BAŞKENT UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF PSYCHOLOGY
CLINICAL PSYCHOLOGY MASTER'S PROGRAM WITH THESIS

ATTITUDES OF ARTIFICIAL INTELLIGENCE AND ARTIFICIAL INTELLIGENCE-BASED PSYCHOTHERAPIES: A STUDY INVOLVING THREE DIFFERENT FIELDS

BY

BEGÜM ÖZTÜRK

MASTER'S THESIS

THESIS ADVISOR

ASSOCIATE PROFESSOR ELVİN DOĞUTEPE

ANKARA - 2025

BAŞKENT ÜNİVERSİTESİ

SOSYAL BİLİMLER ENSTİTÜSÜ

YÜKSEK LİSANS TEZ ÇALIŞMASI ORİJİNALLİK RAPORU

Tarih: 10/06/2025

Öğrencinin Adı, Soyadı: Begüm Öztürk

Öğrencinin Numarası: 22310047

Anabilim Dalı: Psikoloji Anabilim Dalı

Programı: Klinik Psikoloji Tezli Yüksek Lisans Programı

Danışmanın Unvanı/Adı, Soyadı: Doç. Dr. Elvin DOĞUTEPE

Tez Başlığı: Attitudes of Artificial Intelligence and Artificial Intelligence-based Psychotherapies: A Study Involving Three Different Fields

Yukarıda başlığı belirtilen Yüksek Lisans tez çalışmamın; Giriş, Ana Bölümler ve Sonuç Bölümünden oluşan, toplam 43 sayfalık kısmına ilişkin, 10/06/2025 tarihinde tez danışmanım tarafından Turnitin adlı intihal tespit programından aşağıda belirtilen filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezimin benzerlik oranı %7'dir. Uygulanan filtrelemeler:

1. Kaynakça hariç

2. Alıntılar hariç

3. Beş (5) kelimeden daha az örtüşme içeren metin kısımları hariç

"Başkent Üniversitesi Enstitüleri Tez Çalışması Orijinallik Raporu Alınması ve Kullanılması Usul ve Esaslarını" inceledim ve bu uygulama esaslarında belirtilen azami benzerlik oranlarına tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Öğrenci İmzası:

ONAY

Tarih: 10/06/2025

Öğrenci Danışmanı Unvan, Ad, Soyad, İmza:

Doç. Dr. Elvin DOĞUTEPE

ACKNOWLEDGEMENTS

First and foremost, I would like to express my sincere gratitude to my dear advisor, Assoc. Prof. Elvin Doğutepe, who guided me with her invaluable knowledge and experience at every stage of this thesis process. She was always generous with her support whenever I needed assistance. Her insightful feedback and constructive criticism challenged me to think more critically, refine my ideas, and grow both academically and personally. It was truly a privilege to work with her throughout this journey.

I sincerely thank the dear jury members, Prof. Dr. Emel Erdoğan Bakar and Assist. Prof. Tuğba Uyar Suiçmez for their valuable suggestions, contributions, and supportive attitude.

I would also like to extend my sincere thanks to my beloved family - my mother Mualla Öztürk, my father Mustafa Öztürk, and my sister Melek Öztürk - who have always stood by my side during this process. Their endless patience, genuine curiosity, and unwavering support gave me strength at every step. In moments when I felt overwhelmed, they helped me regain my motivation. Their presence, love, interest, and encouragement have been the greatest source of inspiration behind every page of this thesis. I am forever grateful for the light you have cast on my path.

Finally, I would like to thank my dearest ones Elifsu Karahüseyin, Berk Sümer, Buse Koluaçık, Serra Kaya, and Sanem Alarslan — some of whom I met during my time at Bilkent and Başkent, and one, whom I've been lucky to have in my life since high school. Sharing the same stress, excitement, and occasional existential crises of graduate school with you all made this challenging journey far more meaningful and memorable.

ÖZET

ÖZTÜRK, Begüm. Yapay Zekâya ve Yapay Zekâ Destekli Psikoterapilere Yönelik Tutumlar: Üç Farklı Alanı İçeren Bir Çalışma. Başkent Üniversitesi, Sosyal Bilimler Enstitüsü, Klinik Psikoloji Tezli Yüksek Lisans Programı. Ankara, 2025.

Bu araştırmada farklı akademik disiplinlerde öğrenim gören öğrencilerin yapay zekâ (YZ)'ya ve YZ destekli psikoterapilere yönelik tutumları karşılaştırılmış ve yardım arama tutumunun bu tutumlar ile ilişkisinin araştırılması amaçlanmıştır. Örneklem grubu Türkiye'deki 3. ve 4. sınıf psikoloji, bilgisayar mühendisliği ve sosyoloji öğrencileri olup, yaşları 20-30 aralığındadır. Araştırma toplamda 229 katılımcıyla yürütülmüştür. Veri toplama sürecinde katılımcılara, çözülmesi 10-15 dakika süren bir çevrimiçi anket sunulmuştur. Ankette katılımcılara sırasıyla Bilgilendirilmiş Onam Formu, Demografik Form, Yapay Zekâya Yönelik Genel Tutum Ölçeği, Psikolojik Yardım Almaya İlişkin Tutum Ölçeği - Kısa Form, YZ tabanlı psikoterapilere yönelik kısa bir açıklama paragrafı ve Yapay Zekâ Tabanlı Psikoterapilere Yönelik Tutum ölçeklerinin Türkçe formları sunulmuştur. Yapılan varyans analizleri sonucunda, pozitif YZ tutumu ile YZ destekli psikoterapilere yönelik tutumda gruplar arasında istatistiksel olarak anlamlı farklar gözlemlenmiştir. Bilgisayar mühendisliği öğrencilerinin psikoloji ve sosyoloji öğrencileri ile kıyaslandığında daha pozitif YZ ve daha pozitif YZ destekli psikoterapi tutumu benimsedikleri bulunmuştur. Psikoloji ve sosyoloji öğrencilerinin YZ'ye ve YZ destekli psikoterapilere yönelik tutumları arasında istatistiksel olarak anlamlı bir fark bulunmamıştır. Yardım arama tutumu kovaryant olarak incelendiğinde YZ destekli psikoterapilere yönelik tutumda gruplar arasındaki anlamlı farkın ortadan kalktığı görülmüştür. Yani, öğrencilerin YZ destekli psikoterapilere yönelik tutumlarının yardım arama tutumlarından kaynaklanabileceği bulunmuştur. Bu araştırmanın sonuçları, klinik çıkarımları, sınırlılıkları, güçlü yönleri ve gelecek araştırmalar için öneriler alanyazın bulguları ışığında tartışılmıştır.

Anahtar Kelimeler: yapay zekâya yönelik tutum, yapay zekâ destekli psikoterapilere yönelik tutum, yardım arama tutumu.

ABSTRACT

ÖZTÜRK, Begüm. Attitudes of Artificial Intelligence and Artificial Intelligence-based Psychotherapies: A Study Involving Three Different Fields. Başkent University, Institute of Social Sciences, Master's Program of Clinical Psychology with Thesis. Ankara, 2025.

This study compares artificial intelligence (AI) and AI-based psychotherapy attitudes in different academic disciplines and investigates the relationship between help-seeking attitudes and these attitudes. The sample comprises third- and fourth-year Turkish psychology, computer engineering, and sociology students aged 20-30. The study was conducted with 229 participants. During data collection, an online survey was presented to participants. In survey, participants were provided with Informed Consent Form, Demographics Form, Turkish versions of General Attitudes Toward Artificial Intelligence Scale, Attitudes Towards Seeking Professional Psychological Help Scale - Short Form, a short descriptive paragraph explaining AI-based psychotherapies, and Attitudes Toward AI-based Psychotherapy Scale in this order. Statistical analysis revealed a significant difference between groups in positive AI and AI-based psychotherapy attitudes. It was found that computer engineering students have a more positive AI and more positive AI-based psychotherapy attitude compared to psychology and sociology students. No significant difference was found between psychology and sociology students' positive AI and AI-based psychotherapy attitudes. When the help-seeking attitude was examined as a covariate, it was seen that the significant difference between groups in the AI-based psychotherapy attitude had disappeared. In other words, students' AI-based psychotherapy attitude may stem from their help-seeking attitudes. The results of this study are discussed along with their clinical implications, limitations, strengths, and suggestions for future studies in light of the literature.

Keywords: artificial intelligence attitude, artificial intelligence-based psychotherapy attitude, help-seeking attitude.

TABLE OF CONTENT

ACKNOWLEDGEMENTS ..... **i**
ÖZET ..... **ii**
ABSTRACT ..... **iii**
LIST OF TABLES ..... **iv**
LIST OF FIGURES ..... **v**
LIST OF ABBREVIATIONS ..... **vi**
1. INTRODUCTION **1**
1.1. Overview of Artificial Intelligence (AI) **2**
1.1.1. How did AI start? **2**
1.1.2. Common areas of application in AI **3**
1.1.2.1. Healthcare **3**
1.2.2.2. Education **3**
1.1.3. AI Attitudes **4**
1.1.3.1. Cultural influences **4**
1.1.3.2. Traits, personal beliefs, and experiences **4**
1.1.3.3. Media Portrayal **5**
1.1.4. Ethics in AI **5**
1.1.4.1. Privacy concerns and data protection **5**
1.1.4.2. Bias and fairness **6**
1.2. Psychotherapy **6**
1.2.1. Importance of getting professional psychological help **7**
1.2.2. Attitudes toward seeking professional psychological help **8**
1.2.2.1. Cultural and social influences **8**
1.2.2.2. Personality and personal beliefs **9**
1.2.2.3. Education **9**
1.2.2.4. Gender and age differences **10**
1.3. AI-based Psychotherapy **11**
1.3.1. Chatbots in psychotherapy **11**
1.3.1.1. Eliza **11**
1.3.1.2. Woebot **12**
1.3.1.3. Wysa **13**

1.3.1.4. Youper ... 13
1.3.1.5. Tess ... 13
1.3.2. Therapy robots with a physical form ... 14
1.3.2.1. Paro ... 14
1.3.2.2. Kaspar ... 14
1.3.2.3. Bandit ... 15
1.3.2.4. Pepper ... 15
1.3.3. Mobile-based applications in psychotherapy ... 15
1.3.3.1. Moodfit ... 15
1.3.3.2. Headspace ... 16
1.3.4. AI-based psychotherapy attitude ... 16
1.3.4.1. Attitudes of non-professionals ... 16
1.3.4.2. Attitudes of professionals ... 17
1.4. Importance of the Present Study ... 18
1.5. Aim and Hypotheses of the Present Study ... 19
2. METHOD ... 21
2.1. Participants ... 21
2.2. Materials ... 22
2.2.1. Informed consent form ... 22
2.2.2. Demographics form ... 22
2.2.3. General Attitudes Towards Artificial Intelligence Scale (GAAIS) ... 22
2.2.4. Attitudes Towards AI-based Psychotherapy Scale (ATAIP) ... 23
2.2.5. Attitudes Toward Seeking Professional Psychological Help Scale - Short Form (ATSPPHS - SF) ... 23
2.3. Procedure ... 24
2.4. Design ... 24
3. RESULTS ... 25
3.1. Descriptive Statistics ... 26
3.2. Correlation Analysis ... 27
3.3. Inferential Statistics ... 28
4. DISCUSSION ... 33
4.1. Evaluation of the Results ... 34
4.1.1. Relationships among AI attitudes, AI-based psychotherapy attitudes, and help-seeking attitudes ... 34

4.1.2. Relationships between departments and attitudes 36
4.1.3. The role of help-seeking attitudes in shaping AI-based psychotherapy attitudes 38
4.1.4. Clinical implications 39
4.1.5. Other implications 40
4.2. Strengths, Limitations, and Suggestions for Future Studies 42
REFERENCES 44
APPENDICES
APPENDIX 1: Informed Consent Form
APPENDIX 2: Demographics Form
APPENDIX 3: Brief Definition of AI-based Psychotherapies
APPENDIX 4: General Attitudes Towards Artificial Intelligence Scale
APPENDIX 5: Attitudes Towards AI-based Psychotherapy Scale
APPENDIX 6: Attitudes Toward Seeking Professional Psychological Help Scale - Short Form
APPENDIX 7: Scale Use Permissions
APPENDIX 8: Ethical Approvals

LIST OF TABLES

Page

Table 2.1. Descriptive Statistics of Demographic Variables 21
Table 3.1. Descriptive Statistics for Dependent Variables 26
Table 3.2. Correlations between Study Variables 28
Table 3.3. MANOVA Results for Differences in AI Attitude and AI-based Psychotherapy Attitude among Departments 30
Table 3.4. MANCOVA Results for the Effects of Covariate on Dependent Variables 31

LIST OF FIGURES

Page

Figure 3.1. Mean Values of AI Attitude and AI-based Psychotherapy Attitude Among Groups..... 30

LIST OF ABBREVIATIONS

AI	Artificial Intelligence
ATAIP	Attitudes Towards AI-based Psychotherapy Scale
ATSPPHS - SF	Attitudes Toward Seeking Professional Psychological Help Scale - Short Form
GAAIS	General Attitudes Towards Artificial Intelligence Scale
GAAIS negative	Negative AI Attitude
GAAIS positive	Positive AI Attitude
YZ	Yapay Zekâ

1. INTRODUCTION

Artificial intelligence (AI) emerged from the mathematician Alan Turing's idea that humans' problem-solving and decision-making processes may also exist in machines. Turing proposed this idea in a paper called "Computing Machinery and Intelligence" in 1950, suggesting that machines can think just like humans (Turing, 1950). AI, as a term, was first coined by American computer scientist John McCarthy in 1956, when he was an assistant professor at Dartmouth College (Nilsson, 2010).

The value of AI today has continued to increase thanks to the research in the field. This growth has made the use of AI possible in various fields other than engineering, such as education, finance, human resources, law, marketing, and mental health. About 60 years ago, Joseph Weizenbaum, a professor at Massachusetts Institute of Technology (MIT), worked on the brining AI and psychotherapy together and created the world's first chatbot, "Eliza" (Weizenbaum, 1966). The purpose of Eliza was to have a natural conversation with a person in front of her, just like a human (Akyazı & Baştemur, 2024). Thus, Eliza would be the mother of all chatbots developed in the world.

The opportunities AI have considerable benefits especially to the mental health. The use of AI in the mental health field has become increasingly popular and preferred in recent years. Importantly, the literature on the potential benefits and drawbacks of using artificial intelligence in mental health has been steadily growing. AI-based psychotherapy systems are considered particularly beneficial in addressing challenges associated with traditional face-to-face psychotherapy, such as high costs, limited accessibility, and time constraints (Omiyefa, 2025). Chatbots like Wysa and Woebot have been shown to support individuals using cognitive behavioral therapy (CBT) techniques; however, it has been emphasized that such tools cannot replace professional psychotherapists and should be used solely as supplementary resources (Graham et al., 2019; Hilty et al., 2025). Furthermore, two recent studies have suggested that AI can enhance mental healthcare regarding accessibility and efficacy, yet ethical concerns must not be overlooked in developing these technologies (Alemede, 2025; Olawade et al., 2024).

Recent studies in Turkey concerning AI and psychotherapy provide considerable insights into the consequences of including AI in psychotherapy and people's attitudes towards this issue. A recent study on mental health and AI has provided insight into about people's negative and positive attitudes (Gültekin & Şahin, 2024). This study found that

people's general attitudes were that AI can be beneficial and functional as an assistant, not a clinician (Gültekin & Şahin, 2024). Another recent study notes that AI technologies can contribute to psychotherapy by receiving the necessary information from the patients, evaluating patient interviews, receiving feedback from them, and uploading relevant patient data to the system (Kıratlı & Öztürk, 2023). Yet another study contains information about several therapy robots used in psychotherapy, the psychotherapy approaches used, and their benefits (Akyazı & Baştemur, 2024). Same study also argued that that utilizing these therapy robots for therapeutic purposes is common and effective.

The following section reviews the concept of AI, how it is used in psychotherapy, and its importance in the field of mental health. Subsequently, based on the information about AI and its technologies, it was reviewed what changes have occurred in humans' lives after AI has emerged. After that, this section will provide information about the unification of AI and the mental health field. Finally, the aims and importance of the present study is presented at the end of this section.

1.1. Overview of Artificial Intelligence (AI)

1.1.1. How did AI start?

As mentioned before, the emergence of AI began with Alan Turing's idea that humans' problem-solving and decision-making processes may also exist in machines (Turing, 1950). To answer the question "Can machines think?", Turing proposed a test named "Imitation Game", which is known as the Turing test. The test was conducted to see if it is possible to distinguish between humans and machines in terms of the ability to think. The procedure is as follows: A human evaluator should distinguish two individuals based on text-based communication, identifying a machine and a human. If the evaluator cannot distinguish the machine from the human, the machine will pass the test. So, what matters here is not the accuracy of the answers but their similarity (Delipetrev et al., 2020). In later years, the Turing test gained attention in the fields of AI and philosophy. Most notably, philosopher John Searle proposed The Chinese Room Argument, which found the Turing Test insufficient. Accordingly, Searle suggested that a machine cannot possess intelligence or consciousness like a human does (Searle, 1980).

Eventually, discussions on the definitions of AI led to the categorization of AI systems based on their capabilities and capacity: Artificial Narrow Intelligence (ANI), also known as

Weak AI, and Artificial General Intelligence (AGI), also known as Strong AI. ANI refers to AI technologies designed to have a limited capacity, be responsible for doing specific tasks, and be goal-oriented. Examples of ANI systems include translation apps, and deep learning apps such as face identification, virtual assistants, chatbots, Siri, and Alexa (Babu & Banana, 2024).

AGI, which emerged as a contrast to the ANI, is described as AI possessing an intellectual ability akin to humans (Goertzel, 2014). The possibility of an AGI still remains a controversial topic. Contrary to ANI, AGI is said to imitate human intelligence and consciousness by simultaneously performing multiple tasks and having the ability to solve various problems. Although examples of AGI are not present today, prior research has started discussions about machine intelligence and consciousness (Turing Test and Chinese Room Experiment, etc.).

1.1.2. Common areas of application in AI

1.1.2.1. Healthcare

AI technologies hold an important place in the sustainability of the healthcare systems in cases where there can be challenges in accessing healthcare systems and organizations. AI and its advantages have been extensively studied in the medical literature, particularly in screening, diagnosing, and treating. Most AI technologies, such as machine learning (ML), deep learning, and natural language processing (NLP), have advantages in the field of healthcare, and all of them function as a whole (Jiang et al., 2017).

