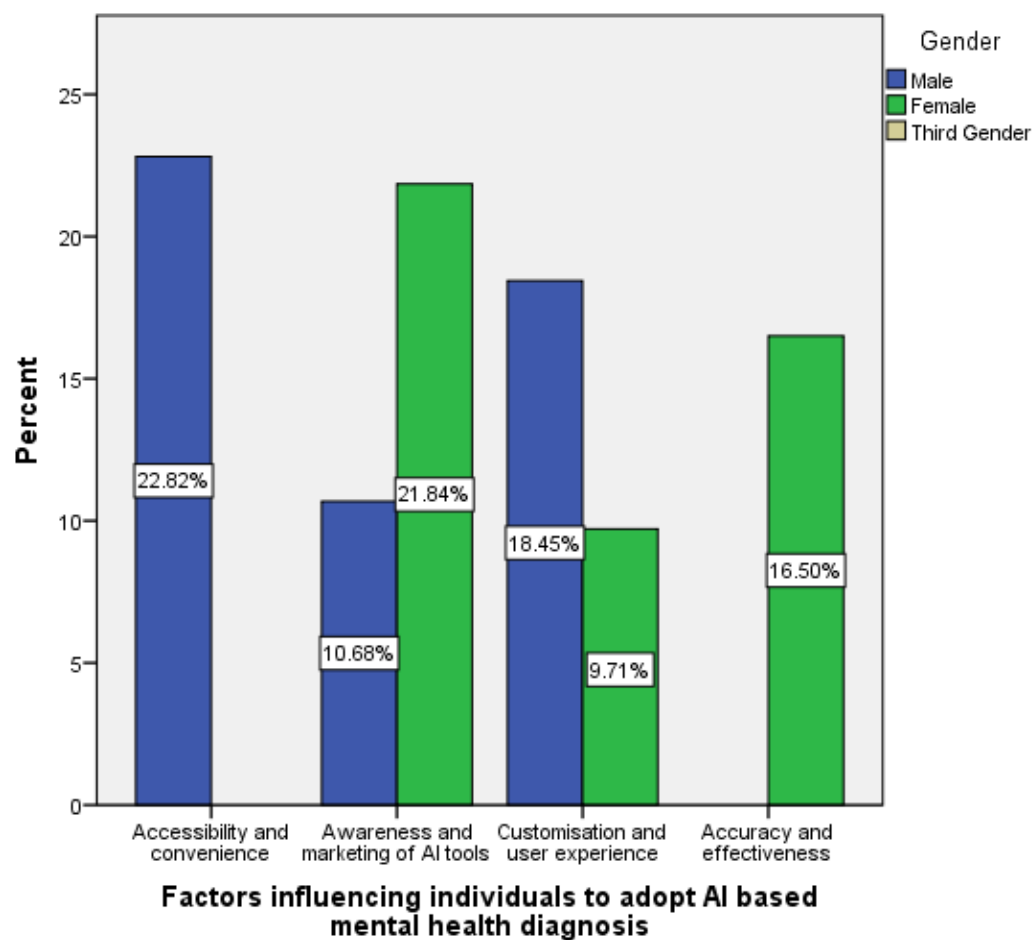
FIGURE 7:

LEGEND: The graph represents the rate scale of effectiveness of the AI powered tools to provide accurate mental health diagnosis.
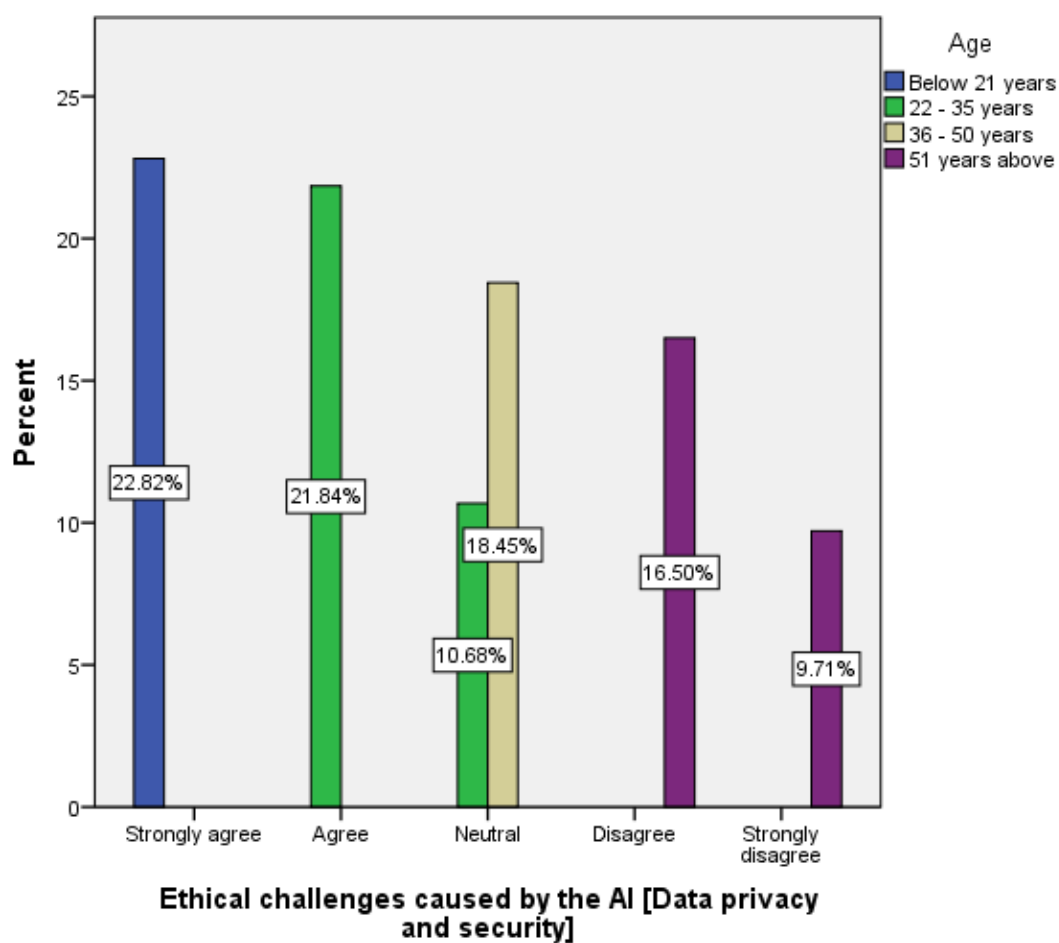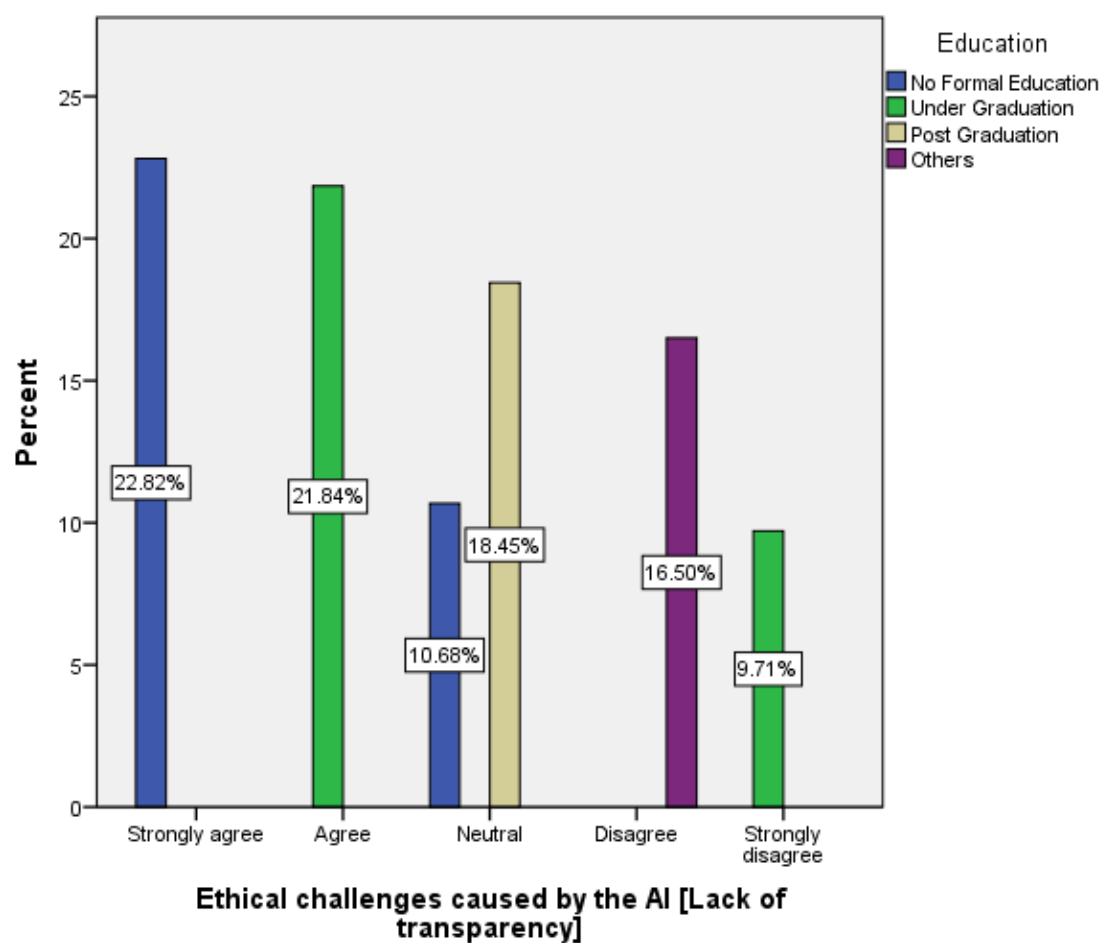
FIGURE 8:

LEGEND: **The graph represents whether AI tools make mental health care more accessible or not?**
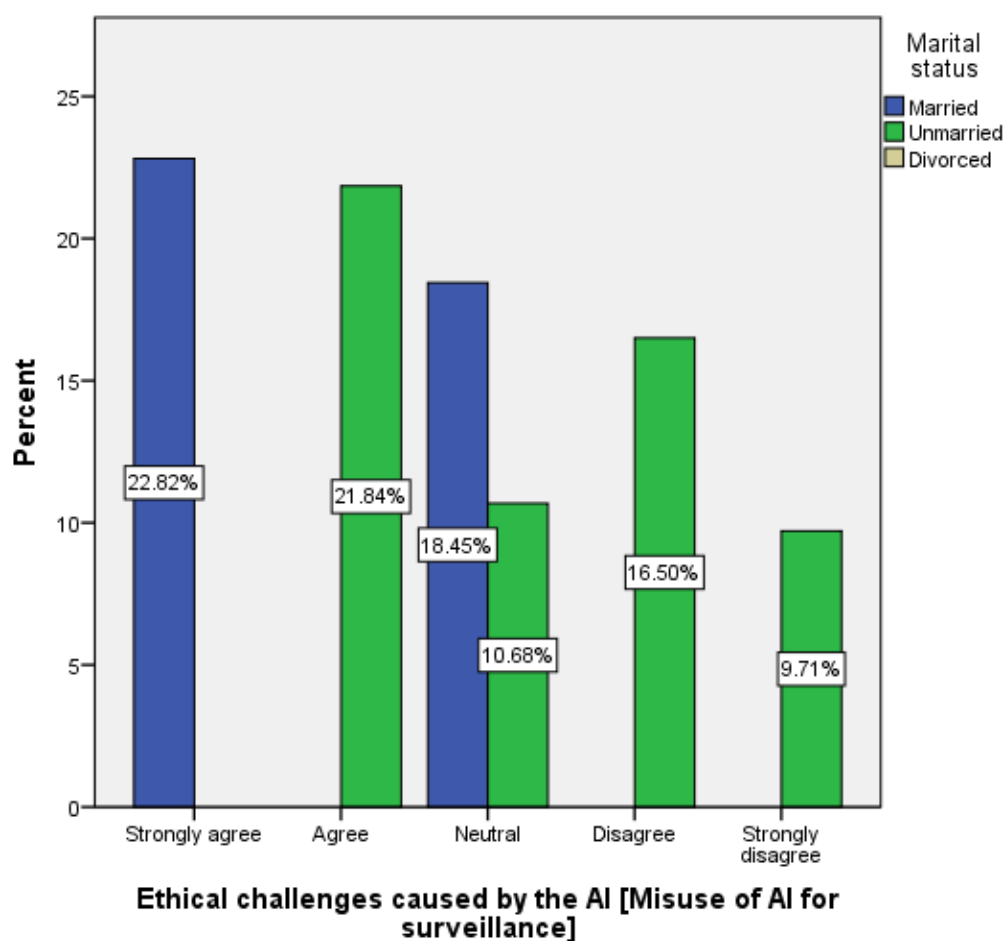
FIGURE 9:

LEGEND: **The graph represents the factors influencing individuals to adopt AI based mental health diagnosis or not compared with the gender of the respondents.**

FIGURE 10:

LEGEND: The graph represents data privacy and security as the ethical challenges caused by the AI compared with the age of the respondents.

FIGURE 11:

LEGEND: The graph represents lack of transparency as the ethical challenges caused by the AI compared with the educational qualification of the respondents.

