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The Future of Psychological Therapy: Can AI Replace Human Therapists?

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Master in Digital Technologies for Business

Supervisor:
PhD, Rúben Filipe de Sousa Pereira, Assistant Professor,
ISCTE-IUL

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TECNOLOGIAS
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Department of Information Sciences and Technologies

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“You know, sometimes all you need is twenty seconds of insane courage. Just literally twenty seconds of just embarrassing bravery. And I promise you, something great will come of it.”

— Benjamin Mee, We Bought a Zoo

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This research stands as a reflection of my gratitude for the nearly six years of my personal investment in psychological therapy.

I deeply believe that striving to become better - for ourselves and for those around us - will always be a worthwhile investment.

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Thank you.

Resumo

As rápidas evoluções na Inteligência Artificial (IA) abriram novas possibilidades para a sua aplicação em várias áreas, incluindo a da psicologia. Este estudo foi motivado pelo crescente debate em torno da questão de saber se a IA pode substituir os terapeutas humanos, desafiando os modelos tradicionais da prática psicológica. Com a crescente prevalência de problemas de saúde mental e a necessidade de soluções terapêuticas acessíveis, compreender o papel potencial da IA neste domínio torna-se mais relevante do que nunca.

No entanto, surgem desafios e preocupações significativos ao considerar a integração da IA na terapia. Questões relacionadas com as suas implicações éticas, eficácia e a preservação da ligação humana nas relações terapêuticas permanecem, em grande parte, por responder. Adicionalmente, as perceções dos principais intervenientes, incluindo clientes e terapeutas, não foram amplamente exploradas, deixando lacunas na compreensão da viabilidade e aceitação da tecnologia.

Esta investigação procura abordar estas questões respondendo a cinco questões de pesquisa centrais: identificar ferramentas de IA existentes para terapia, compreender como os clientes atuais e antigos percecionam a IA, explorar as opiniões de potenciais clientes, avaliar as perspetivas dos terapeutas e destacar as principais preocupações relacionadas com o uso da IA na terapia.

Através de uma Revisão Sistemática da Literatura (SLR) e de uma análise qualitativa baseada em 64 entrevistas, os resultados demonstram que, embora a IA tenha potencial como ferramenta complementar na terapia, existem limitações e preocupações significativas que precisam de ser abordadas.

Estes resultados contribuem para o crescente debate sobre o papel da IA na terapia psicológica e fornecem uma base para futuras investigações nesta área.

Palavras-chave: Psicologia; Inteligência Artificial; Ferramentas; Perceções; Preocupações

Abstract

The rapid advancements in Artificial Intelligence (AI) have opened new possibilities for its application in various fields, including psychological therapy. This research was motivated by the growing debate around whether AI can replace human therapists, challenging the traditional models of psychological practice. With the increasing prevalence of mental health issues and the need for accessible therapeutic solutions, understanding AI's potential role in this domain is more relevant than ever.

However, significant challenges and concerns arise when considering the integration of AI into therapy. Questions regarding its ethical implications, effectiveness, and the preservation of the human connection in therapeutic relationships remain largely unanswered. Additionally, the perceptions of key stakeholders, including clients and therapists, have not been thoroughly explored, leaving gaps in understanding the feasibility and acceptance of the technology.

This research aims to address these issues by answering five core research questions: identifying existing AI tools for therapy, understanding how current and former clients perceive AI, exploring the views of potential clients, assessing therapists' opinions, and highlighting the main concerns related to using AI in therapy.

Thought a Systematic Literature Review (SLR) and a qualitative analysis based on 64 interviews, findings demonstrate that while AI has potential as a complementary tool in therapy, there are significant limitations and concerns to be addressed.

These results contribute to the growing discussion on AI's role in psychological therapy and provide a foundation for future research in this area.