One of the most beneficial applications of ML in healthcare is precision medicine, which aims to find the most suitable and successful patient treatment protocol based on factors such as the patient's symptoms, genetic makeup, and lifestyle (Davenport & Kalakota, 2019). To find the most suitable treatment option, ML algorithms are used based on health data such as the onset of disease (Davenport & Kalakota, 2019). Importantly, the importance of AI in health is not limited to physical health. As will be discussed later, AI carries importance also in mental health.

1.2.2.2. Education

The use of AI is also common in the field of education. McKinsey & Company, a well-known global consulting firm, conducted research with teachers from different countries. The results suggested that AI can be beneficial in terms of reducing teachers' workload and increasing the quality of education (Bryant et al., 2020). In a bibliometric analysis of the AI systems such as ML and NLP, the prominence of the AI has been shown in fields such as

language education, special education, performance prediction, and feedback systems (Chen et al., 2022). For instance, the performance prediction system using ML has been shown to be beneficial for tracking students' success (Chen et al., 2022).

1.1.3. AI Attitudes

AI technologies lead to different points of view and attitudes due to various factors. Among these factors, the most important ones are cultural influences, traits, personal beliefs and influences, and media portrayal.

1.1.3.1. Cultural influences

Some studies have shown that different cultural backgrounds can influence AI attitudes. For example, Ma et al. (2024) found that when the preference for AI and the prevalance of AI usage are considered, Chinese students had a less positive AI attitude than Western international students (Ma et al., 2024). They interpreted this as AI's potential to disrupt some job fields may cause unemployment in highly populated countries such as China. This might be the most common reason for negative AI attitudes among individuals. Another study conducted with German, British, and Chinese students suggests that cultural factors are associated with AI attitude. However, this study found that the AI acceptance was higher in Chinese students than in others. AI fear was also analyzed in the same study, in which German and British students scored higher in this category (Sindermann et al., 2020). The significantly larger investment of resources, time, and money in AI in China compared to the other two countries may explain these scores (Pham, 2017, as cited in Sindermann et al., 2020).

1.1.3.2. Traits, personal beliefs, and experiences

Previous research suggests that individuals' personality traits, beliefs, and AI experiences can change their AI attitudes. In a study conducted with healthcare workers and their patients, Fazakarley et al. (2024) found that the use of AI by healthcare workers could alleviate their workload when they saw AI as an assistant. Similarly, patients held the same attitude as the workers. Despite the positive attitude towards the use of AI in healthcare, patients reported that it needs to be controlled by a human (Fazakarley et al., 2024). This may stem from trust in AI and ethical issues regarding AI. Personal experiences also play an essential role in determining the AI attitude. Individuals already familiar with AI are more supportive of adopting advanced AI technologies such as self-driving cars and autonomous surgery than those unfamiliar with AI (Horowitz & Kahn, 2021). Another study conducted

in Korea suggested that the more the students were familiar with AI, the more positive their AI attitude was (Won Kim & Lee, 2023). The increase in individuals' trust can explain this attitude change as they get more experience with AI, or with the adoption of AI, as they are frequently exposed to AI. With respect to the role of personality traits, Park and Woo (2022) examined the relationshop between personality traits and AI attitudes found that individuals with the openness to experience trait were more positive towards AI (Park & Woo, 2022). Since people high in openess to experience are open to innovation, it is reasonable that they are more likely to accept AI compared to the other four personality traits.

1.1.3.3. Media Portrayal

The portrayal of AI in the media can change attitudes, perceptions, and knowledge about AI. The results of a study conducted with students suggested that, although students were familiar with AI technologies, there were different opinions about what AI is and how it is used (Sani, 2024). This difference has been discussed as the media's portrayal of AI. Results showed that 68% of students reported that the first thing to comes to their mind when AI is mentioned is robots. So, it is highly possible that they are concerned about losing their jobs in the future and develop negative attitudes. Only 13% of the students expressed positive attitudes and described AI as the technology that helps them ease the workload (Sani, 2024). Therefore, ideas and attitudes are shaped by how AI is represented in the media. Another study examining how the portrayal of AI shapes public attitudes suggested that AI should not only be limited to fictional narratives (as in science-fiction movies) and that more informative content (as in The Social Dilemma movie and Black Mirror series) should be presented to people in order them to make more realistic evaluations (Nader et al., 2022). As these fictional contents lead people to form a limited or incomplete understanding of AI, they prevent them from receiving information about AI's true potential.

1.1.4. Ethics in AI

AI attitudes are not only shaped by sociocultural, personal, or societal factors. Ethical concerns, especially privacy and data protection, bias, and fairness, are also crucial in shaping attitudes.

1.1.4.1. Privacy concerns and data protection

Most AI technologies are detected and controlled by large and specialized organizations. This raises a concern that these organizations can use the data obtained from individuals for harmful purposes. Curzon et al. (2021) suggested that some of these privacy

concerns about AI systems include unauthorized secondary data use, misrepresentations, and poor decision-making from available data. Collecting personal information and using it for different purposes without permission is a significant violation of privacy and damages the trust in AI. In another study, privacy issues were reported to be one of the most critical concerns about AI. The concerns mostly concentrated on healthcare data privacy (patient records, disease tracking system, etc.) (Zhang et al., 2021). These threats can prevent people from using AI technologies and affect societal acceptance of AI.

1.1.4.2. Bias and fairness

Bias and fairness are other ethical problems concerning AI systems. These systems play a critical role, especially in the healthcare, finance, and criminal justice, so it is crucial to ensure that they are fair (Kheya et al., 2024). The fact that AI algorithms raise some concerns about fairness can be demonstrated through two examples: First, an algorithm developed in the USA courts for assessing guilt was found to be biased against Black defendants (Angwin et al., 2016). Again, an article published in The Washington Post reported that Gemini, a chatbot developed by Google, has some gender stereotypes. According to Gemini, the aim of life for men is to reach personal goals and create a difference in people's lives; however, for girls, it is just love and affection (Fowler, 2023). These examples show that AI should be detected in terms of bias and fairness issues.

1.2. Psychotherapy

Psychotherapy is a method designed to address individuals' emotional and behavioral problems while enhancing mental well-being (McWilliams, 2013). Mental health professionals can conduct psychotherapy for children, adolescents, adults, families, and couples. Today, there are many diverse approaches to psychotherapy. However, it was first used as a technique by Sigmund Freud's psychoanalytic theory.

The psychodynamic approach has some important features that differentiate it from the other approaches. It can be separated from the cognitive approach, which gives importance to thoughts and beliefs, by focusing on and discovering challenging and threatening feelings of the patient (Shedler 2010). It emphasized how early life experiences are linked to the psychological problems patients experience today. Lastly, the psychodynamic approach gives importance to free speech as this is a "rich source of information" for professionals (Shedler, 2010).

According to Aaron T. Beck's explanation (1964), how people feel depends on their interpretation of their experiences. Based on this, he developed CBT approach, which can be counted as one of the most effective approaches in treating depression and anxiety disorders. This approach aims to change the maladaptive thoughts and behaviors that cause the individual to judge him/herself negatively (Clark & Beck, 2023).

The belief held by humanistic therapy is that every individual experiences this world uniquely and has the potential to make their own decision for their own good (Rogers, 1951). In this approach, providing clients with personal growth and self-acceptance is essential. Psychotherapists who embrace a humanistic approach should consider three critical concepts throughout the therapeutic process: unconditional positive regard, empathetic understanding, and genuineness (Rogers, 1951).

Behavioral therapy is based on the behavioral modification techniques developed by B. F. Skinner. This technique relies on operant conditioning, which Skinner believes is how learning takes place (Labrador, 2004). The behavioral approach studies learned behavior and how the environment affects individuals' behavior. In other words, it is necessary to address environmental factors to understand how a person feels and behaves. According to Skinner (1988), the beginning of everything is not a feeling or emotion, but the presence of an event that triggers these feelings. The idea behind behavioral therapy is that individuals must first recognize the events they experience so they can articulate the feelings and emotions they experience

1.2.1. Importance of getting professional psychological help

In the long term, psychotherapy can benefit individuals in three ways: changing their negative perceptions about themselves, changing negative perceptions about others, and facilitating behavior change (Carey et al., 2007; Perren et al., 2009). In a study, participants reported that psychotherapy helped them gain awareness of what was happening around them, gain more insight into themselves, regulate their emotions and behaviors, and manage and develop relationships with others. At the same time, they noted a decreased reliance on others due to psychotherapy, increased self-confidence, and improved relationships with others (Perren et al., 2009). Additionally, various studies emphasize the long-term benefits of psychotherapy (Baker et al., 1998; Roussakis et al., 2025; Fonagy, 2015; Abbass et al., 2012). For instance, individuals who participated in an eight-session psychotherapy program reported not only a reduction in psychiatric symptoms but also an increase in self-esteem

and an improved quality of life over the long term (Baker et al., 1998, as cited in Baker et al., 2002). The researchers attributed these outcomes to an enhancement in participants' coping abilities. Another study showed that among the long-term benefits of psychotherapy is a positive impact on the overall well-being of patients with Parkinson's disease (Roussakis et al., 2025). In another study, the benefits of short-term psychodynamic therapy were examined. After psychodynamic treatment, participants reported lower psychological distress, higher overall life quality, and social functioning (Fonagy, 2015). Another study highlighting the benefits of short-term psychodynamic therapy found that the gains participants achieved during treatment were sustained for a long period after therapy concluded (Abbass et al., 2012). These findings indicate that psychotherapy has a lasting and multifaceted impact on individuals.

1.2.2. Attitudes toward seeking professional psychological help

Attitudes toward seeking professional psychological help can be defined as the individual's tendency to seek psychotherapy to solve their psychological difficulties (Fischer & Turner, 1970). It is also known as help-seeking attitude. Individuals can have different attitudes about seeking professional psychological help. These attitudes can change according to culture, social environment, personality and personal beliefs, education, gender, and age. Explaining how these attitudes change based on these factors can help mental health professionals develop explanations and solutions about individuals' psychotherapy motivation.

1.2.2.1. Cultural and social influences

Many cultural and social influences affect individuals' help-seeking attitudes: different ethnic backgrounds, self-stigmatization due to public norms, social support, and social network possibilities. In a study conducted with students from different ethnic backgrounds, Caucasian students were found to be more positive towards help-seeking compared to Asian and mixed-ethnicity (those whose mother and father come from various ethnic backgrounds or Black/African, Arabic, Hispanic/Latino) students (Kuo et al., 2006). Likewise, Lambert (2004) reported that Caucasian individuals had a more positive attitude towards help-seeking compared to non-Caucasian individuals. In another study, Al-Krenawi and his colleagues (2009) suggested that women are unwilling to receive psychological help due to stigmatization, as this stigmatization was an obstacle to their future marriages. These findings demonstrate us that these societal norms prevent individuals from receiving

necessary psychological help; consequently, their future interpersonal relationships may be affected. Another study also suggested that this fear of stigma influences individuals' help-seeking attitudes negatively (Vogel et al., 2006). A study conducted with Turkish students reported that students who received higher social support from their families had a more positive help-seeking attitude than students who received less emotional support. This study also found that developing social networks may positively influence help-seeking attitudes (Koydemir-Ozden, 2010). Social support from family or peers can be considered as essential resources for students receiving professional psychological help.

1.2.2.2. Personality and personal beliefs

Personal beliefs and experiences, personality traits, and attachment styles affect individuals' help-seeking attitudes. Personal beliefs affecting help-seeking attitude can be divided into two categories: the beliefs individuals get based on their experiences, and the beliefs shaped and imposed by society (Constantinou et al., 2017). These two factors show that people can shape their help-seeking attitudes and beliefs based on their prior experiences and the information they get from external sources. A systematic review by Bornschlegl and colleagues (2020) suggested that personality traits is another essential component in determining individuals' help-seeking attitude. Among the studies included in this review, 11 studies using the Big Five Personality Model found a positive correlation between extraversion personality type and positive help-seeking attitude. Moreover, a positive correlation between openness to experience and positive help-seeking attitude was found in 10 studies (Bornschlegl et al., 2020). Other studies, such as Vogel and Wei (2005), also suggested that attachment style is another crucial factor determining help-seeking attitude. A study conducted with university students showed that students with anxious attachment styles had a more positive help-seeking attitude than those with avoidant attachment styles. The researchers attributed this finding to the fact that individuals with anxious attachment styles are aware of their psychological distress. In contrast, individuals with avoidant attachment styles are more inclined to deny their distress (Vogel & Wei, 2005). Another study suggested that individuals with avoidant attachment styles receive less social support; consequently, they have a negative help-seeking attitude (Wadman et al., 2019).

1.2.2.3. Education

Education level is among the demographic factors influencing individuals' help-seeking attitudes. Hammer et al. (2003) conducted a study with 18-79 year old participants from different cultures. Their results suggested that the help-seeking attitudes of men with higher education status were more positive than the help-seeking attitudes of men with lower

education status. The systematic review by Bornschlegel et al. (2020) supports the results of this study. Seven studies in the review suggested that a higher help-seeking attitude positively correlates with higher education status. Along these, Koydemir-Ozden and Erel (2010) documented that there was a positive relationship between an individual's parental education level and their positive help-seeking attitude. Similarly, Gonzalez et al. (2011) showed that individuals who had higher (>16 years of) education levels were more likely to show willingness toward help-seeking. As a result, higher education levels increase individuals' skills in mental health literacy, leading to a positive help-seeking attitude (Gonzalez et al., 2011).

1.2.2.4. Gender and age differences

Gender and age are also critical demographic factors besides education level that help determine help-seeking attitude. Being a woman and being older are positively correlated with positive help-seeking attitudes (Kuo et al., 2006). This finding, which suggested that women have a more positive help-seeking attitude than men, has been supported by other studies (Morgan et al., 2003; Rickwood & Braithwaite, 1994; Koydemir-Ozden, 2010). Rickwood & Braithwaite (1994) explain this situation with traditional or societal norms. According to societal norms, expressing emotions in public can be acceptable for women; however, men should hide their emotions and seem strong on the outside. As a result, it cannot be expected for a man to express his positive opinions on help-seeking, contrary to women. Although expressing emotions and seeking support in public seems acceptable for women, men tend to be more avoidant in help-seeking issues, due to the influence of societal gender roles.

As an individual's age increases, their help-seeking attitude also increases, so there is a positive correlation between age and positive help-seeking attitude (Kim & Omizo, 2003; Surgenor, 1985). Surgenor (1985) explains the negative help-seeking attitudes of young people as the "arrogance of youth". This means that the excessive self-confidence of young people that they can handle everything by themselves can lead them to disdain psychotherapy and perceive it as if it is not effective. A study conducted with young women reported that participants of a smaller age were less positive about help-seeking (Al-Krenawi et al., 2004). Another study conducted with students suggested that senior students had a more positive help-seeking attitude than freshmen students (Al-Darmaki, 2003). In Bornschlegl and his colleagues' review (2020), age was one of the most relevant factors determining help-seeking attitude. There was a positive relationship between age and help-seeking attitude in 20 of the

studies included in the review. This positive correlation between age and help-seeking attitude can be explained by the increase in individuals' education and awareness as they age.

1.3. AI-based Psychotherapy

Especially after the COVID-19 pandemic, people are more likely to carry out their jobs through the Internet, and both online and hybrid working styles have emerged. Psychotherapy has also been available online, in addition to the traditional face-to-face sessions. Individuals who would like to receive professional psychological help now benefit from both face-to-face and online platforms. Chatbots, therapy robots in physical form, and digital therapy applications are AI-based psychotherapy applications that are now developing and aiming to meet people's needs for psychological support needs through online platforms.

1.3.1. Chatbots in psychotherapy

Chatbots are AI tools that help users to communicate in written and spoken form with electronic devices (Xu & Zhuang, 2020). Chatbots are utilized in fields such as education, physical healthcare, and psychological healthcare due to their benefits. They can be divided into two subcategories based on their aims: goal-driven and non-goal-driven chatbots. Non-goal-driven chatbots are entertainment chatbots that are designed to chat, such as Amazon Alexa (Xu & Zhuang, 2020). On the contrary, goal-driven chatbots communicate with users through their specific aims. Psychotherapy chatbots can be examples of goal-driven chatbots as they work based on particular psychotherapy modalities to improve users' mental well-being (Xu & Zhuang, 2020). This section will discuss famous goal-driven psychotherapy chatbots, their emergence, and working methods.

1.3.1.1. Eliza

About 60 years ago, Weizenbaum created the world's first chatbot, "Eliza" (Weizenbaum, 1966). Eliza aimed to have a natural conversation with someone in front of her, just like a human (Akyazı & Baştemur, 2024). Eliza was a chatbot programmed to produce answers based on Rogers' humanistic approach (Boucher et al., 2021). In other words, Eliza aims to provide solutions by empathizing with the users and not judging them. Eliza receives the script from the user and produces repetitive responses as if it understands it (Akyazı & Baştemur, 2024). For example, if someone types "I am feeling sad." into the input box, Eliza will answer "How long have you been feeling sad?" This is called "reflective listening" in the Rogerian Approach (Braillon & Taiebi, 2020).

In a study where Eliza and a human therapist were evaluated together, participants were told they would be conversing with two therapists. They were told that they would see one therapist face-to-face and the other one through an online platform. However, participants were not told that one of them was a chatbot. The participants reported that both therapists were natural (Cristea et al., 2013). This finding was coined as the "Eliza effect" (Hofstadter, 1995, as cited in Cristea et al., 2013).

Apart from the successful emotional support Eliza provides individuals, it also has some disadvantages. Research showed that Eliza is incapable of forming a therapeutic bond because it cannot maintain a chat with users, it cannot learn new language patterns because it is not a modern chatbot, and it has no reasoning mechanism (Xu & Zhuang, 2020). Although Eliza has historical significance, it falls far behind modern chatbots because of these disadvantages.

1.3.1.2. Woebot

Woebot, developed by Alison Darcy, is a CBT-based conversational agent (Akyazı & Baştemur, 2024). Woebot offers many benefits in the therapeutic process: giving empathetic responses to users, helping with goal setting, fostering motivation, and enhancing user engagement (Fitzpatrick et al., 2017). It first receives information about the users' mood, and then uses the key concepts of CBT to communicate. In this way, it is loyal because it prepares a personal program for the user. For instance, Woebot starts the conversation by asking questions such as "What's going on in your world right now?", and tries to understand the mood of its user. Then, it prepares activities in the context of CBT, helping the user to establish the connection between emotions, thoughts, and behaviors (Fitzpatrick et al., 2017). It also enhances user engagement and motivation by utilizing emojis and creating a sincere chat environment (Xu & Zhuang, 2020). In a randomized controlled trial, it was suggested that Woebot can be used as an effective treatment source for depression (Fitzpatrick et al., 2017). This is a significant result for the clinical implications of chatbots.