FIGURE 12:

LEGEND: The graph represents misuse of AI for surveillance as one of the ethical challenges caused by the AI compared with the marital status of the respondents.
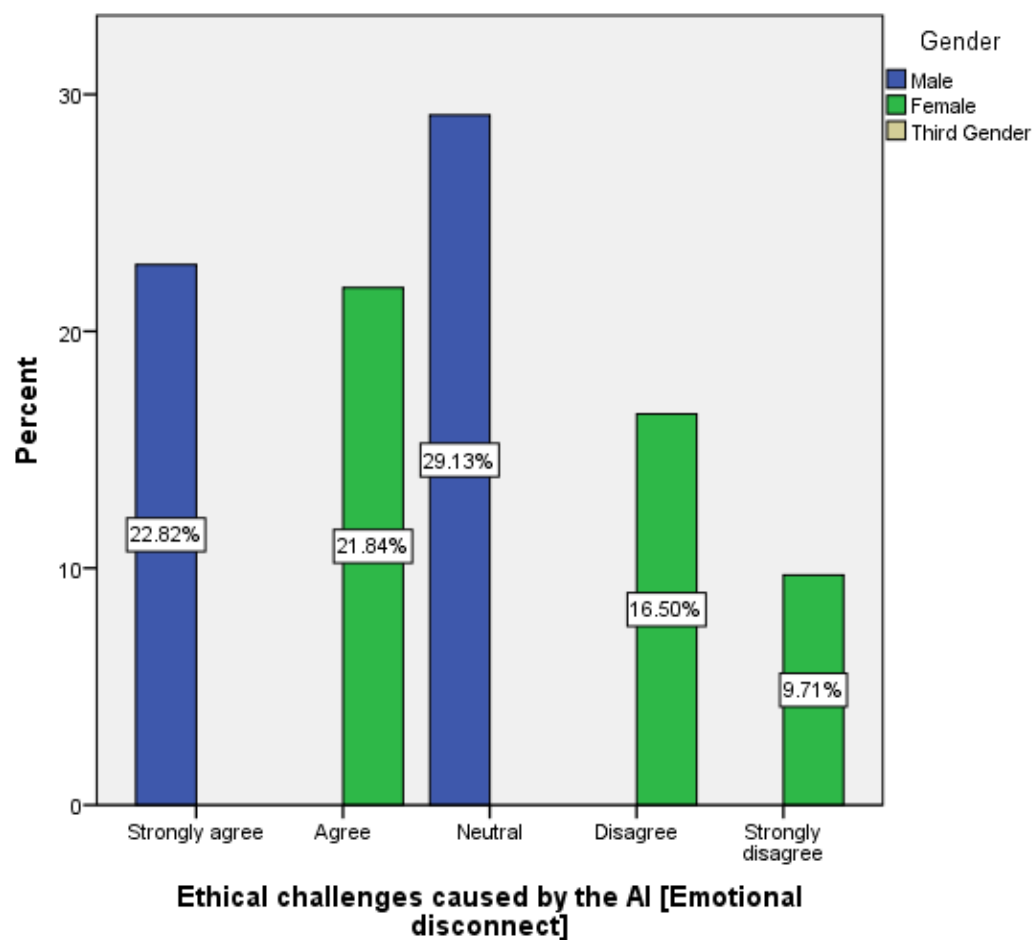
FIGURE 13:

LEGEND: The graph represents emotional disconnect as one of the ethical challenges caused by the AI compared with the gender of the respondents.
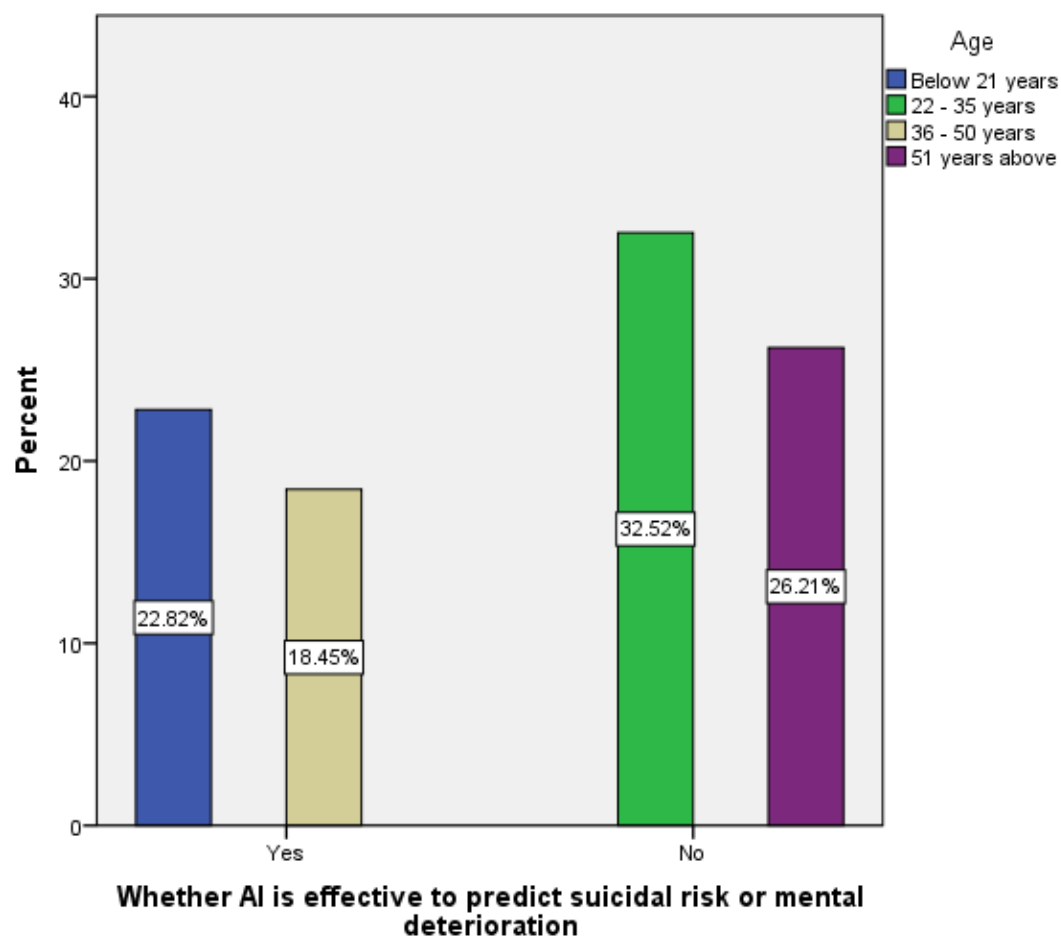
FIGURE 14:

LEGEND: The graph represents whether AI is effective to predict suicidal risk or mental deterioration compared with the age of the respondents.

FIGURE 15:
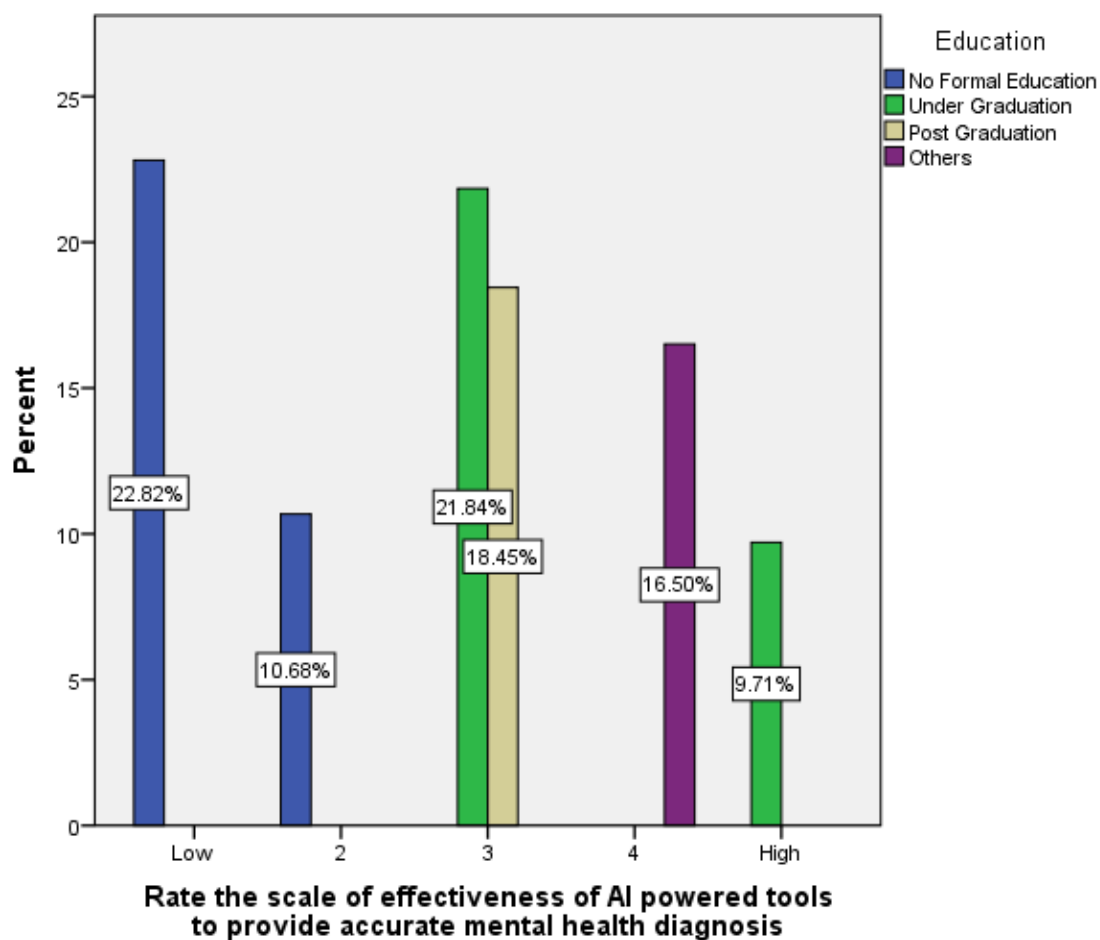
LEGEND: The graph represents the rate scale of effectiveness of the AI powered tools to provide accurate mental health diagnosis compared with the educational qualification of the respondents.