Keywords: Psychological Therapy; Artificial Intelligence; Tools; Perceptions; Concerns

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Acronyms

ACT	Acceptance and Commitment Therapy
AI	Artificial Intelligence
CBT	Cognitive Behavioural Therapy
DBT	Dialectical Behaviour Therapy
MBSR	Mindfulness-Based Stress Reduction
ML	Machine Learning
MOL	Method of Levels
NLP	Natural Language Processing
PST	Problem-Solving Therapy
PTSD	Post-Traumatic Stress Disorder
RQ	Research Question
SLR	Systematic Literature Review
VHSS	Virtual Human Support Systems

1. Introduction

The rapid advancement of artificial intelligence (AI) technologies [1] has revolutionized multiple aspects of daily life and professional practice including domains related to psychological therapy [2].

Innovations such as chatbots and virtual human support systems (VHSS) are becoming increasingly important in the psychology field, highlighting the transformative potential of AI in these area [3] [4].

At the same time, psychological therapy remains an area of growing interest and critical importance [5][6]. Mental health concerns continue to rise worldwide, with data from 2019 indicating that approximately 970 million people were living with a mental disorder, with anxiety and depression being among the most prevalent [7]. The increasing awareness and prioritization of mental health underscore a societal shift where these issues are now more openly discussed and addressed, gradually reducing the stigma that has historically surrounded them [8].

However, despite its proven effectiveness, psychological therapy faces several challenges that may hinder access and engagement. The cost of sessions [9], the trust that must be placed in a human therapist [10], and the difficulty some clients experience in forming therapeutic relationships [11] are all factors that can impact the accessibility and success of traditional psychological therapy. Consequently, alternative approaches have emerged, leveraging AI-based solutions to bridge these gaps and offer additional support [12].

Given the increasing significance of both AI and psychological therapy in contemporary society [1][8], as well as their continuous evolution [3], the intersection between these fields presents a compelling area of research. The integration of AI into psychological therapy raises important questions about feasibility, effectiveness, and ethical considerations, making it crucial to explore its potential impact.

Based on the previously identified insights, this research aims to explore what has been achieved and developed in the application of AI within the field of psychological therapy. For that purpose, the following research questions (RQ) are used towards the mentioned goal:

RQ1. What are the current existent AI tools that can possibly replace the traditional practice of psychological therapy?

RQ2. How do current and former clients of traditional psychological therapy perceive the use of AI in it?

RQ3. How do potential clients of traditional psychological therapy perceive the use of AI in it?

RQ4. How do therapists perceive the use of AI in psychological therapy?

RQ5. What are the concerns of using AI in psychological therapy?

To address the RQs, present in this research, a dual methodological approach is used, consisting of a comprehensive literature review followed by a qualitative analysis based on interviews.

For **RQ1** the literature review is the method of exploration. A Systematic Literature Review (SLR) methodology was conducted to identify the existing AI tools in psychological therapy. This review focus on summarizing the existent applications, and effectiveness of these tools.

For **RQ2**, **RQ3** and **RQ4**, a qualitative research method is employed, focusing on interviews with a diverse group of current and former clients, potential clients and therapists. These interviews aim to gather insights into their perceptions and experiences regarding AI in psychological therapy and to identify potential insights and outcomes that can be derived from the analysis.

Lastly **RQ5**, is addressed through both the literature review and qualitative analysis. This dual approach offers a deeper understanding of the practical and ethical implications of AI in psychological therapy.

This research seeks to contribute to both research and practice in the fields of AI and psychological therapy. By analyzing the intersection of these two domains, it adds to the growing body of literature on AI's role in mental health while also offering practical insights for therapists, clients, and developers of AI-based mental health tools. Given the increasing relevance of these topics, expanding the availability of information in this area is essential for both academic inquiry and real-world application [1][8].

This research is structured as follows:

Chapter 1 presents the general context of the project, as well as the objectives and motivation for the research. It also establishes the importance of the topic and clarifies what is covered throughout the work.

Chapter 2 presents the theoretical framework, offering a comprehensive background on the core concepts and themes relevant to the research, ensuring a deeper understanding of the subject.

Chapter 3 is dedicated to the literature review, where previous research and work related to the topic are discussed. This part of the work seeks to assess the current state of knowledge in the field, presenting the main theories, approaches, and results achieved.

Chapter 4 provides the methodology research explaining the procedures, data collection and analysis technique used in the research.