However, Woebot has some disadvantages that negatively affect the user experience. For instance, when the user interrupts the conversation and then comes back, Woebot may ask repetitive questions that it has asked before. In addition to this, it may give users irrelevant responses (Xu & Zhuang, 2020). It might be helpful to track the history of the dialog.

1.3.1.3. Wysa

Wysa, which Touchkin developed, is a CBT-based chatbot that helps improve individuals' mental health and well-being (Akyazı & Baştemur, 2024). Wysa uses proven effective CBT intervention techniques. Besides that, Wysa also uses therapeutic techniques and different treatment modalities such as meditation, breathing exercises, relaxation strategies, motivational interviewing, Dialectical Behavioral Therapy, gratitude journaling, and yoga (Legaspi et al., 2022; Xu & Zhuang, 2020). In a study comparing people with depressive symptoms who regularly used Wysa with people with depressive symptoms but did not use Wysa, Wysa was found to be effective in alleviating depressive symptoms, just like Woebot (Inkster et al., 2018). However, Wysa can produce repetitive and meaningless sentences like Woebot (Xu & Zhuang, 2020). This situation leads to a negative user experience.

1.3.1.4. Youper

Another chatbot that facilitates its users with mental health services is Youper. First, Youper asks questions to detect the emotional state of its users, then it presents necessary wellness practices (Farzan et al., 2025). Youper works to change negative mood and uses techniques from various modalities such as CBT, Acceptance and Commitment Therapy, Dialectical Behavioral Therapy, Problem-Solving Therapy, and Mindfulness-Based Cognitive Behavioral Therapy (Akyazı & Baştemur, 2024). A study by Mehta et al. (2021) suggested that Youper was successful in reducing depression and anxiety symptoms and thatit alleviates depression symptoms in two weeks, and anxiety symptoms in two to four weeks.

1.3.1.5. Tess

The chatbot named Tess was developed to detect and understand the emotional needs of users and react accordingly. It uses various techniques and treatment modalities such as CBT, stress management, psychoeducation, mindfulness, Acceptance and Commitment Therapy, and Dialectical Behavioral Therapy (Dosovitsky et al., 2020). In this way, Tess helps its users identify maladaptive thinking patterns and stress factors, making them more functional, teaching emotional regulation and coping mechanisms, and raising awareness of personal values (Dosovitsky et al., 2020). In a randomized controlled trial, it was found that two to four weeks of Tess use can alleviate the anxiety and depression symptoms of university students (Fulmer et al., 2018). Moreover, Tess was found to be helpful through its motivational speech on achieving goals for adolescents with prediabetic symptoms and unsuccessful weight control (Stephens et al., 2019, as cited in Dosovitsky et al., 2020).

Therefore, Tess can be considered a successful chatbot, as it combines different treatment modalities and provides a successful eclectic perspective.

1.3.2. Therapy robots with a physical form

Today, not only text-and voice-based chatbots are present, but also therapy robots designed in physical forms to meet individuals' psychological needs have been emerging. This section will mention the emergence and functioning of therapy robots used today, such as, Paro, Kaspar, Bandit, and Pepper.

1.3.2.1. Paro

Paro is a baby seal-shaped therapy robot, especially useful for the elderly. It has five sensors to detect and communicate with its surroundings and people: sound, light, touch, temperature, and posture (Akyazı & Baştemur, 2024). Paro's approach is based on the principles of reinforcement and punishment. For instance, if the users hug Paro, Paro will remember it and repeat the behavior later. However, if users hit Paro for some reason, Paro will not repeat the previous behavior (Akyazı & Baştemur, 2024). A study conducted with older adults found that Paro enhanced social interaction and communication (Kidd et al., 2006). Another study suggested that Paro alleviated the anxiety symptoms of elderly people with Alzheimer's Disease (Roger et al., 2012). It can be concluded that Paro is an effective and successful robot for reducing the anxiety symptoms and communication problems of Alzheimer's patients.

1.3.2.2. Kaspar

Kaspar is a child-like humanoid robot designed specifically to enhance the social skills of children with autism spectrum disorder (ASD). The basic design of Kaspar and his basic facial expressions create a safe, predictable, and uncomplicated setting for children (Akyazı & Baştemur, 2024). Kaspar was found to be helpful in improving children's social interaction and communication skills (Huijnen et al., 2015). Another study conducted with children with ASD presented similar results. It was observed that after spending time with Kaspar, a sample of children with ASD, aged 7 to 11, had improved their social and communication skills (Karakosta et al., 2019). Kaspar's ability to improve the communication skills of children with autism shows that these kinds of technological improvements can play an important role in the treatment processes of some neurodevelopmental disorders.

1.3.2.3. Bandit

Bandit is a humanoid robot developed by the University of Southern California's Interaction Lab and BlueSky Robotics. It is suitable for home, school, and hospital-like environments (Akyazı & Baştemur, 2024). Fasola and Mataric (2013) conducted a study with elderly individuals and found that Bandit effectively assisted them in performing physical exercises. Participants in the same study also stated that Bandit was more enjoyable and useful than chatbots (Fasola & Mataric, 2013). These findings show that robots with a physical form can establish a stronger interaction than chatbots.

1.3.2.4. Pepper

Pepper, the most famous humanoid robot, was developed by SoftBank Robotics. It can communicate with users through its touch screen and dialogues (Akyazı & Baştemur, 2024). Pepper can detect users' facial expressions, voice tones, and basic emotions. It can also exhibit body language and communicate with people (Pandey & Gelin, 2018). Pepper's main aim is to reduce the workload, therefore easing human life. Pepper also has a positive impact on psychological health. In a qualitative study conducted with Alzheimer's patients and their caregivers, Pepper's assistance in helping patients with daily life activities, developing social interactions, and forming friendships was practical. Caregivers experienced reduced stress levels due to Pepper (Liao et al., 2023). The integration of Pepper into the care processes of dementia patients has resulted in beneficial results for patients and their caregivers.

1.3.3. Mobile-based applications in psychotherapy

In recent years, mobile-based applications have also been widely used for therapeutic purposes. These digital platforms contain features such as mood tracking, mindfulness exercises, and cognitive-behavioral strategies. Mobile-based applications are different from chatbots and therapy robots in a physical form as they cannot provide continuous dialogue or mutual communication. They were primarily designed for individual self-use. The following sections will mention two commonly used mobile-based applications contributing to psychological well-being.

1.3.3.1. Moodfit

Moodfit is a mobile application designed not only to improve physical health but also to enhance mental well-being. It has a mood journal and mood tracking functions, and it is based on CBT and mindfulness (May, 2023). By facilitating the continuity of individual fitness through effort, tracking, and motivational support, Moodfit builds a bridge between

psychological and physical health and presents a holistic approach to well-being (Talactac, 2021). Unlike chatbots' text or voice-based communication style, Moodfit aims to develop based on personal growth, based on data, and does not offer a direct chat setting. The main focus areas of Moodfit are stress management and procrastination (May, 2023). Although Moodfit does not offer a direct psychotherapy service to its users, it can be considered a digital guide that supports psychological and physical health.

1.3.3.2. Headspace

Headspace is a mobile-based application that offers mindfulness and meditation-based content to its users. It is also a well-being intervention program (Laurie & Blandford, 2016). Headspace is a platform with millions of users and an audio and visual guided meditation program. In an experimental study conducted to assess participants' stress levels, participants who used Headspace reported lower stress levels than those who did not (James, 2016). In another study, participants who used a mindfulness-based program in Headspace for 10 days showed a reduction in depressive symptoms compared to the control group (Howells et al., 2016). According to the results of these studies, Headspace is a successful and effective intervention program for psychological well-being.

1.3.4. AI-based psychotherapy attitude

Although AI-based psychotherapy applications facilitate people who would like to receive psychological help with easy and fast access, saving time, and financial comfort, it also raises some concerns regarding the protection of personal data, the lack of empathy skills, trust, and the inability to establish a therapeutic bond. AI-based psychotherapy has some advantages and disadvantages for mental health professionals. Mental health professionals can use these technologies to diagnose patients, manage medical records, and organize documents. Furthermore, many studies suggested that AI-based psychotherapy applications may lead to attitude differences for both mental health professionals and non-professionals. The following sections will present an overview of these different attitudes and factors shaping these attitudes.

1.3.4.1. Attitudes of non-professionals

According to a study conducted with 872 highly-educated individuals from different jobs, 55% of the participants showed a positive attitude towards AI-based psychotherapies (Aktan et al, 2022). It was also stated that gender is essential in determining the attitude. The researchers attribute male participants’ negative attitudes toward therapy to social pressure.

This study shows that male participants have the same AI-based psychotherapy attitude. In another study, 72% of participants stated they have a positive attitude toward AI use in psychotherapy. More than half of the participants said they would prefer to be informed about AI use in medicine (Wittal et al., 2023). In one study, ChatGPT was used as a psychotherapist for highly educated people who were receiving treatments for anxiety symptoms in a hospital. Findings showed that participants found ChatGPT's performance effective in treating anxiety disorders (Alanzi et al., 2024). Moreover, this study showed that the age factor should not be ignored while examining attitudes towards AI-based therapies. Young adults aged 18-30 stated that they found AI-based psychotherapies more trustworthy than other age groups (Alanzi et al., 2024). In this study, it was noted that the number of female participants who believe ChatGPT is effective and reliable in treating anxiety disorders is more than the number of male participants. This situation, like the study by Aktan and colleagues, reveals the importance of gender differences. Again, this study showed that attitudes toward AI-based therapies can be related to geographic factors. It was found that the attitudes of participants who live in urban areas are more positive than the attitudes of participants living in rural areas of a city (Alanzi et al., 2024). This finding might not be surprising as people who live in urban areas have higher digital device usage habits and have higher digital literacy than people who live in rural areas.

1.3.4.2. Attitudes of professionals

Studies to date have shown that there are different attitudes and opinions of mental health professionals on AI-based psychotherapies. Although most professionals' attitudes are primarily negative, some have opposing opinions about this issue and consider the benefits of using AI in psychotherapies. Aktan and his colleagues (2022) reported that professionals who work in the mental health field have a more negative attitude towards AI-based psychotherapies due to fear of losing their jobs. In a study conducted with psychiatrists, Doraiswamy and colleagues (2020) showed that 83% of participants believe that AI cannot provide as much empathetic care as a real psychotherapist. However, some participants think AI will be beneficial in diagnosing patients, managing medical records, and organizing documents. A necessary explanation for the psychiatrists' negative attitudes is that if AI takes away their jobs, psychiatrists will not be able to think as creatively as before (Doraiswamy et al., 2020). Another reason for participants' negative attitudes towards AI-based psychotherapies is their inability to make a comprehensive mental state analysis. Posthumus (2023) investigated the correlation between attitude and willingness towards AI-based therapy in 44 (mostly women) clinician participants who were actively practicing therapy.

Their results showed that the more the participants worried about the potential impacts of AI interfering with their jobs, the less they were willing to use AI-based tools in therapy. In another study, mental health professionals mentioned both the positive and negative sides of using AI in this field. Among the most important benefits, ease of accessibility of mental health services and reduced workload of therapists were reported. On the other hand, there are some opinions that an AI cannot replace a real therapist and can only be used as an assistant (Gültekin & Şahin, 2024). Lastly, in another study conducted with psychiatrists, most participants agreed that the collaboration of AI and people will benefit their professional practices (Blease et al., 2020). Moreover, psychiatrists are optimistic about the use of AI in psychotherapies since this will reduce costs and make it easier to access.

1.4. Importance of the Present Study

It is predicted that the adaptation of AI technologies, which have increased in use and development in recent years, in the psychotherapy will ease both people who struggle with a psychological disorder and mental health professionals. The number of studies conducted in this area has been increasing gradually. This study compares attitudes of the students from three different fields towards AI and AI-based psychotherapies. The contributions of the present study to the literature in this field are as follows:

Psychology students are the mental health professionals of the future. Understanding these students' AI-based psychotherapy attitude will lead them to determine their work field in the future. Also, psychologists can inform the public about how effective and ethical such technologies are in understanding people's thoughts and behaviors when adapted to the therapy setting. Learning the positive attitude that psychology students hold will pave the way for future psychotherapists to use AI in therapy settings. Psychology students with a negative attitude may feel that AI usage is ineffective due to ethical concerns or future worries. The present study will be essential to understanding how future psychotherapists adapt to technological advancements.

Understanding the attitudes of computer engineering students on this issue can influence the design, development, and application processes of AI-based psychotherapy technologies produced in the future. Their positive attitudes may show their willingness to work on these systems' effectiveness, accuracy, and trustworthiness. In other words, they may be more inclined to develop new techniques or methods. On the other hand, if computer engineering students think that AI-based psychotherapy systems are not be safe to use or

ethical, it can be understood that they will be more withdrawn about developing these systems.

Sociology students may present their perspectives on AI by evaluating social relations and cultures. Understanding their attitudes may help people figure out how to assess AI use in therapy in terms of different cultures and social classes. Sociology students can educate people about how the acceptance of AI may depend on the differences among social groups.

There are some advantages to conducting this study in Turkey. Firstly, the literature on this issue is limited. One specific scale, Attitudes Towards AI-based Psychotherapies (ATAIP), was developed by Turkish researchers (Aktan et al., 2022). Although studies refer to this scale frequently, it has been used in a few studies. Showing that this scale is used in the present study may lead to developing another scale like the ATAIP in Turkey. Because the items on the scale are few, this present study may expand this scale to receive more comprehensive results. In this way, there will be a chance to measure the other aspects that ATAIP does not consider. Moreover, understanding students' positive attitudes on this issue may help them to overcome the fear of being stigmatized for getting therapy, owing to the anonymity and privacy that AI-based therapies provide. This is essential as in Turkish society, getting therapy can sometimes be seen as a vulnerability or inadequacy.

Lastly, this study can help influence a multidisciplinary collaboration among these three fields. Computer engineers provide the necessary infrastructure for AI systems to work accurately and efficiently. They operate in the accuracy of algorithms and data security. On the other hand, psychologists express their opinions on the accuracy of using these systems in the therapeutic field. Sociologists can determine the impacts of these technologies on different cultures and identify who can benefit from them. This way, essential steps will be taken to understand human behavior and develop systems accordingly. Individuals who wish to benefit from these systems make their decisions with trust because they know that professionals work collaboratively.

1.5. Aim and Hypotheses of the Present Study

This study examines AI and AI-based psychotherapy attitudes and how these attitudes change according to certain factors. Third—and fourth-year Turkish psychology, sociology, and computer engineering students' AI and AI-based psychotherapy attitudes will be examined in this context. This study will also examine participants' help-seeking attitude as a control variable.

The hypotheses of the study are as follows:

1. There is a significant positive relationship between positive AI attitude and AI-based psychotherapy attitude for all three groups.
2. There is a significant difference in AI attitude and AI-based psychotherapy attitude between computer engineering students and psychology students. Psychology students have a more negative AI-based psychotherapy attitude and AI attitude.
3. There is a significant difference in AI attitude and AI-based psychotherapy attitude between computer engineering students and sociology students. Sociology students have a more negative AI-based psychotherapy attitude and AI attitude.
4. There is no significant difference in AI-based psychotherapy attitude and AI attitude between sociology and psychology students.
5. There is a significant difference in AI-based psychotherapy attitude and AI attitude among computer engineering students, psychology students, and sociology students, after controlling for help-seeking attitude.

2. METHOD

2.1. Participants

An a priori power analysis was conducted on G*Power Software 3.1 (Faul et al., 2009) to find the minimum sample size for this study. The parameters used for the power analysis were as following: ANOVA as a statistical test, the effect size of 0.25, number of groups three, and power of 0.90. Based on the calculations, the total sample size should have been minimum 206. The sample size consisted of 229 participants. The age range of the participants was 20-30. The participants in this study were third and fourth-year psychology, sociology, and computer engineering students. Participants' average age was 23.06. 139 participants identified as female, and 90 participants as male. Among the participants, there were 77 psychology, 76 computer engineering, and 76 sociology students. Of the respondents, 103 were third-year students, and 126 were fourth-year students. Participants who stated that they have never received psychotherapy before made up 55% of the total sample (see Table 2.1.).

Table 2.1.

Descriptive Statistics of Demographic Variables

Demographic Variables	*n*	Min	Max	*M*	*%*
Age		20	30	23.06	
Gender					
Female	139				60.70
Male	90				39.30
Department					
Psychology	77				33.62
Computer Engineering	76				33.19
Sociology	76				33.19
Class					
3rd	103				45.00
4th	126				55.00

Note. M = Mean, *n* = Sample of the study.

2.2. Materials

2.2.1. Informed consent form

The informed consent form started with a short overview of the research study. Then, participants were informed of their rights, any potential risks and benefits of participating in this study. Confidentiality of personal information was assured and participants were informed that their information will only be used for research purposes. Participation in this study was entirely voluntary, and the option to withdraw at any time was available. For additional information, participants were told that they may contact the researcher via the e-mail address provided (see Appendix 1).

2.2.2. Demographics form

The demographics form asked participants to provide the following information about themselves: age, gender, their department, year of study, psychotherapy experience, the extent to which psychotherapy is helpful (see Appendix 2).

2.2.3. General Attitudes Towards Artificial Intelligence Scale (GAAIS)

General Attitudes Towards Artificial Intelligence Scale (GAAIS) is a self-report scale developed and validated by Schepman and Rodway (2020). The purpose of developing this scale is to measure individuals' positive and negative attitudes toward AI. The scale has two subdimensions: Positive GAAIS and Negative GAAIS. Positive GAAIS items measure positive attitudes toward AI and Negative GAAIS items measure negative attitudes toward AI. The scale has 20 items. First 12 items measure positive attitude towards AI, last eight of them measure negative attitude. The items on the scale are rated by a five-point Likert-type rating scale (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly agree). The items measuring the attitude towards negative aspects are reverse-scored (items 13-20). Meaning, receiving high scores for these items shows that the individual is tolerant towards the negative aspects of AI. After the negative items are reverse-scored, overall means for positive and negative items calculated separately. Higher scores indicate a more positive attitude toward AI in both dimensions. The internal consistency reliability scores for Positive GAAIS is $\alpha = .88$, and for Negative GAAIS is $\alpha = .83$.

The Turkish standardization study of GAAIS was conducted by Kaya et al. (2022). The confirmatory factor analysis results showed similar internal consistency coefficient

scores as Schepman and Rodway (α = .82 for Positive GAAIS and α = .84 for Negative GAAIS). The split-half reliability was also found as *r* = .77 for Positive GAAIS and *r* = .83 for Negative GAAIS. The approximate time needed for filling the scale is five minutes (see Appendix 4). The alpha coefficients of this scale were calculated as .86 for this study, indicating a good internal reliability.