FIGURE 16:
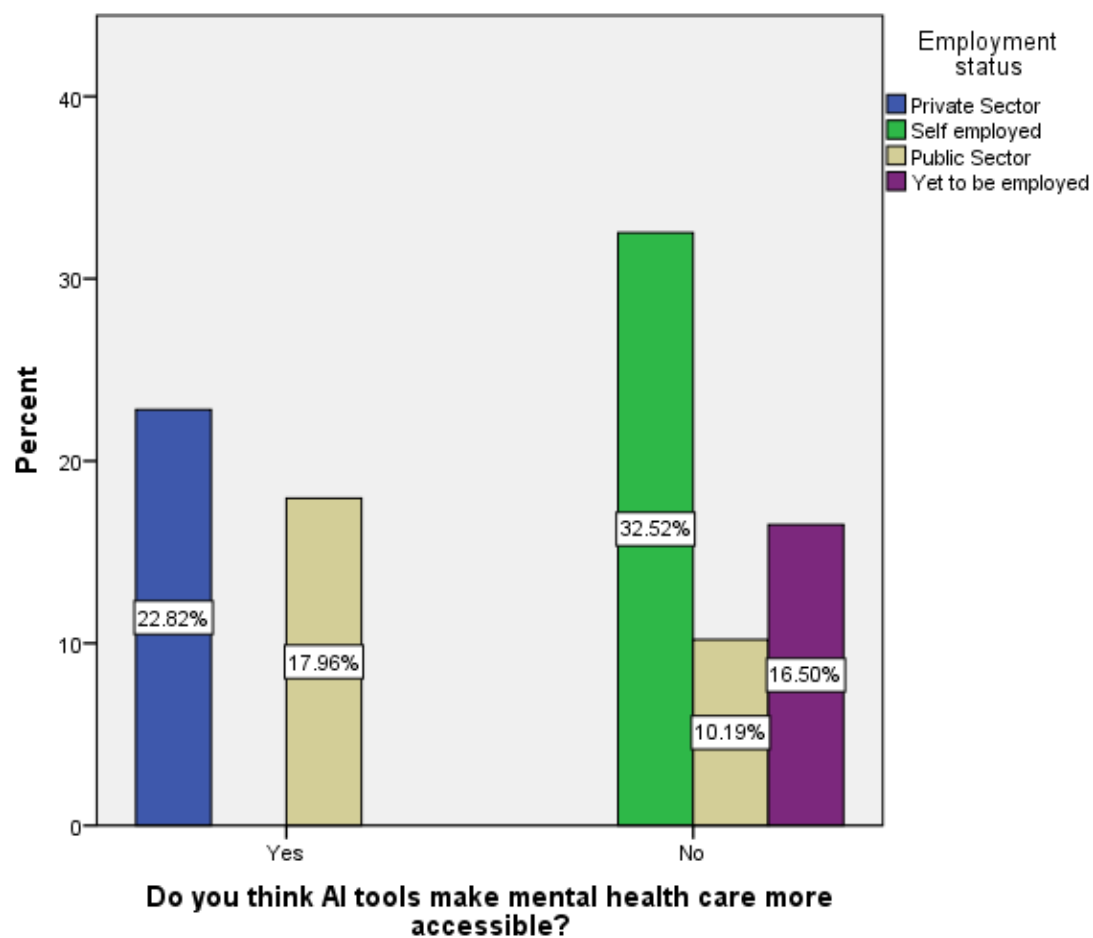
LEGEND: The graph represents whether AI tools make mental health care more accessible or not compared with the employment status of the respondents.

FIGURE 17:

CROSS TABULATION:

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Do you think AI tools make mental health care more accessible? * Gender	206	100.0%	0	0.0%	206	100.0%

**Do you think AI tools make mental health care more accessible? *
Gender Crosstabulation**

Count

		Gender		Total
		Male	Female	
Do you think AI tools make mental health care more accessible?	Yes	84	0	84
	No	23	99	122
Total		107	99	206

LEGEND: The tabular column shows cross tabulation.

FIGURE 18

ONE SAMPLE T TEST:

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Factors influencing individuals to adopt AI based mental health diagnosis	206	2.38	1.014	.071

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Factors influencing individuals to adopt AI based mental health diagnosis	33.743	205	.000	2.383	2.24	2.52

LEGEND: The tabular column shows one sample T test.

FIGURE 19:

ANOVA:

ANOVA

Rate the scale of effectiveness of AI powered tools to provide accurate mental health diagno

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	117.737	1	117.737	121.489	.000
Within Groups	197.700	204	.969		
Total	315.437	205			

LEGEND: The tabular column shows the test of Anova.