2.2.4. Attitudes Towards AI-based Psychotherapy Scale (ATAIP)

Attitudes Towards AI-Based Psychotherapy Scale (ATAIP) was developed utilizing the Service Robot Integration Willingness Scale (Özkan et al., 2020). Aktan et al. (2022) developed ATAIP as a six-item questionnaire. The purpose of developing this scale is to measure individuals' attitudes towards AI-based psychotherapy. Davis Technique was used to compute the Content Validity Index (CVI) of the scale. Since all the items on the scale got the CVI score above .80, the content validity of the scale is considered appropriate. The items are rated by a five-point Likert-type rating scale (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly agree). Higher scores show a more positive attitude towards AI-based psychotherapy. Internal consistency reliability of the scale is found as α = .87. The approximate time needed for filling the scale is two minutes (see Appendix 5). The alpha coefficients of this scale were calculated as .87 for this study, indicating good internal reliability.

2.2.5. Attitudes Toward Seeking Professional Psychological Help Scale - Short Form (ATSPPHS - SF)

Attitudes Toward Seeking Professional Psychological Help Scale - Short Form (ATSPPHS - SF) was developed by Fischer and Farina (1995). This scale is the short version of a 29 item scale which measures individuals' attitude toward receiving professional psychological help (Fischer & Turner, 1970). The purpose of this scale is to understand and measure individuals' attitudes toward receiving professional psychological help. The scale consists of 10 items. The items on the scale are rated by a four-point Likert-type rating scale (1: Disagree, 2: Partly disagree, 3: Partly agree, 4: Agree). The scale has reverse-scored items (items 2, 8, 9, and 10). After these reverse items get scored, the total score is obtained by summing the scores of all items. Higher scores indicate a more positive attitude toward seeking professional psychological help. Fischer and Farina (1995) found the test-retest reliability of the scale, measured with a one-month interval, to be *r* = .80 and the internal

consistency coefficient to be α = .84.

The Turkish standardization study of ATSPPHS - SF was conducted by Topkaya (2011). Results of the confirmatory factor analysis showed that the t-statistics of the third item on the scale was not found significant so it was reviewed. Subsequently, it was removed from the study because it was decided that the item was not suitable for Turkish culture. The lower score that can be gotten from the scale is 0, the higher score is 30. It was found that the internal consistency coefficient of the scale is α = .76. The approximate time needed for filling the scale is three minutes (see Appendix 6). The alpha coefficients of this scale were calculated as .79 for this study, indicating acceptable internal reliability.

2.3. Procedure

The survey was prepared using the Qualtrics platform. Data was collected using a convenience sampling procedure. The survey was distributed on social media platforms (WhatsApp, Instagram, Telegram, and LinkedIn) to obtain a sufficient number of participants. When participants clicked on the survey link, they first saw the informed consent form. If they met the eligibility criteria for participation and indicate their voluntariness, they received the demographic form, followed by the GAAIS, ATSPPHS-SF, and ATAIP scales in this order. Participants were not given any chance to leave any item blank. If they did, they were not allowed to proceed to the next page. The survey took approximately 15 minutes to complete.

2.4. Design

This study included participants from third and fourth - year psychology, sociology, and computer engineering students. Department is the independent variable in this study. This independent variable has three levels as psychology students, sociology students, and computer engineering students. AI attitude and AI-based psychotherapy attitude are the dependent variables. Help-seeking attitude was used as a control variable. Pearson's correlation test was conducted to see the relationship between AI attitude and AI-based psychotherapy attitude. Multivariate Analysis of Variance (MANOVA) was used to see the differences between groups. Multivariate Analysis of Covariance (MANCOVA) was used to control for the effects of help-seeking as a covariate.

3. RESULTS

This section reports the total participant count, outliers, and normality assumption. Then, descriptive statistics, correlation analysis, and inferential statistics were presented in order.

395 people responded to the survey. Incomplete responses (N = 107) were excluded from the study. Because some respondents' duration of completing the survey was not considered enough to read and understand the items (duration < 120"), their data was also excluded (N = 53). There was no missing data in the dataset. SPSS 27.0 was used for the data analysis of this research.

The mean scores of two subscales (positive and negative items) of the General Attitudes Toward Artificial Intelligence Scale (GAAIS) are calculated separately (GAAIS positive and GAAIS negative, respectively). The reverse coding process was applied for the negative attitude items, and then the mean score was calculated. The mean scores of the items in the Attitudes Toward AI-Based Psychotherapy Scale (ATAIP) are calculated. Lastly, the four items of Attitudes Toward Seeking Professional Psychological Help Scale - Short Form (ATSPPHS-SF) were reverse-coded, and then the total scores of each participant's response was calculated.

Z-scores have been calculated for dependent variables, and six univariate outliers have been found (p < -3.29 or p > +3.29). Mahalanobis Distance was calculated, and two multivariate outliers were found (p < .001). Tests for the assumption of normality and the hypotheses were computed before and after excluding the outliers. Since the normality assumption was still met and the significance of the analysis results remained the same, outliers were removed from the study. As a result, the final sample size consisted of 229 participants.

As a first step, the distribution of the the variables were examined to see if they were normally distributed. Therefore, the skewness and kurtosis values of the mean and total scores of the scales were calculated. Skewness and kurtosis values should be between -1.5 ile +1.5 for the data set to be normally distributed (Tabachnick & Fidell, 2013). The calculations demonstrated that GAAIS positive scores (skewness: -.25, kurtosis: .21), GAAIS negative scores (skewness: .13, kurtosis: -.00), ATAIP scores (skewness: -.08, kurtosis: -.29), and ATSPPHS-SF scores (skewness: .03, kurtosis: -.14) were all normally distributed. Homogeneity of variance assumption was examined by using Levene's Test,

which showed that this assumption was metfor all variables ($p > .05$).

3.1. Descriptive Statistics

The demographic information for the participants is shown in Table 2.1. under the Method section. Participants' average age was 23.06 (*SD* = 2.44, Range = 20-30). 139 participants identified as female (60.70%), and 90 participants as male (39.30%). Among the participants, there were 77 psychology (33.62%), 76 computer engineering (33.19%), and 76 sociology (33.19%) students. Of the respondents, 103 were third-year students, and 126 were fourth-year students. Participants who stated that they have never received psychotherapy before made up 55% of the total sample.

Table 3.1. shows the mean, standard deviation, minimum, and maximum values calculated for GAAIS positive, GAAIS negative, ATAIP, and ATSPPHS-SF for groups and the total sample.

Table 3.1.

Descriptive Statistics for Dependent Variables

Measures	Group	*n*	*M*	*SD*	Min	Max
Dependent Variables						
GAAIS positive	Psychology	77	3.67	0.62	1.92	5.00
	Computer engineering	76	4.02	0.54	2.50	5.00
	Sociology	76	3.54	0.55	1.83	5.00
	Total	229	3.75	0.60	1.83	5.00
GAAIS negative	Psychology	77	2.91	0.66	1.38	4.50
	Computer engineering	76	2.83	0.66	1.25	4.75
	Sociology	76	3.06	0.61	1.38	4.38
	Total	229	2.93	0.65	1.25	4.75
ATAIP	Psychology	77	2.57	0.82	1.00	5.00
	Computer engineering	76	2.90	0.74	1.00	5.00
	Sociology	76	2.53	0.88	1.00	4.17
	Total	229	2.66	0.83	1.00	5.00
ATSPPHS-SF	Psychology	77	21.32	3.28	12.00	30.00
	Computer engineering	76	17.74	3.57	9.00	26.00
	Sociology	76	19.47	3.73	11.00	29.00
	Total	229	19.52	3.81	9.00	30.00

Note. n = Sample of the study, M = Mean scores, SD = Standard deviation, GAAIS positive = Mean scores of positive items in General Attitude Towards Artificial Intelligence Scale, GAAIS negative = Mean scores of negative items in General Attitude Towards Artificial Intelligence Scale, ATAIP = Mean scores of items in Attitudes Towards AI-based Psychotherapy Scale, ATSPPHS-SF = Total scores of items in Attitudes Toward Seeking Professional Psychological Help Scale - Short Form.

3.2. Correlation Analysis

Pearson correlation coefficients were computed to examine the relationships between department, GAAIS positive, GAAIS negative, ATAIP, and ATSPPHS-SF scores (see Table 3.2.).

First, the correlation between GAAIS positive scores and ATAIP scores for each department was examined. According to these results, the first hypothesis that suggested a significant positive relationship between AI attitude and AI-based psychotherapy attitude scores for all three groups was supported for GAAIS positive [psychology: $r(75) = .26$, $p < .05$; computer engineering: $r(74) = .40$, $p < .01$; sociology: $r(74) = .46$, $p < .01$].

Then the relationship between ATAIP and ATSPPHS-SF for each department examined. This analysis revealed a significant negative relationship between ATAIP and ATSPPHS-SF scores for psychology students [$r(75) = -.33$, $p < .01$]. This significant relationship was not observed in sociology [$r(74) = -.21$, $p > .05$] and computer engineering students [$r(74) = .02$, $p > .05$]. Lastly, a significant negative relationship was found between ATAIP and ATSPPHS-SF scores for the overall sample, collapsing across the departments [$r(227) = -.23$, $p < .01$].

Table 3.2.

Correlations between Study Variables

Groups	Dependent Variables	1.	2.	3.	4.
Psychology	1. GAAIS positive	-	-.45**	.26*	.08
	2. GAAIS negative		-	-.05	-.20
	3. ATAIP			-	-.33**
	4. ATSPPHS_SF				-
Computer Engineering	1. GAAIS positive	-	-.01	.40**	.14
	2. GAAIS negative		-	-.10	.12
	3. ATAIP			-	.02
	4. ATSPPHS_SF				-
Sociology	1. GAAIS positive	-	-.46**	.46**	-.03
	2. GAAIS negative		-	-.34**	.02
	3. ATAIP			-	-.21
	4. ATSPPHS_SF				-
Total Sample	1. GAAIS positive	-	-.33**	.41**	-.03
	2. GAAIS negative		-	-.18**	.00
	3. ATAIP			-	-.23**
	4. ATSPPHS_SF				-

Note. GAAIS positive = Mean scores of positive items in General Attitude Towards Artificial Intelligence Scale, GAAIS negative = Mean scores of negative items in General Attitude Towards Artificial Intelligence Scale, ATAIP = Mean scores of items in Attitudes Towards AI-based Psychotherapy Scale, ATSPPHS-SF = Total scores of items in Attitudes Toward Seeking Professional Psychological Help Scale - Short Form.
**$p < .01$. *$p < .05$.

3.3. Inferential Statistics

A One-Way MANOVA was conducted to compare the differences for GAAIS and ATAIP scores between psychology, computer engineering, and sociology students (see Table 3.3.). Pillai's Trace value was reported since the assumption of homogeneity was not met. Results indicated a significant difference between departments for GAAIS and ATAIP scores $F(6, 450) = 4.86$, $p < .001$, $\eta p2 = .06$. The analysis results revealed that the department differed significantly in GAAIS positive scores, $F(2, 226) = 14.18$, $p < .001$, $\eta p^2 = .11$, and ATAIP scores $F(2, 226) = 4.62$, $p = .01$, $\eta p^2 = .03$, but not in GAAIS negative scores $F(2, 226) = 2.39$, $p < .09$, $\eta p^2 = .02$.

Post-hoc tests were conducted to see the differences among the groups. Results showed that computer engineering students had higher GAAIS positive scores (M = 4.02, SD = 0.54) than psychology students (M = 3.67, SD = 0.62) (see Figure 3.1.). Likewise, computer engineering students had higher ATAIP scores (M = 2.90, SD = 0.74) than psychology students (M = 2.57, SD = 0.82). Also, computer engineering students' GAAIS negative scores (M = 2.83, SD = 0.66) were lower than psychology students' (M = 2.91, SD = 0.66). The second hypothesis was supported, suggesting a significant difference in both AI-based psychotherapy attitude and AI attitude scores between computer engineering students and psychology students. Psychology students have lower AI-based psychotherapy attitude and AI attitude scores.

Furthermore, computer engineering students had higher GAAIS positive scores (M = 4.02, SD = 0.54) than sociology students' (M = 3.54, SD = 0.55). Also, computer engineering students have had lower GAAIS negative scores (M = 2.83, SD = 0.66) than sociology students' (M = 3.06, SD = 0.61). Lastly, computer engineering students had higher ATAIP scores (M = 2.90, SD = 0.74) than the sociology students (M = 2.53, SD = 0.88). The third hypothesis was supported, suggesting a significant difference in both AI-based psychotherapy attitude and AI attitude scores between computer engineering students and sociology students. Sociology students have lower AI-based psychotherapy attitude and AI attitude scores.

No significant difference was found between psychology and sociology students' GAAIS positive scores and negative scores. For ATAIP scores, no significant difference was found between psychology and sociology students. The fourth hypothesis was also supported, suggesting no significant difference in AI-based psychotherapy attitude and AI attitude scores between sociology and psychology students.

Table 3.3.

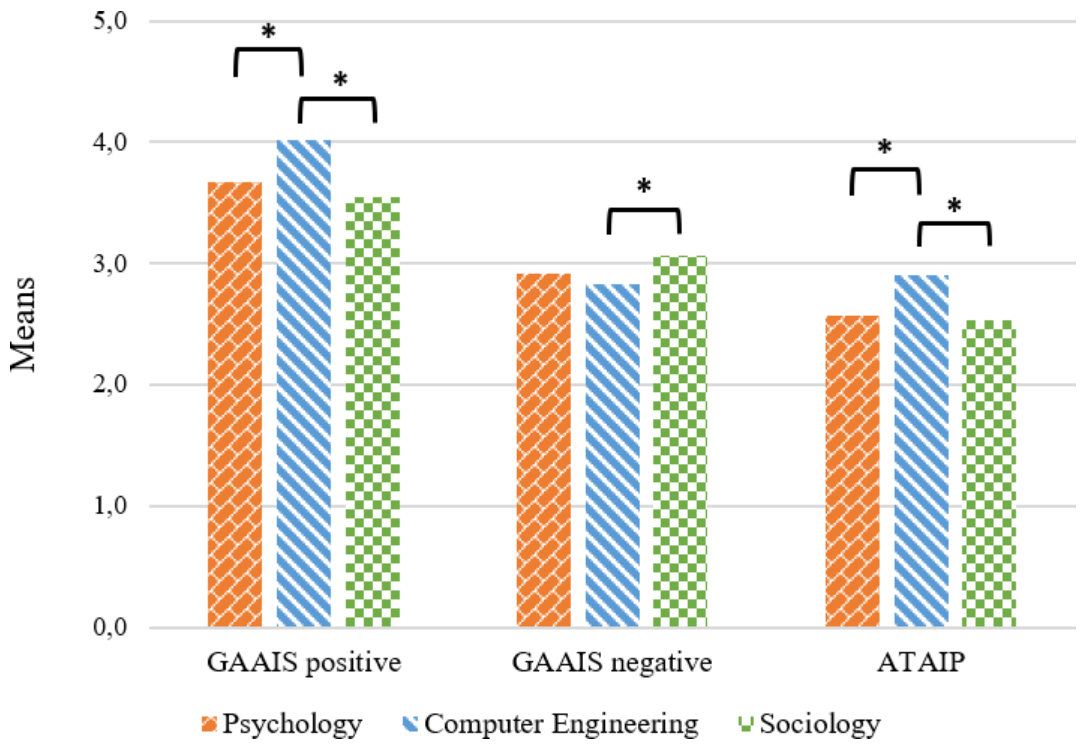
MANOVA Results for Differences in AI Attitude and AI-based Psychotherapy Attitude among Departments

Dependent Variable	Psychology		Computer Engineering		Sociology		*F*	*df*	*p*	ηp^2
	M	*SD*	*M*	*SD*	*M*	*SD*				
GAAIS positive	3.67	0.62	4.02	0.54	3.54	0.55	14.18	2	< .00	.11
GAAIS negative	2.91	2.83	2.83	0.66	3.06	0.61	2.39	2	.09	.02
ATAIP	2.57	2.90	2.90	0.74	2.53	0.88	4.62	2	.01	.03

Note. M = Mean scores, *SD* = Standard deviation, GAAIS positive = Mean scores of positive items in General Attitude Towards Artificial Intelligence Scale, GAAIS negative = Mean scores of negative items in General Attitude Towards Artificial Intelligence Scale, ATAIP = Mean scores of items in Attitudes Towards AI-based Psychotherapy Scale.

Figure 3.1.

Mean Values of AI Attitude and AI-based Psychotherapy Attitude Among Groups



*$p < .05$

A One-way MANCOVA was conducted to investigate whether GAAIS and ATAIP scores differ significantly between psychology, computer engineering, and sociology students, after controlling for the ATSPPHS-SF scores (see Table 3.4.). Before conducting MANCOVA, the correlation between the independent variable and the covariate was tested. A significant negative relationship was detected between these two variables [$r(227) = -.20$, $p < .05$]. The assumption of homogeneity of regression slopes was met for the dependent variables ($p > .05$).

The covariate had a significant effect on ATAIP scores, $F(1, 226) = 8.62$, $p < .05$, $\eta p^2 = .03$. After controlling for ATSPPHS-SF scores, the effect of department on ATAIP scores was no longer significant. The effect of department was only significant for GAAIS positive scores $F(2, 225) = 14.49$, $p < .001$, $\eta p^2 = .11$. Post-hoc comparisons showed that both psychology ($M = 3.65$) and sociology ($M = 3.55$) students had lower GAAIS positive scores compared to computer engineering ($M = 4.04$) students. There was no significant difference between psychology and sociology students. The last hypothesis supporting a significant difference in AI-based psychotherapy attitude and AI attitude between computer engineering students, psychology students, and sociology students, after controlling for help-seeking attitude, was partially supported.

Table 3.4.

MANCOVA Results for the Effects of Covariate on Dependent Variables

Source	Dependent Variable	Psychology	Computer Engineering	Sociology	*F*	*df*	*p*	ηp^2
		M	*M*	*M*				
ATSPPHS-SF	GAAIS positive	3.65	4.04	3.55	0.91	1	.34	.00
	GAAIS negative	2.91	2.83	3.06	0.04	1	.82	.00
	ATAIP	2.65	2.82	2.52	8.62	1	.00	.03
Department	GAAIS positive	3.65	4.04	3.55	14.49	2	.00	.11
	GAAIS negative	2.91	2.83	3.06	2.41	2	.09	.02
	ATAIP	2.65	2.82	2.52	2.42	2	.09	.02

Note. M = Mean, GAAIS positive = Mean scores of positive items in General Attitude Towards Artificial Intelligence Scale, GAAIS negative = Mean scores of negative items in General Attitude Towards Artificial Intelligence Scale, ATAIP = Mean scores of items in Attitudes Towards AI-based Psychotherapy Scale, ATSPPHS-SF = Total scores of items in Attitudes Toward Seeking Professional Psychological Help Scale - Short Form.

4. DISCUSSION

With the development of technology, AI has been integrated into various fields. AI systems have frequently been mentioned and have gained significant attention in large fields such as healthcare, finance, and education. With its automation process's help, daily routines are relatively more straightforward and benefit individuals with speed, convenience, and efficiency. Along with these, the start of the studies in the mental health field caused significant discussions. AI-based psychotherapy systems provide an alternative approach to the traditional face-to-face psychotherapies used today. Despite its benefits such as the affordable access, compared to conventional therapy - and 24/7 availability, it causes some criticism and negative attitudes from both mental health professionals and other people due to its various disadvantages. Previous studies have examined the reasons for these negative attitudes, which include the inability of the AI-based psychotherapy systems to empathize, difficulties forming a therapeutic alliance, data privacy and security problems, and biases against some individuals. Factors such as gender, education level, field of profession, and age can be counted as the determinants of individuals' attitudes toward these technologies and AI-based psychotherapy.

Although several studies have been conducted on AI and AI-based psychotherapy systems in the literature, studies examining and comparing students' attitudes from different disciplines are limited. Therefore, the current study examined the attitudes of psychology, computer engineering, and sociology students as well as how their help-seeking attitude affects their AI and AI-based psychotherapy attitudes. The importance of studying the attitudes of students from three different disciplines is as follows: Since psychology students are the future mental health professionals, understanding their attitudes and ideas is significant. These students are training to become professionals who inform people about how these technologies can be effective, particularly in their integration into psychotherapy for understanding and evaluating feelings and thoughts. Understanding about computer engineering students' attitudes is also invaluable, as they will have a significant say in the correct design, development, and application processes of these AI-based systems. If this topic is to be evaluated from a societal perspective, help should be obtained from future sociologists. Sociology students can examine AI-based psychotherapy systems in terms of social relations and cultures. Their attitudes will be necessary to understand how people's attitudes towards these technologies can be shaped through social interactions. Therefore,

sociology students will be the ones who help the public to know how much AI is accepted or rejected across different societies.

The present study's results are discussed in light of the literature findings. The discussion concludes with the clinical implications, strengths, limitations, and suggestions for future studies.

4.1. Evaluation of the Results

4.1.1. Relationships among AI attitudes, AI-based psychotherapy attitudes, and help-seeking attitudes

The present study found a significant positive relationship between positive AI attitude and AI-based psychotherapy attitude. In other words, the more positively individuals' see AI, the more positively they see AI-based psychotherapy. The current findings align with previous research. Specifically, present study's results are in line with those of Aktan and colleagues (2022), who reported similar results among women working in engineering. Women reported being more knowledgeable about AI, so they adopted AI-based psychotherapy more than others (Aktan et al., 2022). Another study that yielded similar findings was Kleine et al. (2023). The authors found that the more mental health professionals incorporated AI into their personal lives, the more positively they viewed the use of AI-based psychotherapies. Aktan and his colleagues' study also implied something similar. Among mental health professionals, the positive relationship between their AI attitude and their use of AI is associated with their knowledge about AI (Aktan et al., 2022). A qualitative study by Götzl and his colleagues (2022) suggested that most participants who develop a positive AI attitude do not consider using AI in psychotherapy problematic. The findings suggest that greater knowledge about AI is connected to a more positive AI attitude, which, in turn, is positively correlated with AI-based psychotherapy attitude.

If mental health professionals are not knowledgeable about AI technologies, they hold a more negative AI-based psychotherapy attitude (Harmsel et al., 2023). Lack of sufficient knowledge about AI makes people more concerned about integrating AI into their professional lives. Likewise, participants who develop a negative AI attitude state their unwillingness to integrate AI in psychotherapy (Götzl et al., 2022). Lastly, Zhang and Wang (2024) suggested a relationship between AI attitude and AI-based psychotherapy attitude. In particular, the advantages AI-based psychotherapy has, such as easy access to AI, being cost-

effective, and reducing social stigma, may help individuals to view AI-based psychotherapy as more favorable. Thus, the present findings, in line with the existing literature, suggest that individuals' knowledge about AI plays a pivotal role in shaping both their AI attitudes and AI-based psychotherapy attitudes, with positive AI attitude consistently associated with more favorable views of AI-based psychotherapies.

A study conducted with professionals, including those in mental healthcare, showed that high knowledge levels and positive AI attitudes do not always lead to positive AI-based psychotherapy attitudes (Habib et al., 2024). Participants believed that AI-based psychotherapy systems cannot be as successful as human healthcare professionals since they cannot be empathetic like them (Habib et al., 2024). This shows that being knowledgeable about AI and having a positive AI attitude does not guarantee the adoption of AI-based psychotherapy. Moreover, based on interviews conducted with students with higher education levels, Zhang and colleagues found that (2024), positive AI attitudes are higher only when humans are in control. The participants believed that AI cannot understand complicated emotional states. Therefore, they cannot be as successful as a human therapist in forming a therapeutic bond (Zhang et al., 2024). These findings are inconsistent with the findings of the present study.

The results of the present study suggest a significant negative relationship between AI-based psychotherapy attitude and help-seeking attitude. In other words, as individuals' help-seeking attitudes become more negative, their AI-based psychotherapy attitudes become more positive. Various studies have been conducted to determine the reasons for this situation. Results from Aktan and colleagues' study suggested that (2022), people believed that seeing a human therapist face-to-face may be time-consuming and embarrassing. This might be one of the reasons for the increase in the tendency towards AI-based psychotherapies. Other studies revealed significant relationships between help-seeking attitude and attachment styles (Nam & Lee, 2015; Diener & Monroe, 2011). A study revealed that attachment styles are one of the reasons adults do not prefer face-to-face psychotherapy. Because adults with a secure attachment style are more willing to get along with their psychotherapists, they are better at forming a therapeutic alliance compared to other adults (Diener & Monroe, 2011). These people may be more cautious towards AI-based psychotherapy because they may have difficulties establishing trust relationships. In another study, college students reported that they preferred seeking help from human psychotherapists rather than AI-based psychotherapy (Wysa, Woebot, etc.). In other words, there was a significant negative relationship between AI-based psychotherapy attitude and

help-seeking (from a human therapist) attitude (Rehman & Sajjad, 2025). This may stem from the fact that university students are more inclined to trust humans than chatbots in help-seeking, as they believe they cannot establish the necessary therapeutic bond. Furthermore, a study conducted in Hong Kong revealed that students prefer to communicate with a human rather than an AI when they want to seek help because they believed that human therapists form more intimate, strong, and authentic communication (Ka Yuk Chan, 2025).

Nonetheless, some studies report findings inconsistent with those of the present study. According to Shang and colleagues (2019), people seeking professional psychological help tend to prefer AI-based psychotherapy or mobile-based interventions over human therapists, as these technologies provide a more private setting and prevent social stigma. Another study suggests that people seeking help are more likely to communicate with chatbots than humans. One reason for this is the idea that chatbots are less likely to judge them (Boucher et al., 2021). These two studies show that people believe communication with AI-based psychotherapy does not trigger their feelings of embarrassment or judgment. People with such concerns seeking professional help may refrain from engaging with a human psychotherapist for these reasons. These findings reveal that AI-based or human-based psychotherapy attitudes can change depending on various factors.

4.1.2. Relationships between departments and attitudes

The current findings revealed that psychology students scored lower than computer engineering students in terms of their AI-based psychotherapy attitude. In other words, computer engineering students hold a more positive AI-based psychotherapy attitude than psychology students. Although studies conducted with students from these fields are limited, there are existing studies in the literature conducted with professionals in these fields. Aktan and colleagues' study results are consistent with the present study's findings. They found that the AI-based psychotherapy attitudes of people who work in mental health are lower than those who work in other fields, including engineering (Aktan et al., 2022).

The present study presents important findings about the attitudes of professionals in the field. To interpret the results of the present study, a possible reason for less positive AI-based psychotherapy attitude of psychology students may be the fear of losing their jobs. This problem was also mentioned in Aktan and colleagues' study. Apart from this reason, mental health professionals view AI-based psychotherapy negatively as they see AI as incapable of giving empathetic care and its data security problems (Aktan et al., 2022).

Another study, which was conducted about the attitude of clinicians and patients, revealed that psychologists held negative AI-based psychotherapy attitude (Aafjes-van Doorn, 2024). These studies reflect professionals' attitudes and provide consistent findings with the present study conducted with students. However, another study conducted by Cross and colleagues (2024) revealed that mental health professionals were highly interested in using AI in their jobs. They had a positive AI-based psychotherapy attitude since these technologies make mental healthcare systems more accessible (Cross et al., 2024). Likewise, based on the interviews conducted with 21 mental health counselors, Hirsch et al. (2018) found that integrating AI technologies in the mental health field convenient and practical. These findings are inconsistent with the findings of the present study.

The present study also revealed that psychology students scored lower on the positive AI attitude than computer engineering students'. In other words, computer engineering students held a more positive AI attitude compared to psychology students. A study whose participants included psychologists and computer engineers revealed that, since psychologists do not have as much technical knowledge about AI as computer engineers, they tend to approach AI more cautiously and perceive it as more threatening than computer engineers (Orben, 2020, as cited in Gado & Kempen, 2022). This attitude of psychologists overlaps with the feelings of fear of the unknown, which refers to the anxiety towards unfamiliar or uncertain situations (Carleton, 2016). To change the attitudes more positive, it was suggested that psychologists need to be more aware and knowledgeable about the use of AI (Gado & Kempen, 2022). A recent study suggested that computer engineering students' AI attitude was positive. The authors attributed this to the familiarity of these students with AI (Weichert & Eldardiry, 2024). The attitudes of these students may also be explained by their high self-efficacy toward AI knowledge. The more familiar an individual is with AI, the higher they believe in their ability to control and handle it. Yadrovskaia et al. (2023) conducted a study with participants in technical science, medical science, and human sciences and found that those working in technical science were more likely to use AI in their jobs than in other fields (Yadrovskaia et al., 2023). As a result, AI and AI-based psychotherapy attitudes differed not only among professionals but also among students. Professionals and students working in engineering and other technical fields were more positive towards these technologies than mental health professionals or their students.

Examining technological developments from a sociological perspective can give information about the feasibility of these technologies in different cultures and societies. Therefore, it is crucial to learn the attitudes and perceptions of future sociologists towards

AI and AI-based psychotherapies regarding societal and cultural perspectives. Sociological research on AI evaluated the ethical, cultural, and social outcomes of AI systems and how societal changes impact AI systems (Akbaş, 2024). In sociology literature, studies defined AI as a societal problem. Although no specific studies on the AI-based psychotherapy attitudes of sociologists or sociology students were conducted, various sociologists emphasized the importance of examining AI from a sociological perspective. They also suggested that the increasing prevalence of AI may result in some adverse outcomes in societies. The most essential societal outcomes of the increased adoption of AI were considered as the transformation of jobs, job losses, and consequently, bringing some social inequalities (Adaş & Erbay, 2022). With the development of AI, the social inequality created by people who can or cannot access these technologies is gradually becoming a large problem. While this means a development for some societies or individuals, for others, it means falling behind for the rest.

The results of the current study documented that sociology students had less positive AI-based psychotherapy attitudes and positive AI attitude than computer engineering students. Moreover, the present study revealed no significant difference between the scores of sociology and psychology students in the AI-based psychotherapy attitude and positive AI attitude. In other words, the attitudes of psychology and sociology students to AI and AI-based psychotherapy were similar. Although there are no other studies investigating the attitudes of sociologists, when existing concerns are considered, it can be said that future sociologists will approach AI and AI-based psychotherapies cautiously.

4.1.3. The role of help-seeking attitudes in shaping AI-based psychotherapy attitudes

The present findings suggest positive AI attitude differences among departments still exist after controlling for the help-seeking attitude. In other words, the positive AI attitude of students is not affected by their help-seeking attitude. However, after controlling for the help-seeking attitude, a significant difference in the AI-based psychotherapy attitude no longer existed among departments. So, this substantial difference in AI-based psychotherapy attitude may be explained by the help-seeking attitudes of students. Hence, this situation shows that help-seeking attitude can help shape other attitudes. Although studies examining the relationship between AI-based psychotherapy and help-seeking attitudes are limited, Aktan and colleagues (2022) documented how individuals' help-seeking attitudes shape

their AI-based psychotherapy attitudes. Individuals with a negative help-seeking attitude also held lower AI-based psychotherapy attitudes. Because of factors such as stigmatization and embarrassment about talking about private matters, they reported that people may become unwilling to talk to a human therapist. Again, the same people also did not prefer AI-based psychotherapy for reasons such as inability to empathize and form a real therapeutic bond (Aktan et al., 2022). Findings of the present study join those of Aktan his colleagues by emphasizing how the help-seeking attitude may shape individuals' AI-based psychotherapy attitude.

In another study, Rackoff et al. (2025) found a negative relationship between the help-seeking attitude and the AI-based psychotherapy attitude, due to participants finding these systems useless. However, the participants with a positive help-seeking attitude reported that they found face-to-face therapy more effective. In another study, although people have a stigma fear when they attend a face-to-face therapy, this fear is not that visible when they receive help from an AI-based psychotherapy (Varghese & Sharma, 2024). Lastly, another study found a significant positive correlation between AI-based psychotherapy and help-seeking attitudes. People willing to receive psychological help also stated that getting this help from an AI-based system was an essential alternative for everyone (Albikawi et al., 2025). Considering these findings, individuals' AI-based psychotherapy attitudes are shaped by technological or ethical concerns and their help-seeking attitudes.

4.1.4. Clinical implications

Under this section, several issues will be addressed to aid in clinically interpreting the present study's findings and provide implications for the professional field. The findings of this study revealed that students hold differences in their AI and AI-based psychotherapy attitudes based on the department. Moreover, when the help-seeking attitude was examined as a covariate, the disappearance of group differences showed that help-seeking attitude can shape AI-based psychotherapy attitudes.

The development of AI-based psychotherapies today has led to questions about psychologists' attitudes. The unwillingness of the psychology students to adopt these technologies may stem from factors such as their professional and ethical concerns. However, future psychologists' negative attitudes, especially those planning to specialize in clinical psychology, may hinder the development of AI-based psychotherapy systems. Alternatively, these attitudes may restrict the integration of AI systems into psychotherapy

processes. These cautious approaches may be necessary regarding the sustainability and protection of human-based psychotherapy systems. Moreover, these approaches may be helpful for psychology students, particularly those intending to pursue a career in clinical psychology, to prevent their field from being overtaken by AI. However, it should not be ignored that AI-based psychotherapies have positive aspects as well as negative ones. Ignoring its potential benefits will not be the correct approach. This is why psychology students should be aware of the possible adverse outcomes of AI-based psychotherapy systems and take the necessary precautions against security and ethical problems. Incorporating elective courses that emphasize ethical perspectives on technological advancements and artificial intelligence systems into the curriculum of undergraduate psychology programs can be a good first step towards increasing the familiarity of psychology students with AI systems. The development and requirement of classes such as "AI and Ethics in Psychotherapy" as part of psychology curricula may provide students with both theoretical knowledge and case discussions surrounding AI and psychotherapy. These courses will be significant in both keeping in pace with technological advancements and fostering students' critical thinking skills.

It is valuable to consider psychologists' AI-based psychotherapy attitude not solely from a professional standpoint, but also how these attitudes are conveyed to their clients or the public. Suppose professionals perceive AI as a substantial threat to the mental healthcare field and hinder people from being aware of this issue. In this case, they may instill fear, insecurity, and resistance towards AI-based psychotherapies in their clients. This issue is not only about psychologists' professional development, but also their responsibility to inform their environment correctly and rationally. As a result, psychologists need to be open-minded, knowledgeable, and critical of this issue for their professional development and in shaping public attitudes. Therefore, it is essential to consider how AI is understood and approached in the society, particularly when it is communicated to the public by psychology professionals and students. Training opportunities on AI may be organized to enhance students' critical thinking skills and scientific literacy in universities.

4.1.5. Other implications

Understanding the attitudes of computer engineering students regarding this issue will affect the design, development, and application processes of future AI-based psychotherapy technologies. Their positive attitudes may demonstrate their willingness to improve these systems' effectiveness, accuracy, trustworthiness, and user-friendliness. In other words, they might be more likely to develop new techniques or methods. Moreover, future computer

scientists should collaborate with future psychotherapists while developing these technologies to address therapeutic needs and awareness of ethical issues. In this way, computer engineering students will play an essential role in making these technologies clinically valuable and socially acceptable. Universities should offer courses that define AI not only in technical terms but also as a human-focused field of application for computer engineering students. For instance, under courses such as "Mental Healthcare Technologies and AI", students can be taught about software development, user experience, and therapeutic processes. These courses, which are to be conducted in collaboration with psychology departments, assist students in understanding the therapeutic process.

Sociology students may share their perspectives on AI by evaluating social relations and cultures. Understanding their attitudes could help people assess AI use in therapy regarding different cultures and social classes. Sociology students can inform others about how the acceptance of AI may vary among different social groups. Conducting qualitative studies will provide individuals with more in-depth information on this issue. Considering sociology students' concerns about AI-based psychotherapy is important because the societal harms they see may be overlooked by clinical or technical perspectives. Sociology students will be mindful of social inequality, justice, and cultural sensitivity while participating in the development processes of these technologies. Conducting qualitiative studies in the future with sociology students can facilitate a deeper understanding of societal perceptions regarding AI-based psychotherapies. Moreover, the creation of classes such as "Digital Mental Healthcare Interventions and from a Social Perspective" can ignite discussions about how these AI technologies relate to factors such as social classes, ethnicity, and gender roles.

Particularly when ethical concerns are taken into account, it may appear more beneficial to adopt a cautious attitude towards AI-based psychotherapies and to support traditional psychotherapy. However, young people today are growing up in a technological era. Therefore, professionals in this field will inevitably play a role in the development of these technologies. These technologies needs to be developed consciously. Students who will work in the related fields must be educated about AI-based psychotherapy systems and encouraged to take technology, psychology, and ethics classes to meet the contemporary demands. Important issues such as ethical awareness and data privacy should be part of the education for those who will use these systems. As seen in the findings of some studies, the more knowledge a person has about AI, the greater their willingness to use it. In other words, when students are informed correctly, they may become more open-minded on this issue and

ground their attitudes on scientific foundations. Thus, the students and professionals already working in the field should become informed. Given these, organizing departmental information sessions focused on AI-based psychotherapy systems is crucial. Seminars, panels, or workshops tailored for their fields should be conducted regularly for psychology, computer engineering, and sociology students.