RESULTS

In **figure 1,** 32.52% of the respondents say that awareness and marketing of AI tools is the factor influencing individuals to adopt AI based mental health diagnosis. In **figure 2,** 29.13% of the respondents stand neutral saying that data privacy and security can be or cannot be an ethical challenge caused by AI. In **figure 3,** 21.84% of the respondents agree saying that lack of transparency is one of the ethical challenges caused by AI. In **figure 4,** 22.82% of the respondents strongly agree that misuse of AI for surveillance is one of the ethical challenges caused by AI. In **figure 5,** 16.50% of the respondents disagree that emotional disconnect is not an ethical challenge caused by the AI. In **figure 6,** 58.74% of the respondents responded no saying that AI is not effective to predict suicidal risk or mental deterioration. In **figure 7,** 40.29% of the respondent's rate 3 on the scale of 5 saying that the effectiveness of the AI powered tools to provide accurate mental health diagnosis is neutral. In **figure 8,** 59.22% of the respondents responded by saying no AI tools does not make mental health care more accessible. In **figure 9,** 22.82% of the male respondents say that accessibility and convenience is one of the major factors influencing individuals to adopt AI based mental health diagnosis. In **figure 10,** 21.84% of the respondents of age 22 - 35 years agree saying that data privacy and security can be an ethical challenge caused by AI. In **figure 11,** 18.45% of the post graduate respondents stand neutral saying that lack of transparency can be or cannot be one of the ethical challenges caused by AI. In **figure 12,** 16.50% of the unmarried respondents strongly disagree that misuse of AI for surveillance is not one of the ethical challenges caused by the AI. In **figure 13,** 21.84% of the respondents disagree that emotional disconnect is not an ethical challenge caused by AI. In **figure 14,** 22.82% of the respondents of age below 21 years responded yes

saying that AI is effective to predict suicidal risk or mental deterioration. In **figure 15,** 22.82% of the respondent's rate 1 on the scale of 5 saying that the effectiveness of the AI powered tools to provide accurate mental health diagnosis is low. In **figure 16,** 22.82% of the respondents working in the private sector responded no by saying AI tools make mental health care more accessible. In **figure 17,** The calculated value is 0.000 <0.05, Null Hypothesis is rejected. So, there is a significant association between variables. In **figure 18,** The calculated value is 0.000 <0.05, Null Hypothesis is rejected. So, there is a significant association between variables. In **figure 19,** The calculated value is 0.000 <0.05, Null Hypothesis is rejected. So, there is a significant association between variables.

DISCUSSION

In **Figure 1** A notable 32.52% of respondents identify awareness and marketing of AI tools as a key factor influencing the adoption of AI-based mental health diagnosis. This suggests that increasing public knowledge and visibility of AI applications is essential for driving widespread acceptance and use. In **Figure 2** Approximately 29.13% of respondents remain neutral on whether data privacy and security are ethical challenges caused by AI. This reflects uncertainty or mixed awareness regarding how AI systems handle sensitive mental health data. In **Figure 3** With 21.84% agreeing that lack of transparency is an ethical challenge caused by AI, there is clear concern about the "black-box" nature of AI systems, where the decision-making process is not always clear or understandable. In **Figure 4** A significant 22.82% of respondents strongly agree that misuse of AI for surveillance is an ethical challenge. This highlights apprehension about potential privacy violations or the unethical use of AI in monitoring individuals without consent. In **Figure 5** Around 16.50% of respondents disagree that emotional disconnect is not an ethical challenge caused by AI. This shows some level of recognition that the lack of human empathy in AI-driven mental health care might affect the quality of support provided. In **Figure 6** A majority (58.74%) of respondents believe AI is not effective in predicting suicidal risk or mental deterioration. This indicates skepticism about the current capabilities of AI tools in handling complex and sensitive mental health issues. In **Figure 7** About 40.29% of respondents rate the effectiveness of AI-powered tools to provide accurate mental health diagnosis as neutral. This suggests a balanced perception, with many unsure or waiting for more evidence of AI's reliability in this domain. In **Figure 8** A significant 59.22% of respondents believe AI tools do not make mental health care more accessible, pointing to barriers such as cost, digital literacy, or availability of AI-based services, which need to be addressed. In **Figure 9** Among male respondents, 22.82% cite accessibility and