4.2. Strengths, Limitations, and Suggestions for Future Studies

The first strength of the current study is that studying AI and AI-based psychotherapy makes it quite innovative. AI-based psychotherapies are still being appropriately integrated into the field of psychotherapy today, which is why it is crucial to learn the ideas and attitudes. Although studies in the literature included participants from different disciplines, studies comparing fields of psychology, computer engineering, and sociology, the ones most likely to have theoretical knowledge and experience in this area, are limited in scope. The present study aims to address this gap in the literature. The predominance of studies conducted with professionals over students was one of the most important reasons for conducting this research with students. These students will guide the design of such technologies correctly and helpfully for the people in the future. Lastly, collecting data from the Turkish sample is also essential regarding its contribution to Turkish academic literature. Although there are some studies conducted in different countries across the world in this field, studies conducted in Turkey are limited. Thus, conducting a study with a Turkish sample is an important contribution to the literature in terms of the cultural diversity.

Apart from these strengths, the present study has some limitations. Firstly, as with most self-report surveys, there is a probability of social desirability bias. An individual's tendency to present themselves differently than they actually are in self-report measures may indicate that their responses are not entirely accurate or honest. Therefore, this bias can reduce the accuracy of the data, and it can not be concluded that these responses always reflect the truth. Moreover, the sample used in this study covers a restricted group. This study, conducted in one country with students from specific departments, cannot be generalized to a broader population of university students or future professionals. This may create a problem in the external validity of the study results. In addition, each department was considered a homogeneous group in this study. In other words, individual differences within the departments were ignored. For instance, factors such as the knowledge and experience levels of AI and AI-based psychotherapies were disregarded. As seen in the

literature (Harmsel et al., 2023; Habib et al., 2024; Nam & Lee, 2015; Diener & Monroe, 2011), these factors can shape individuals' attitudes. However, within the scope of this study, the within-group variability of these factors was not considered.

Considering these limitations, the following suggestions are made for future work. First, the present study is a quantitative and cross-sectional study. Hence, the data obtained from the participants were analyzed numerically and represent measurements taken from a single period of time. However, future studies might utilize qualitative methods to examine participants' attitudes in depth. Individual interviews or group discussions can gather more detailed insights into their attitudes. This qualitative research may uncover the motivations and concerns underlying participants' AI attitudes, which is difficult to learn from standardized questionnaires. For instance, cultural considerations or personal experiences with AI can be learned in detail. Furthermore, longitudinal methods can be used to track attitude changes across time. The rapid growth of AI may lead to differences in attitudes, so it will be beneficial to repeat the same measures over different time intervals. The present study only focuses on participants' attitudes; however, future studies should investigate the relationship between attitude and behavior. This is because the attitudes and behaviors are not always parallel. The present study uses the help-seeking attitude to influence AI and AI-based psychotherapy attitudes. Future studies should focus on the factors such as personality traits (e.g., neuroticism, extraversion, introversion etc.), technology acceptance, trust, and ethical awareness influencing these attitudes to present more comprehensive results. The present study compared the attitudes of 3rd and 4th-year undergraduate students; however, it might also be beneficial to study with graduate students. Graduate students might be more knowledgeable and have more experience in both theoretical and practical terms. Especially, working with graduate students specializing in clinical psychology would yield more precise insights into the prevailing attitudes within this discipline. Lastly, the ATAIP scale measures AI-based psychotherapy attitudes and includes items regarding virtual therapists with remote access. Therefore, this study focused mainly on AI systems accessible to phones, computers, and similar devices. However, future studies should develop a distinct measurement scale, focusing on physical therapy robots. This way, the attitude differences between AI-based psychotherapies in virtual and physical environments can be evaluated.

REFERENCES

Aafjes-van Doorn, K. (2024). Feasibility of artificial intelligence-based measurement in psychotherapy practice: Patients' and clinicians' perspectives. *Counseling & Psychotherapy Research, 25*(1), https://doi.org/10.1002/capr.12800

Abbass, A., Town, J. M., & Driessen, E. (2012). Intensive Short-Term Dynamic Psychotherapy: A Systematic Review and Meta-analysis of Outcome Research. *Harvard Review of Psychiatry, 20*(2), 97-108. http://doi.org/10.3109/10673229.2012.677347

Adaş, E. B., & Erbay, B. (2022). Yapay zekâ sosyolojisi üzerine bir değerlendirme. *Gaziantep University Journal of Social Sciences, 21*(1), 326-337. https://doi.org/10.21547/jss.991383

Akbaş, A. (2024). Yapay zekâ ile toplumsal dönüşüm: sosyolojik perspektif. *International Journal of Humanities and Education, 10*(22), 151-180. https://doi.org/10.59304/ijhe.1477203

Aktan, M. E., Turhan, Z., & Dolu, İ. (2022). Attitudes and perspectives towards the preferences for artificial intelligence in psychotherapy. *Computers in Human Behavior, 133*, https://doi.org/10.1016/j.chb.2022.107273

Akyazı, K. G., Baştemur, Ş. (2024). Interactive robots: Therapy robots. *Current Approaches in Psychiatry, 16*(1), 16-30. https://doi.org/10.18863/pgy.1242958

Alanzi, T. M., Alharthi, A., Alrumman, S., Abanmi, S., Jumah, A., Alansari, H., Alharthi, T., Alibrahim, A., Algethami, A., Aburras, M., Alshahrani, A. M., Alzahrani, S., Alotaibi, B., Magadmi, T., Almasodi, M. S. (2024). ChatGPT as a psychotherapist for anxiety disorders: An empirical study with anxiety patients. *Nutrition and Health*, 1-13. https://doi.org/10.1177/02601060241281906

Albikawi, Z., Abuadas, M. H., & Rayani, A. M. (2025). Nursing students' perceptions of AI-driven mental health support and its relationship with anxiety, depression, and seeking professional psychological help: Transitioning from traditional counseling to digital support. *Healthcare, 13*(9), http://doi.org/10.3390/healthcare13091089

Al-Darmaki, F. R. (2003). Attitudes towards seeking professional psychological help: What really counts for United Arab Emirates university students? *Social Behavior and Personality, 31*(5), 497-508. http://doi.org/10.2224/sbp.2003.31.5.497

Alemede, V. O. (2025). Innovative process technologies: Advancing efficiency and sustainability through optimization and control. *International Journal of Research Publication and Reviews, 6*(2), 1941-1955. https://doi.org/10.55248/gengpi.6.0225.0904

Al-Krenawi, A., Graham, J. R., Al-Bedah, E. A., Kadri, H. M., & Sehwail, M. A. (2009). Cross-national comparison of middle eastern university students: Help-seeking behaviors, attitudes toward helping professionals, and cultural beliefs about mental health problems. *Community Mental Health Journal, 45*(1), 26-36. http://doi.org/10.1007/s10597-008-9175-2

Al-Krenawi, A., Graham, J. R., Dean, Y. Z., & Eltaiba, N. (2004). Cross-national study of attitudes towards seeking professional help: Jordan, United Arab Emirates (UAE) and Arabs in Israel. *International Journal of Social Psychiatry, 50*(2), 102–114. https://doi/10.1177/0020764004040957

Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2016, May 23). Machine bias—there's software used across the country to predict future criminals. and it's biased against blacks. ProPublica. https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing

Babu, V. S., & Banana, K. (2024). A study on narrow artificial intelligence - an overview. *International Journal of Engineering Science and Advanced Technology, 24*(4), 210-219.

Baker, R., Baker, P., Allen, H., Golden, S., Thomas, P., Hollingberry, T., Newth, J., & Gibson, S. (2002). A naturalistic longitudinal evaluation of counselling in primary care. *Counselling Psychology Quarterly, 15*(4), 359-373. https://doi.org/10.1080/0951507021000050195

Baker, R., Allen, H., Gibson, S., Newth, J., & Baker, E. (1998). Evaluation of a primary care

counselling service in Dorset. *British Journal of General Practice, 48*(428), 1049–1053.

Blease, C., Locher, C., Leon-Carlyle, & Doraiswamy, M. (2020). Artificial intelligence and the future of psychiatry: Qualitative findings from a global physician survey. *Digital Health, 6,* 1-18. https://doi.org/10.1177/2055207620968355

Braillon, A., & Taiebi, F. (2020). Practicing "reflective listening" is a mandatory prerequisite for empathy. *Patient Education and Counseling, 103*(9), 1866-1867. https://doi.org/10.1016/j.pec.2020.03.024

Bryant, J., Heitz, C., Sanghvi, S., & Wagle, D. (2020, January 14). *How artificial intelligence will impact K–12 teachers.* McKinsey & Company. https://www.mckinsey.com/industries/education/our-insights/how-artificial-intelligence-will-impact-k-12-teachers

Bornschlegl, M., Meldrum, K., & Caltabaano, N. J. (2020). Variables related to academic help-seeking behaviour in higher education – Findings from a multidisciplinary perspective. *Review of Education, 8*(2), 486-522. https://doi.org/10.1002/rev3.3196

Boucher, E. M., Harake, N. R., Ward, H. E., Stoeckl, S. E., Vargas, J., Minkel, J., Parks, A. C., & Zilca, R. (2021). Artificially intelligent chatbots in digital mental health interventions: a review. *Expert Review of Medical Devices, 18*(1), 37-49, https://doi.org/10.1080/17434440.2021.2013200

Carey, T. A., Carey, M., Stalker, K., Mullan, R. J., Murray, L. K., & Spratt, M. B. (2007). Psychological change from the inside looking out: A qualitative investigation. *Counselling and Psychotherapy Research, 7*(3), 178-187. https:///doi/10.1080/14733140701514613

Carleton, R. N. (2016). Into the unknown: a review and synthesis of contemporary models involving uncertainty. *Journal of Anxiety Disorders, 39,* 30-43. https://doi.org/10.1016/j.janxdis.2016.02.007

Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education: Contributors, collaborations, research topics, challenges, and future directions. *Educational Technology & Society, 25*(1), 28-47.

Clark, D., & Beck, A. (2023). *The anxiety and worry workbook* (2nd ed.). Guilford Press.

Constantinou, C. S., Georgiou, M., & Perdikogianni, M. (2017). Medical students' attitudes and beliefs towards psychotherapy: A mixed research methods study. *Behavioral Sciences, 7*(3). https://doi.org/10.3390/bs7030055

Cristea, I. A., Sucala, M., & David, D. (2013). Can you tell the difference? Comparing face-to-face versus computer-based interventions. The "Eliza" effect in psychotherapy. *Journal of Cognitive and Behavioral Psychotherapies*, *13*(2), 291-298. https://doi.org/10.2196/46441

Cross, S., Bell, I., Nicholas, J., Valentine, L., Mangelsdorf, S., Baker, S., Titov, N., & Alvarez-Jimenez, M. (2024). Use of AI in mental health care: Community and mental health professionals survey. *JMIR Mental Health, 11*, https://doi.org/10.2196/60589

Curzon, J., Kosa, T. A., Akalu, R., & El-Khatib, K. (2021). Privacy and artificial intelligence. *IEEE Transactions on Artificial Intelligence*, *2*(2), 96-108. http://doi.org/10.1109/TAI.2021.3088084

Davenport, T., & Kalakota, R. (2019). The potential for artificial intelligence in healthcare. *Future Healthcare Journal, 6*(2), 94-98. https://doi.org/10.7861/futurehosp.6-2-94

Delipetrev, B., Tsinaraki, C., & Kostić, U. (2020). *AI watch, historical evolution of artificial intelligence.* Publications Office of the European Union, Luxembourg, 2020. https://doi.org/10.2760/801580

Diener, M. J., & Monroe, J. M. (2011). The relationship between adult attachment style and therapeutic alliance in individual psychotherapy: A meta-analytic review. *Psychotherapy*, *48*(3), 237–248. https://doi.org/10.1037/a0022425

Doraiswamy, P. M., Blease, C., Bodner, K. (2020). Artificial intelligence and the future of psychiatry: Insights from a global physician survey. *Artificial Intelligence in Medicine, 102*, https://doi.org/10.1016/j.artmed.2019.101753

Dosovitsky, G., Pineda, B. S., Jacobson, N. C., Chang, C., Escoredo, M., & Bunge, E. L. (2020). Artificial intelligence chatbot for depression: Descriptive study of usage. *JMIR Formative Research, 4*(11), http://doi.org/10.2196/17065

Farzan, M., Ebrahimi, H., Pourali, M., & Sabeti, F. (2025). Artificial intelligence-powered cognitive behavioral therapy chatbots, a systematic review. *Iran Journal of Psychiatry, 20*(1), 102-110. https://doi.org/10.18502/ijps.v20i1.17395

Fasola, J., & Mataric, M. J. (2013). A socially assistive robot exercise coach for the elderly. *Journal of Human-Robot Interaction, 2*(2), 3-32. https://doi.org/10.5898/JHRI.2.2.Fasola

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Fazakarley, C. A., Breen, M., Thompson, B., Leeson, P., & Williamson, V. (2024). Beliefs, experiences and concerns of using artificial intelligence in healthcare: A qualitative synthesis. *Digital Health, 10*, 1-11. https://doi.org/10.1177/20552076241230075

Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychologial help: A shortened form and considerations for research. *Journal of College Student Development, 36*(4), 368–373.

Fischer, E. H., & Turner, J. L. (1970). Orientation to seeking professional help: Development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology, 35*(1), 79–90. https://doi/10.1037/h0029636

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): A randomized controlled trial. *JMIR Mental Health, 4*(2), https://doi.org/10.2196/mental.7785

Fonagy, P. (2015). The effectiveness of psychodynamic psychotherapies: an update. *World Psychiatry, 14*(2), 137-150. https://doi.org/10.1002/wps.20235

Fowler, D. S. (2023). AI in higher education. *Journal of Ethics in Higher Education,* (3), 127-143. https://doi.org/10.26034/fr.jehe.2023.4657

Fulmer, R., Joerin, A., Gentile, B., Lakerink, L., & Rauws, M. (2018). Using psychological artificial intelligence (Tess) to relieve symptoms of depression and anxiety: Randomized controlled trial. *JMIR Mental Health, 5*(4), https://doi.org/10.2196/mental.9782

Gado, S., & Kempen, R. (2022). Artificial intelligence in psychology: How can we enable psychology students to accept and use artificial intelligence? *Psychology Learning & Teaching, 21*(1), 37-56. https://psycnet.apa.org/doi/10.1177/14757257211037149

Goertzel, B. (2014). Artificial General Intelligence: Concept, state of the art, and future prospects. *Journal of Artificial General Intelligence, 5*(1), 1-46. https://doi.org/10.2478/jagi-2014-0001

Gonzalez, J. M., Alegria, M., Prihoda T., Copeland, L. A., & Zeber, J. E. (2011). How the relationship of attitudes toward mental health treatment and service use differs by age, gender, ethnicity/race and education. *Social Psychiatry and Psychiatric Epidemiology, 46*(1), 45-57. https://doi.org/10.1007/s00127-009-0168-4

Götzl, C., Hiller, S., Rauschenberg, C., & Schick, A. (2022). Artificial intelligence-informed mobile mental health apps for young people: a mixed-methods approach on users' and stakeholders' perspectives. *Child and Adolescent Psychiatry and Mental Health, 16*(1), http://doi.org/10.1186/s13034-022-00522-6

Graham, S., Depp, C., Lee, E. E., Nebeker, C., Tu, X., Kim, H. C., & Jeste, D. V. (2019). Artificial intelligence for mental health and mental illnesses: An overview. *Current Psychiatry Reports, 21*(11), 1-8. https://doi.org/10.1007/s11920-019-1094-0

Gültekin, M., Şahin, M. (2024). The use of artificial intelligence in mental health services in Turkey: What do mental health professionals think? *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 18*(1). https://doi.org/10.5817/CP2024-1-6

Habib, M. M., Hoodbhoy, Z., & Siddiqui, M. A. R. (2024). *Knowledge, attitudes, and perceptions of healthcare students and professionals on the use of artificial intelligence in healthcare.* medRxiv. https://doi.org/10.1101/2024.01.08.24300977

Hammer, J. H., Vogel, D. L., & Heimerdinger-Edwards, S. R. (2013). Men's help seeking: Examination of differences across community size, education, and income. *Psychology of Men & Masculinity*, *14*(1), 65–75. https://doi.org/10.1037/a0026813

Harmsel, A. T., Smulders, L. M., Noordzij, M., & Swinkels, L. (2023). Forensic psychiatric outpatients' and therapists' perspectives on a wearable biocueing app (Sense-IT) as an addition to aggression regulation therapy: Qualitative focus group and interview study. *JMIR Formative Research, 7,* http://doi.org/10.2196/40237

Hilty, D. M., Cheng, Y., & Luxton, D. D. (2025). Artificial intelligence and predictive modeling in mental health. In D. M. Editor & D. H. Editor (Eds.), *Digital Mental Health* (2nd ed., pp. 323-350). Springer. http://doi.org/10.1007/978-3-031-59936-1_13

Hirsch, T., Soma, C., Merced, K. Kuo, P., Dembe, A., Caperton, D. D., Atkins, D. C., & Imel, Z. E. (2018). "It's hard to argue with a computer:" Investigating psychotherapists' attitudes towards automated evaluation. *Designing Interactive Systems Conference, China.* (pp. 559-571). https://doi.org/10.1145/3196709.3196776

Hofstadter, D. (1995). The ineradicable Eliza effect and its dangers, epilogue. In D. Hofstadter (Ed.), *Fluid concepts & creative analogies: Computer models of the fundamental mechanisms of thought* (1st ed., pp. 155-169). New York: Basic Books.

Horowitz, M. C., & Kahn, L. (2021). What influences attitudes about artificial intelligence adoption: Evidence from U.S. local officials. *PLOS One, 16*(10), https://doi.org/10.1371/journal.pone.0257732

Howells, A., Ivtzan, I., & Eiroa-Orosa, F. J. (2016). Putting the 'app' in happiness: a randomised controlled trial of a smartphone-based mindfulness intervention to enhance wellbeing. *Journal of Happiness Studies*, *17*(1), 163-185. http://doi.org/10.1007/s10902-014-9589-1

Huijnen C. A. G. J., Lexis, M. A. S., & De Witte, L. P. (2015). Matching robot KASPAR to autism spectrum disorder (ASD) therapy and educational goals. *International Journal of Social Robotics, 8,* 445-455. https://doi.org/10.1007/s12369-016-0369-4

Inkster, B., Sarda, S., & Subramanian, V. (2018). An empathy-driven, conversational artificial intelligence agent (Wysa) for digital mental well-being: Real-world data evaluation mixed-methods study. *JMIR mHealth and uHealth, 6*(11), https://doi.org/10.2196/12106

James, J. (2016). *The effectiveness of a brief mobile phone-based mindfulness intervention: effects on stress, emotion regulation and life satisfaction in teachers.* [Unpublished undergraduate thesis, Manchester Metropolitan University]. eSpace. https://e-space.mmu.ac.uk/617865/

Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., Wang, Y., Dong, Q., Shen, H., & Wang, Y. (2017). Artificial intelligence in healthcare: past, present and future. *Stroke and Vascular Neurology, 2*(4), 230-243. https://doi.org/10.1136/svn-2017-000101

Karakosta, E., Dautenhahn, K., Syrdal, D. S., Wood, L. J., & Robins, B. (2019). Using the humanoid robot Kaspar in a Greek school environment to support children with autism spectrum condition. *Paladyn: Journal of Behavioral Robotics, 10*(1), 298-317. https://doi.org/10.1515/pjbr-2019-0021

Kaya, F., Aydın, F., Schepman, A., Rodway, P., Yetişensoy, O., & Demir Kaya, M. (2022). The roles of personality traits, AI anxiety, and demographic factors in attitudes toward artificial intelligence. *International Journal of Human–Computer Interaction, 40*(2), 497-514. http://doi.org/10.1080/10447318.2022.2151730

Ka Yuk Chan, C. (2025). AI as the Therapist: Student Insights on the Challenges of Using Generative AI for School Mental Health Frameworks. *Behavioral Sciences, 15*(3), https://doi.org/10.3390/bs15030287

Kheya, T. A., Bouadjenek, M. R., & Aryal, S. (2024). The pursuit of fairness in artificial intelligence models: a survey. *arXiv, 1*(1), https://doi.org/10.48550/arXiv.2403.17333

Kıratlı, O., Öztürk, M. B. (2023). Artificial intelligence in the medical world. *Ulus Medical*

Journal, *1*(2), 31-34. https://doi.org/10.5281/zenodo.8104919

Kidd, C. D., Taggart, W., & Turkle, S. (2006). A sociable robot to encourage social interaction among the elderly. *IEEE International Conference on Robotics and Automation*, (pp. 3972-3976). http://doi.org/10.1109/ROBOT.2006.1642311

Kim, B. S. K., & Omizo, M. M. (2003). Asian cultural values, attitudes toward seeking professional psychological help, and willingness to see a counselor. *The Counseling Psychologist*, *31*(3), 343-361. http://doi.org/10.1177/0011000003031003008

Kleine, A. K., Kokje, E., Lermer, E., & Gaube. S. (2023). Attitudes toward the adoption of two AI-enabled mental health tools among prospective psychotherapists: A cross-sectional study. *JMIR Human Factors, 10*, https://doi.org/10.2196/46859

Koydemir-Özden, S. (2010). Self-aspects, perceived social support, gender, and willingness to seek psychological help. *International Journal of Mental Health, 39*(3), 44–60. https://doi.org/10.2753/IMH0020-7411390303

Koydemir-Özden, S., & Erel, Ö. (2010). Psychological help-seeking: role of sociodemographic variables, previous help-seeking experience and presence of a problem. *Procedia Social and Behavioral Science, 5*, 688-693. https://doi.org/10.1016/j.sbspro.2010.07.166

Kuo, B. C. H., Kwantes, C. T., Towson, S., & Nanson, K. M. (2006). Social beliefs as determinants of attitudes toward seeking professional psychological help among ethnically diverse university students. *Canadian Journal of Counselling, 40*(4), 224-241.

Labrador, F. J. (2004). Skinner and the Rise of Behavior Modification and Behavior Therapy. *The Spanish Journal of Psychology*, *7*(2), 178–187. https://doi.org/10.1017/S1138741600004881

Lambert, H. R. (2004). *The underutilization of mental health services in an ethnically and racilally diverse, predominantly low income population: an investigation of worldview* (3102569) [Doctoral dissertation, Faculty of The Graduate College at the University of Nebraska]. ProQuest.

Laurie, J., & Blandford, A. (2016). Making time for mindfulness. *International Journal of Medical Informatics, 96*, 38-50. https://doi.org/10.1016/j.ijmedinf.2016.02.010

Legaspi, C. M., Pacana, T. R., Loja, K., Sing, C., & Ong, E. (2022). User perception of Wysa as a mental well-being support tool during the COVID-19 pandemic. *Asian HCI Symposium 2022, USA.* (pp. 52-57). https://doi.org/10.1145/3516492.3559064

Liao, Y. J., Jao, Y. L., Boltz, M., Adekeye, O. T., Berish, D., Yuan, F., & Zhao, X. (2023). Use of a humanoid robot in supporting dementia care: a qualitative analysis. *SAGE Open Nursing, 4*(9), 1-14. https://doi.org/10.1177/23779608231179528

Lu, L., Cai, R., & Gursoy, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management, 80*, 36–51. https://doi.org/10.1016/j.ijhm.2019.01.005

May, L. C. (2023). *Mind the gap(s) in mental health care. on the claimed and actual evidence-base of publicly available top-rated mHealth applications for depression: a scoping review.* [Unpublished Master's thesis, University of Twente]. https://purl.utwente.nl/essays/94953

Mehta, A., Niles, A. N., Vargas, J. H., Marafon, T., Couto, D. D., & Gross, J. J. (2021). Acceptability and effectiveness of artificial intelligence therapy for anxiety and depression (Youper): Longitudinal observational study. *Journal of Medical Internet Research, 23*(6), https://doi.org/10.2196/26771

McWilliams, N. (2013). *Psikanalitik tanı: Klinik süreç içinde kişilik yapısını anlamak* (E. Kalem, Trans.) İstanbul Bilgi Üniversitesi Yayınları. (1994).

Morgan, T., Ness, D., & Robinson, M. (2003). Students' help-seeking behaviours by gender, racial background, and student status. *Canadian Journal of Counselling, 37*(2), 151-166.

Nader. K., Toprac, P., Scott, S., & Baker, S. (2022). Public understanding of artificial intelligence through entertainment media. *AI & Society, 39*, 713-726. https://doi.org/10.1007/s00146-022-01427-w

Nam, S. K., & Lee, S. M. (2015). The role of attachment and stigma in the relationship between stress and attitudes toward counseling in South Korea. *Journal of Counseling & Development, 93*(2), 212–224. https://doi.org/10.1002/j.1556-6676.2015.00197.x

Nilsson, N. J. (2010). Gatherings. In *The Quest for Artificial Intelligence: A History of Ideas and Achievements.* Cambridge University Press.

Olawade, D. B., Wada, O. J., Odetayo, A., Olawade, A. C., Asaolu, F., & Eberhardt, J. (2024). Enhancing mental health with artificial intelligence: Current trends and future prospects. *Journal of Medicine, Surgery, and Public Health, 3,* https://doi.org/10.1016/j.glmedi.2024.100099

Orben, A. (2020). The Sisyphean cycle of technology panics. *Perspectives on Psychological Science, 15*(5), 1143–1157. https://doi.org/10.1177/1745691620919372

Özkan, A., Akkaya, B., & Özkan, H. (2020). Hizmet robotu entegrasyon isteklilik (HREİ) ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması. *Business and Management Studies an International Journal*, *8*(3), 3710–3750. https://doi.org/10.15295/bmij.v8i3.1591

Pandey, A. K., & Gelin, R. (2018). A mass-produced sociable humanoid robot: Pepper: The first machine of its kind. *IEEE Robotics & Automation Magazine, 25*(3), 40-48. http://doi.org/10.1109/MRA.2018.2833157

Park, J., & Woo, S. E. (2022). Who likes artificial intelligence? Personality predictors of attitudes toward artificial intelligence. *The Journal of Psychology Interdisciplinary and Applied, 156*(1), 68-94. https://doi.org/10.1080/00223980.2021.2012109

Perren, S., Godfrey, M., & Rowland, N. (2009). The long-term effects of counselling: The process and mechanisms that contribute to ongoing change from a user perspective. *Counselling and Psychotherapy Research, 9*(4), 241-249. http://doi.org/10.1080/14733140903150745

Pham, S. (2017, July 21). China wants to build a $150 billion AI industry. *CNN Business.* https://money.cnn.com/2017/07/21/technology/china-artificial-intelligence-future/index.hl

Posthumus, S. N. M. (2023). *Attitudes of cognitive behavioral therapy clinicians towards the adjunct implementation of artificial intelligence into psychotherapy [Unpublished master's thesis].* Stockholms University.

Rackoff, G. N., Zhang, Z. Z., & Newman, M. G. (2025). Chatbot-delivered mental health support: Attitudes and utilization in a sample of U.S. college students. *Digital Health, 11*, 1-9. https://doi.org/10.1177/20552076241313401

Rehman, F., & Sajjad, S. (2025). Bridging technology and therapy: Exploring AI in mental health services through counselors' and students' perspectives. *Online Media & Society, 6*(1), 31-44. https://doi.org/10.71016/oms/hn8an983

Rickwood, D. J., & Braithwaite, V. A. (1994). Social-psychological factors affecting help-seeking for emotional problems. *Social Science & Medicine, 39*(4), 563-572. https://doi.org/10.1016/0277-9536(94)90099-x

Roger, K., Guse, L., Mordoch, E., & Osterreicher, A. (2012). Social commitment robots and dementia. *Canadian Journal on Aging, 31*(1), 87-94. https://doi.org/10.1017/s0714980811000663

Rogers, C. R. (1951). *Client-centered therapy; its current practice, implications, and theory.* Houghton Mifflin.

Roussakis, A. A., Hawkins, R., Mackley, C., & Piccini, P. (2025). Benefits of a 12‐week psychotherapy course for people with Parkinson's disease: A service improvement project, *Journal of Neurology, 272*(2), https://doi.org/10.1007/s00415-024-12867-3

Sani, A. (2024). Students' attitude towards artificial intelligence (Ai) and the influence of media representations. *Lapai International Journal of Management and Social Sciences, 16*(1), 47-61.

Searle, J. (1980). Minds, brains, and programs. *Behavioral and Brain Sciences, 3*(3), 417-457. https://doi.org/10.1017/S0140525X00005756

Shedler, J. (2010). The efficacy of psychodynamic psychotherapy. *American Psychologist, 65*(2), 98–109. https://doi.org/10.1037/a0018378

Sindermann, C., Sha, P., Zhou, M., Wernicke, J., Schmitt, H. S., Li, M., Sariyska, R., Stavrou, M., Becke, B., & Montag, C. (2020). Assessing the Attitude Towards Artificial Intelligence: Introduction of a Short Measure in German, Chinese, and English Language. *KI - Künstliche Intelligenz, 35,* 109-118. https://doi.org/10.1007/s13218-020-00689-0

Shang, J., Wei, S., Jin, J., & Zhang, P. (2019). Mental health apps in China: Analysis and quality assessment. *JMIR Mhealth Uhealth*, *7*(11), http://doi.org/10.2196/13236

Schepman, A., & Rodway, P. (2020). Initial validation of the general attitudes towards artificial intelligence scale. *Computers in Human Behavior Reports, 1,* https://doi.org/10.1016/j.chbr.2020.100014

Skinner, B. F. (1988). The operant side of behavior therapy. *Journal of Behavior Therapy and Experimental Psychiatry*, *19*(3). 171-179. https://doi.org/10.1016/0005-7916(88)90038-9

Stephens, T. N., Joerin, A., Rauws, M., & Werk, L. N. (2019). Feasibility of pediatric obesity and prediabetes treatment support through Tess, the AI behavioral coaching chatbot. *Translational Behavioral Medicine*, *9*(3), 440-447. https://doi.org/10.1093/tbm/ibz043

Surgenor, L. J. (1985). Attitudes toward seeking professional psychological help. *New Zealand Journal of Psychology*, *14*(1), 27-33.

Tabachnick, B. G., Fidell, L. S. (2013). *Using Multivariate Statistics* (3rd ed.). Pearson Education

Talactac, L. I. C. (2021). *Evaluation of mobile-based applications for reactive depression secondary to traumatic brain injury* (28714441) [Doctoral dissertation, Faculty of the California School of Professional Psychology]. ProQuest.

Topkaya, N. (2011). *Psikolojik yardım alma niyetinin sosyal damgalanma, tedavi korkusu, beklenen yarar, beklenen risk ve tutum faktörleriyle modellenmesi* [Doctoral thesis, Ege University]. Yükseköğretim Kurulu Tez Merkezi.

Turing, M. (1950). Computing Machinery and Intelligence. *Mind*, *59*(236), 433-460.

Varghese, M. A., & Sharma, P. (2024). Public perception on artificial intelligence–driven mental health interventions: Survey research. *JMIR Formative Research, 8,* http://doi.org/10.2196/64380

Yadrovskaia, M., Porksheyan, M., Petrova, A., Dudukalova, D., & Bulygin, Y. (2023). About the attitude towards artificial intelligence technologies. *E3S Web of Conferences, 376,* https://doi.org/10.1051/e3sconf/202337605025

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology, 53*(3), 325-337.

Vogel, D. L., & Wei, M. (2005). Adult attachment and help-seeking intent: The mediating roles of psychological distress and perceived social support. *Journal of Counseling Psychology, 52,* 347–357. https://doi.org/10.1037/0022-0167.52.3.347

Wadman, R., Webster, L., Mawn, L., & Stain, H. J. (2019). Adult attachment, psychological distress and help-seeking in university students: Findings from a cross-sectional online survey in England. *Mental Health and Prevention, 13,* 7-13. https://doi.org/10.1016/j.mhp.2018.11.003

Won Kim, S., & Lee, Y. (2023). Investigation into the influence of socio‐cultural factors on attitudes toward artificial intelligence. *Education and Information Technologies, 29*(8), 9907-9935. http://doi.org/10.1007/s10639-023-12172-y

Weichert, J., & Eldardiry, H. (2024). Computer science student attitudes towards AI ethics and policy: a preliminary investigation. *2024 IEEE International Symposium on Technology and Society (ISTAS), Mexico.* http://doi.org/10.1109/ISTAS61960.2024.10732801

Weizenbaum, J. (1966). Eliza—a computer program for the study of natural language communication between man and machine. *Communications of the ACM, 9*(1), 36–45. https://doi.org/10.1145/365153.365168

Wittal, C. G., Hammer, D., Kleine, F., Rittchen, J. (2023). Perception and knowledge of artificial intelligence in healthcare, therapy and diagnostics: A population-representative survey. *Journal of Biotechnology and Biomedicine, 6*(2), 129-139.

https://doi.org/10.26502/jbb.2642-91280077

Xu, B., & Zhuang, Z. (2020). Survey on psychotherapy chatbots. *Concurrency and Computation: Practice and Experience, 34*(7), https://doi.org/10.1002/cpe.6170

Zhang, O. X., Zhou, S., Geng, J., Liu, Y., & Liu, S. X. (2024). Dr. GPT in campus counseling: Understanding higher education students' opinions on LLM-assisted mental health services. *arXiv. 1*(1), https://doi.org/10.48550/arXiv.2409.17572

Zhang, Y., Wu, M., Tian, G. Y., Zhang, G., & Lu, J. (2021). Ethics and privacy of artificial intelligence: Understandings from bibliometrics. *Knowledge-Based Systems, 222,* https://doi.org/10.1016/j.knosys.2021.106994

Zhang, Z., & Wang, J. (2024). Can AI replace psychotherapists? Exploring the future of mental health care. *Frontiers in Psychiatry, 15,* https://doi.org/10.3389/fpsyt.2024.1444382

APPENDICES

APPENDIX 1: Informed Consent Form

Değerli Katılımcı,

Bu araştırma Başkent Üniversitesi Sosyal Bilimler Enstitüsü Klinik Psikoloji Tezli Yüksek Lisans programı kapsamında Psk. Begüm Öztürk tarafından Doç. Dr. Elvin Doğutepe danışmanlığında yürütülmektedir. Bu araştırmada bireylerin yapay zekaya ve yapay zeka destekli psikoterapilere yönelik tutumları incelenecektir. Yapay zeka destekli psikoterapiler, yapay zeka teknolojilerinin psikoterapi alanına entegre edilmesiyle oluşturulan sistemlerdir. Online terapi seçeneğinin hayatımıza girmesiyle, son yıllarda bilgisayar ve cep telefonları ile de kolayca erişim sağladığımız chatbotlar (sohbet robotları) ve terapi robotları yapay zeka destekli psikoterapilere örnek verilebilir.

Bu araştırmaya katılım tamamen gönüllülük esasına dayanmaktadır. Araştırmaya katılması beklenen kişilerin ana dilinin Türkçe olması, **psikoloji, sosyoloji veya bilgisayar mühendisliği** bölümü **3. ve 4. sınıf** öğrencilerinden oluşması ve **20-30 yaş aralığında** olması beklenmektedir. Katılımcılardan, kendi bölümleri dışında kalan diğer bölümler ile ilgili herhangi seviyede (lisans, yüksek lisans, doktora) bir eğitim **almamış** olmaları da beklenmektedir.

Bu araştırma sırasında vereceğiniz cevaplar doğru ya da yanlış olarak değerlendirilmeyecektir. Bu araştırmadan elde edilen veriler toplu bir biçimde değerlendirmeye alınacak, bireysel bir sonuç elde edilmeyecektir. Elde edilen sonuçlar yalnızca bilimsel amaçla ve bu araştırma için kullanılıp rapor edilecektir. Araştırmaya katılım herhangi bir risk içermemektedir. Bu araştırmaya katılarak psikoloji biliminin gelişmesine katkı sağlayabilirsiniz. Sonuçların geçerli ve güvenilir olması açısından ölçekteki maddelere samimiyetle cevap vermeniz beklenmektedir. Çalışma yaklaşık 10-15 dakika sürecektir. Araştırmaya katıldıktan sonra istediğiniz zaman araştırmadan çekilme hakkına sahipsiniz. Araştırmadan çekilmeniz / yarım bırakmanız durumunda verileriniz kullanılmayacaktır.

Araştırmayla ve sonuçlarıyla ilgili daha fazla bilgi almak için Begüm Öztürk ile iletişime geçebilirsiniz. Katkılarınız için çok teşekkür ederiz.

Araştırma hakkında ayrıntılı olarak bilgilendirildim. Bu çalışmaya gönüllü olarak katılmayı kendi rızamla kabul ediyorum.