convenience as major factors influencing the adoption of AI-based mental health diagnosis. This underscores the importance of making these tools user-friendly and widely available. In **Figure 10** Respondents aged 22–35 years (21.84%) agree that data privacy and security are ethical challenges, indicating greater concern about how AI handles sensitive information among this digitally active age group. In **Figure 11** About 18.45% of postgraduate respondents remain neutral on whether lack of transparency is an ethical challenge. This suggests a need for clearer communication and education about AI processes, even among more educated groups. In **Figure 12** A notable 16.50% of unmarried respondents strongly disagree that misuse of AI for surveillance is not an ethical challenge, indicating a segment of respondents who recognize the risks of unethical AI usage. In **Figure 13** Approximately 21.84% of respondents disagree that emotional disconnect is not an ethical challenge, acknowledging the importance of maintaining human-like empathy in mental health care. In **Figure 14** Respondents aged below 21 years (22.82%) affirm that AI is effective in predicting suicidal risk or mental deterioration, suggesting optimism among younger users about AI's capabilities in mental health care. In **Figure 15** About 22.82% rate the effectiveness of AI-powered mental health diagnosis as low (1 on a scale of 5), highlighting concerns about the current accuracy and reliability of these tools. In **Figure 16** A significant 22.82% of respondents working in the private sector believe that AI tools do not make mental health care more accessible. This indicates that professional environments may face challenges in integrating these tools effectively. In **Figures 17, 18, and 19** The rejection of the null hypothesis (calculated value $0.000 < 0.05$) in all three cases demonstrates a significant association between variables. This indicates that factors such as demographics, ethical concerns, and effectiveness perceptions play a crucial role in shaping opinions on AI-based mental health diagnosis.

LIMITATIONS

One of the major limitations of the study in the sample frame. There is a major constraint in the sample frame as it is limited to a small area. Thus, it proves to be difficult to extrapolate it to a larger population. Another limitation is the sample size of 206 which cannot be used to assume the thinking of the entire population in the particular country, state or city. The physical factors have a larger impact, thus limiting the study.

SUGGESTIONS

To maximize the potential of AI-powered mental health diagnosis, several key measures must be implemented. First, addressing ethical concerns such as data privacy, security, and transparency is paramount. Governments and organizations should establish clear regulatory frameworks to safeguard user data and prevent misuse of AI systems. Transparency in how AI models operate, make decisions, and use data can foster trust among users and mental health professionals. Second, the technology must be designed with inclusivity and accessibility in mind. AI tools should cater to diverse populations, including those in underserved or remote areas, ensuring equal access to mental health care. Tailoring tools to address cultural, linguistic, and demographic differences can significantly improve their adoption and impact. Additionally, enhancing the accuracy and reliability of AI algorithms is essential to ensure that mental health diagnoses are robust and evidence-based. This can be achieved through extensive research, improved datasets, and collaborations with mental health professionals to refine AI models. Public awareness campaigns and educational programs are also vital to address misconceptions about AI and promote its responsible use in mental health care. Finally, AI should be integrated as a complement to human care rather than a replacement, fostering collaboration between technology and mental health professionals. By implementing these measures, AI-powered mental health diagnosis can become a trusted, effective, and transformative tool in addressing the global mental health crisis.

CONCLUSION:

AI-powered mental health diagnosis tools have the potential to revolutionize mental health care, but the findings reveal significant gaps that need to be addressed for their widespread adoption and effective implementation. Ethical concerns such as data privacy, lack of transparency, and potential misuse for surveillance emerged as critical barriers. These issues hinder trust in AI systems and highlight the need for stricter regulatory frameworks and ethical guidelines to ensure responsible deployment. Additionally, a large proportion of respondents doubted the effectiveness of these tools in accurately predicting suicidal risks or mental deterioration, suggesting that the technology is still in its developmental stages. To gain user confidence, advancements in AI algorithms, better training data, and improved transparency are essential. The results also underscore the need for increased awareness and accessibility. While factors like awareness and marketing were seen as driving adoption, the majority of respondents felt that AI tools do not sufficiently improve access to mental health care,

particularly for vulnerable populations. Efforts should focus on bridging these gaps by enhancing the inclusivity of AI systems and tailoring them to diverse user needs. Demographic variations in responses further emphasize the importance of creating solutions that cater to different age groups, education levels, and employment sectors. By addressing these challenges, AI-powered tools can move closer to becoming a trusted, effective, and accessible solution for mental health diagnosis and care on a global scale. Additionally, the findings point to the importance of awareness and accessibility in driving adoption. While awareness and marketing were identified as key factors, many respondents felt that AI tools fail to make mental health care more accessible, particularly for underserved populations. This gap underscores the need for targeted efforts to improve inclusivity and ensure that AI systems are designed to cater to diverse demographic and professional groups. By addressing these challenges, AI-powered mental health tools can play a pivotal role in providing timely, accurate, and accessible mental health care, ultimately contributing to the broader goal of improving global mental health outcomes. With the right investments in research, ethical practices, and user-centered design, AI can emerge as a game-changer in addressing the growing mental health crisis.

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