- *Katılıyorum*
- *Katılmıyorum*

APPENDIX 2: Demographics Form

1. Yaşınız: ……..

2. Cinsiyetiniz

a) Kadın

b) Erkek

c) Diğer

3. Okuduğunuz bölüm (*Seçtiğiniz alan dışında kalan alanlar ile ilgili herhangi bir seviyede [lisans, yüksek lisans, doktora] eğitim* ***almamış*** *olmanız beklenmektedir.)*

a) Psikoloji

b) Sosyoloji

c) Bilgisayar Mühendisliği

4. Sınıfınız

a) 3

b) 4

5. Daha önce bir uzman kişiden (psikolog, psikiyatrist vb.) psikolojik yardım aldınız mı?

a) Evet

b) Hayır

6. Bir önceki soruya cevabınız "evet" ise, sizce aldığınız psikolojik yardım size ne kadar yardımcı oldu? (Psikoterapiye başlama sebebinize / sebeplerinize ne ölçüde çözüm bulabildiğinizi düşünüyorsunuz?)

0 - 100 arasında bir seçim yapılması için kaydırma çubuğu kullanıldı.

APPENDIX 3: Brief Definition of AI-based Psychotherapies

Yapay zeka destekli psikoterapiler, yapay zeka teknolojilerinin psikoterapi alanına entegre edilmesiyle oluşturulan sistemlerdir. Online terapi seçeneğinin hayatımıza girmesiyle, son yıllarda bilgisayar ve cep telefonları ile de kolayca erişim sağladığımız chatbotlar (sohbet robotları) ve terapi robotları yapay zeka destekli psikoterapilere örnek verilebilir.

APPENDIX 4: General Attitudes Towards Artificial Intelligence Scale

Yönerge: Değerli katılımcı. Bu anket yapay zekaya yönelik tutumlarınız hakkında bilgi almak için tasarlanmıştır. Lütfen her bir maddeyi dikkatle okuyarak size en uygun olan seçeneği 1 ile 5 arasında işaretleyiniz.	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1. Günlük hayatımda yapay zekâ sistemlerini kullanmak ilgimi çekiyor.					
2. Yapay zekânın birçok faydalı uygulaması vardır.					
3. Yapay zekâ heyecan vericidir.					
4. Yapay zekâbu ülke için yeni fırsatlar ekonomik sağlayabilir.					
5. Yapay zekâyı kendi işimde kullanmak isterim.					
6. Yapay zekâya sahip bir yazılım/robot, birçok rutin işi bir insandan daha iyi yapabilir.					
7. Yapay zekânın yapabileceklerinden etkilendim.					
8. Yapay zekanın insanların iyi oluşları üzerinde olumlu etkileri olabilir.					
9. Yapay zekâl sistemler insanların daha mutlu hissetmelerine yardımcı olabilir.					
10. Yapay zekâlı sistemler insanlardan daha iyi performans gösterebilir.					
11. Toplumun çoğu, yapay zekâ ile donatılmış bir gelecekten faydalanacaktır.					
12. Rutin işlemler için, bir insan yerine yapay zekâlı bir sistemle etkileşime girmeyi tercih ederim.					
13. Yapay zekânın tehlikeli olduğunu düşünüyorum.					
14. Kuruluşlar yapay zekâyı etik olmayan bir şekilde kullanırlar.					
15. Yapay zekâyı şeytani/kötü niyetli buluyorum.					
16. Yapay zekâ insanları gözetlemek için kullanılır.					
17. Yapay zekânın gelecekteki kullanımlarını düşündüğümde üzüntüden titriyorum.					
18. Yapay zekâ insanların kontrolünü ele geçirebilir.					
19. Yapay zekâlı sistemlerin birçok hata yaptığını düşünüyorum.					
20. Yapay zekâ gitgide daha fazla kullanılırsa benim gibi insanların zarar göreceğini düşünüyorum.					

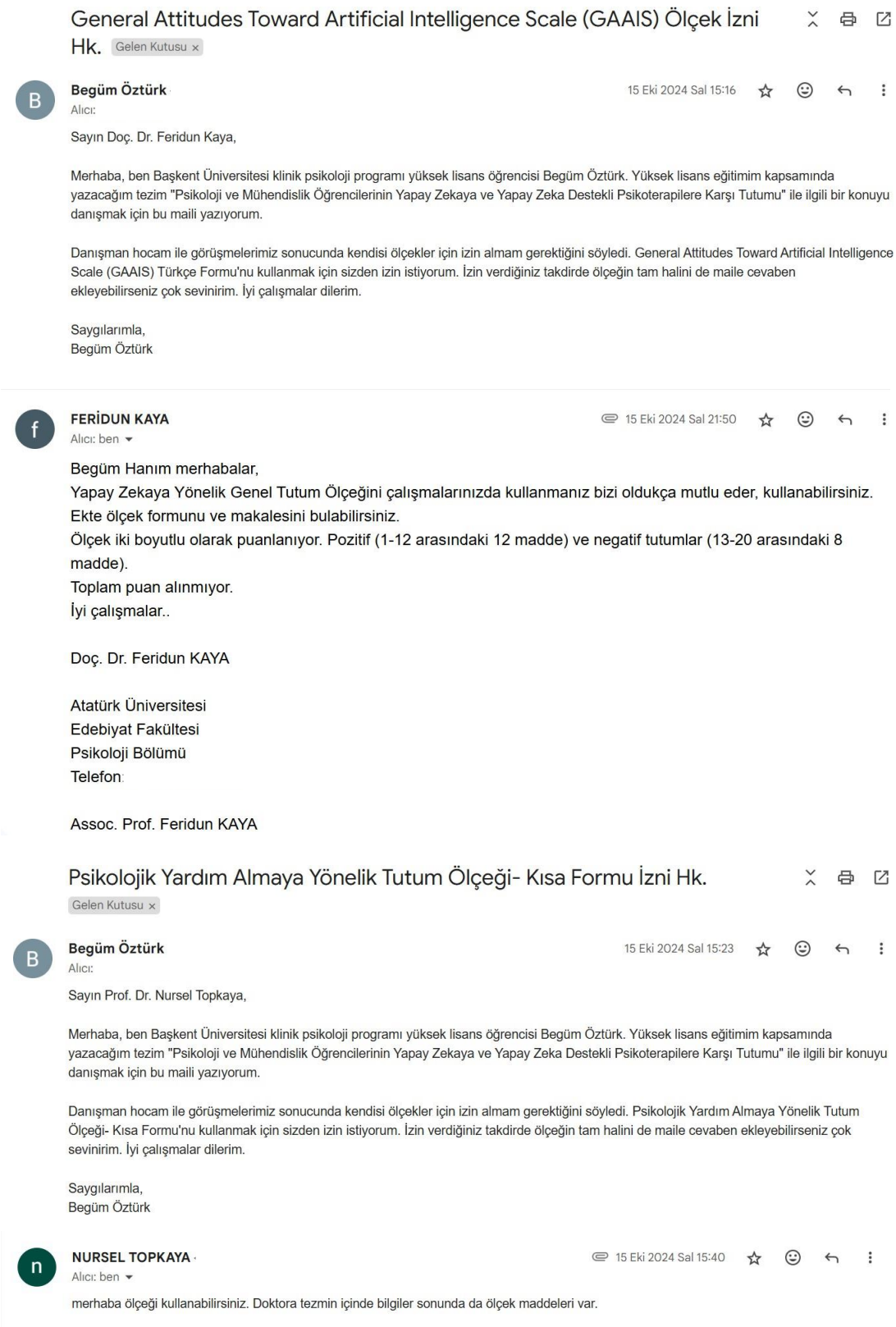
APPENDIX 5: Attitudes Towards AI-based Psychotherapy Scale

	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1. Yapay zeka tabanlı psikoterapi sistemleri danışanın duygularını anlayabilir.					
2. Yapay zeka tabanlı psikoterapi sistemleri empati yapabilir.					
3. Yapay zeka tabanlı psikoterapi sistemleri kendisinin ve çevresinin farkında olabilir.					
4. Yapay zeka tabanlı psikoterapi sistemleri uyguladığı terapilerden elde ettiği sonuçlardan hareketle kendini geliştirebilir.					
5. Yapay zeka tabanlı psikoterapi sistemleri psikoloji alanındaki teşhis süreçlerinde uzman kişilere kıyasla daha güvenilir sonuçlar üretir.					
6. Yapay zeka tabanlı psikoterapi sistemleri psikoloji alanındaki tedavi süreçlerinde uzman kişilere kıyasla daha güvenilir sonuçlar üretir.					

APPENDIX 6: Attitudes Toward Seeking Professional Psychological Help Scale - Short Form

Lütfen, ölçeğin maddelerinde yer alan ifadelere katılma düzeyinizi, her maddenin karşısında bulunan numaralardan birini yandaki düzeylere göre işaretleyerek belirtiniz.		**kesinlikle katılmıyorum**	**katılmıyorum**	**katılıyorum**	**kesinlikle katılıyorum**
1.	Akıl sağlığımda bir bozulma olduğunu düşünürsem, ilk tercihim bir uzmandan yardım almak olur.				
2.	Sorunlar hakkında bir psikologla konuşma fikri, bana, duygusal çatışmalardan kurtulmanın kötü bir yolu gibi geliyor.				
3.	Hayatımın bu döneminde ciddi bir duygusal kriz yaşasam, psikoterapi alarak rahatlayabileceğimden eminim.				
4.	Bir kişinin, gerektiği hâlde bir uzmandan yardım almadan çatışmalarıyla ve korkularıyla baş etmeyi istemesi takdir edilecek bir tutumdur.				
5.	Uzun bir süre endişeli veya üzgün olsam, psikolojik yardım almayı isterim.				
6.	Gelecekte psikolojik danışma almayı isteyebilirim.				
7.	Duygusal bir sorunu olan kişinin bunu tek başına çözmesi mümkün değildir; bu sorununu, bir uzmandan yardım alarak çözebilir.				
8.	Gerektirdiği para ve zaman açısından psikoterapinin değeri benim için şüphelidir.				
9.	Kişi, sorunlarını kendi çözmelidir; psikolojik danışma almak başvurulacak son çare olmalıdır.				
10.	Kişisel ve duygusal sorunlar, başka birçok şey gibi, genellikle kendi kendine çözülürler.				

APPENDIX 7: Scale Use Permissions



General Attitudes Toward Artificial Intelligence Scale (GAAIS) Ölçek İzni Hk. Gelen Kutusu ×

Begüm Öztürk 15 Eki 2024 Sal 15:16
Alıcı:

Sayın Doç. Dr. Feridun Kaya,

Merhaba, ben Başkent Üniversitesi klinik psikoloji programı yüksek lisans öğrencisi Begüm Öztürk. Yüksek lisans eğitimim kapsamında yazacağım tezim "Psikoloji ve Mühendislik Öğrencilerinin Yapay Zekaya ve Yapay Zeka Destekli Psikoterapilere Karşı Tutumu" ile ilgili bir konuyu danışmak için bu maili yazıyorum.

Danışman hocam ile görüşmelerimiz sonucunda kendisi ölçekler için izin almam gerektiğini söyledi. General Attitudes Toward Artificial Intelligence Scale (GAAIS) Türkçe Formu'nu kullanmak için sizden izin istiyorum. İzin verdiğiniz takdirde ölçeğin tam halini de maile cevaben ekleyebilirseniz çok sevinirim. İyi çalışmalar dilerim.

Saygılarımla,
Begüm Öztürk

FERİDUN KAYA 15 Eki 2024 Sal 21:50
Alıcı: ben

Begüm Hanım merhabalar,
Yapay Zekaya Yönelik Genel Tutum Ölçeğini çalışmalarınızda kullanmanız bizi oldukça mutlu eder, kullanabilirsiniz.
Ekte ölçek formunu ve makalesini bulabilirsiniz.
Ölçek iki boyutlu olarak puanlanıyor. Pozitif (1-12 arasındaki 12 madde) ve negatif tutumlar (13-20 arasındaki 8 madde).
Toplam puan alınmıyor.
İyi çalışmalar..

Doç. Dr. Feridun KAYA

Atatürk Üniversitesi
Edebiyat Fakültesi
Psikoloji Bölümü
Telefon:

Assoc. Prof. Feridun KAYA

Psikolojik Yardım Almaya Yönelik Tutum Ölçeği- Kısa Formu İzni Hk. Gelen Kutusu ×

Begüm Öztürk 15 Eki 2024 Sal 15:23
Alıcı:

Sayın Prof. Dr. Nursel Topkaya,

Merhaba, ben Başkent Üniversitesi klinik psikoloji programı yüksek lisans öğrencisi Begüm Öztürk. Yüksek lisans eğitimim kapsamında yazacağım tezim "Psikoloji ve Mühendislik Öğrencilerinin Yapay Zekaya ve Yapay Zeka Destekli Psikoterapilere Karşı Tutumu" ile ilgili bir konuyu danışmak için bu maili yazıyorum.

Danışman hocam ile görüşmelerimiz sonucunda kendisi ölçekler için izin almam gerektiğini söyledi. Psikolojik Yardım Almaya Yönelik Tutum Ölçeği- Kısa Formu'nu kullanmak için sizden izin istiyorum. İzin verdiğiniz takdirde ölçeğin tam halini de maile cevaben ekleyebilirseniz çok sevinirim. İyi çalışmalar dilerim.

Saygılarımla,
Begüm Öztürk

NURSEL TOPKAYA 15 Eki 2024 Sal 15:40
Alıcı: ben

merhaba ölçeği kullanabilirsiniz. Doktora tezmin içinde bilgiler sonunda da ölçek maddeleri var.

Yapay Zeka Destekli Psikoterapilere Karşı Tutum (ATAIP) Ölçek İzni Hk.

Gelen Kutusu ×

Begüm Öztürk 15 Eki 2024 Sal 15:05

Alıcı:

Sayın Dr. Mehmet Emin Aktan,

Merhaba, ben Başkent Üniversitesi klinik psikoloji programı yüksek lisans öğrencisi Begüm Öztürk. Yüksek lisans eğitimim kapsamında yazacağım tezim "Psikoloji ve Mühendislik Öğrencilerinin Yapay Zekaya ve Yapay Zeka Destekli Psikoterapilere Karşı Tutumu" ile ilgili bir konuyu danışmak için bu maili yazıyorum.

Danışman hocam ile görüşmelerimiz sonucunda kendisi ölçekler için izin almam gerektiğini söyledi. Yapay Zeka Destekli Psikoterapilere Karşı Tutum ölçeğinizi kullanmak için sizden izin istiyorum. İzin verdiğiniz takdirde ölçeğin tam halini de maile cevaben ekleyebilirseniz çok sevinirim. İyi çalışmalar dilerim.

Saygılarımla,
Begüm Öztürk

Mehmet Emin Aktan < 17 Eki 2024 Per 16:08

Alıcı: ben

Merhaba Begüm,

Ölçeği atıf verme şartı ile kullanabilirsiniz. Ayrıca bu ölçeği hazırlarken kullandığımız diğer ölçeklere de atıf vermeniz gerekir. Makalemizde bu ölçekleri belirtmiştik. Çalışmanızda başarılar dilerim.

Dr. Öğr. Üyesi Mehmet Emin Aktan
Türkiye Sağlık Enstitüleri Başkanlığı - Araştırmacı
Corbell Robotik A.Ş. Yönetim Kurulu Başkanı
Bartın Üniversitesi Mekatronik Müh. - Öğretim Üyesi
Biyomekatronik ve Akıllı Sistemler Lab. Yürütücüsü

APPENDIX 8: Ethical Approvals

Evrak Tarih ve Sayısı: 04.02.2025-427356

1993
T.C.
BAŞKENT ÜNİVERSİTESİ REKTÖRLÜĞÜ
Akademik Değerlendirme Koordinatörlüğü

04.02.2025

Sayı : E-62310886-605-427356
Konu : Begüm Öztürk'ün Etik Onayı

SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi : 15.01.2025 tarih ve 419309 sayılı yazınız.

Enstitünüz Psikoloji Ana Bilim Dalı Klinik Psikoloji (Tezli) Yüksek Lisans Programı öğrencisi Begüm Öztürk'ün, Doç. Dr. Elvin Doğutepe danışmanlığında yürüteceği, "Attitudes of Artificial Intelligence and Artificial Intelligence-Based Psychotherapies: A Study Involving Three Different Fields" başlıklı tez çalışması değerlendirilmiş ve bilgilerinize ekte sunulmuştur.

Prof. Dr. Sadegül AKBABA ALTUN
Kurul Başkanı

Ek: Değerlendirme Formu

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Belge Doğrulama Kodu :[illegible] Belge Doğrulama Adresi : https://www.turkiye.gov.tr/baskent-universitesi-ebys

Başkent Üniversitesi Bağlıca Kampüsü Fatih Sultan Mahallesi Eskişehir Yolu 18. Km
06790 Etimesgut/ANKARA
Telefon No:0 312 246 67 40 Faks No:0 312 246 66 05
e-Posta:adk@baskent.edu.tr İnternet Adresi:www.baskent.edu.tr
Kep Adresi:baskenturiversitesi@hs02.kep.tr

Bilgi için: Osmna SONBAY
Koordinatör
Telefon N

Evrak Tarih ve Sayısı: 04.02.2025-427356

Sayı : 17162298.600- 42
Konu : Tez Çalışması

21 Ocak 2025

İlgili Makama

Üniversitemiz Sosyal Bilimler Enstitüsü Psikoloji Ana Bilim Dalı Klinik Psikoloji (Tezli) Yüksek Lisans Programı öğrencisi Begüm Öztürk'ün, Doç. Dr. Elvin Doğutepe danışmanlığında yürüteceği, "Attitudes of Artificial Intelligence and Artificial Intelligence-Based Psychotherapies: A Study Involving Three Different Fields" başlıklı tez çalışması değerlendirilmiş ve yapılmasında bir sakınca olmadığı tespit edilmiştir.

Bilgilerinize saygılarımızla sunarız.

Başkent Üniversitesi Sosyal ve Beşeri Bilimler ve Sanat Alan Araştırma Kurulu

Ad, Soyad	Değerlendirme	İmza
Prof. Dr. Gözen Güner Aktaş	Olumlu/~~Olumsuz~~	
Prof. Dr. Sadegül Akbaba Altun	Olumlu/~~Olumsuz~~	
Prof. Dr. Fatih Çetin	Olumlu/~~Olumsuz~~	
Prof. Dr. Hasan Tahsin Fendoğlu	Olumlu/Olumsuz	
Prof. Dr. Filiz Kalelioğlu	Olumlu/~~Olumsuz~~	
Prof. Dr. Hidayet Hale Künüçen	Olumlu/~~Olumsuz~~	
Prof. Dr. Özcan Yağcı	Olumlu/~~Olumsuz~~	