Chapter 5 presents the findings and outcomes of the analysis, which are derived from both the literature review and the conducted interviews. This chapter is structured according to the RQs, with each section dedicated to presenting the results corresponding to a specific question.

Chapter 6, the last one, presents the conclusions of this research, summarizing the key findings obtained from the literature review and interviews. This chapter reflects on the achievement of the research objective and discusses the broader implications of the results. Additionally, the research's

limitations are outlined, highlighting potential constraints and areas for improvement and suggestions for future work are provided, offering directions for further exploration and development in the field of AI in psychological therapy.

2. Theoretical Background

This section outlines the concepts of psychological therapy, AI and the intersections between both, to clearly understand the overall context of the following research.

2.1 Psychological Therapy

Psychological therapy, often referred to as clinical psychology [13], psychological counseling services [14], talk therapy [15] or psychotherapy [16], is a scientifically grounded intervention aimed at helping individuals manage emotional, psychological, and behavioral challenges [17].

Within the scope of this research, the term psychological therapy specifically refers to interventions provided by qualified psychologists with formal education in psychology, ensuring professionalism and a commitment to evidence-based practices. Psychology is a regulated profession, meaning that individuals practicing as psychologists must be registered with specific national regulatory rules that ensure professional qualification and compliance with ethical standards [18].

Not all psychotherapists have formal training in the scientific foundations of psychology [13] [19] and because of that this research focuses specifically on professionals who have an academic background in psychology, regardless of whether they are currently seeking to expand their knowledge or pursuing further specialization in psychotherapy or have already completed such specializations.

At the core of psychological therapy is the therapeutic relationship, which is widely considered essential for effective treatment. This relationship is built on trust, empathy, and mutual respect, fostering a safe environment in which clients feel understood and supported [20]. A typical therapy session involves the therapist engaging the client in discussions about his concerns, thoughts, and emotions [21]. Over time, these sessions aim to improve the client's mental health, enhance their emotional well-being, and foster personal growth [22].

Psychological therapy includes a range of evidence-based approaches, each designed to address specific psychological and emotional challenges. Some of the most well-established approaches include Cognitive Behavioral Therapy (CBT), which focuses on identifying and modifying maladaptive thought patterns and behaviors. Psychodynamic therapy and psychoanalysis explore unconscious processes and the influence of early childhood experiences on current behaviors and emotional conflicts [23]. Systemic and family therapy considers the individual within their broader social and familial context, addressing interpersonal relationships and their impact on mental health [24] and Positive Psychology that focuses on enhancing strengths and fostering positive emotions to improve overall life satisfaction and resilience [25]. Mindfulness-based approaches have gained prominence,

integrating techniques such as Mindfulness-Based Stress Reduction (MBSR), which combines mindfulness practices with CBT techniques [26]. Acceptance and Commitment Therapy (ACT) encourages individuals to accept their emotions rather than attempt to suppress them, helping them take actions that align with their core values [27], Dialectical Behavior Therapy (DBT) combines CBT with mindfulness strategies to help individuals manage emotional dysregulation, particularly in conditions such as borderline personality disorder [28] and Problem-Solving Therapy (PST) equips individuals with practical skills to identify and resolve life's challenges effectively, reducing stress and improving coping mechanisms [29]. Another emerging approach is the Method of Levels (MOL), which encourages clients to explore their thoughts independently, fostering self-reflection and resolution of internal conflicts [30].

Beyond these specialized psychotherapeutic interventions, psychologists also provide general psychological counseling services. These sessions, offered by professionals without specific training in psychotherapy, focus on providing emotional support, coping strategies, and guidance for life stressors and transitions [31].

With advancements in technology, psychological therapy has evolved beyond traditional face-to-face interactions. Digital platforms and online therapy sessions, are becoming increasingly common, offering new opportunities to enhance accessibility and personalization [32].

In summary, psychological therapy relies on scientifically validated methods and places strong emphasis on the therapeutic relationship and ethical standards. Whether delivered in traditional settings or through emerging digital platforms, psychological therapy continues to play a critical role in enhancing emotional well-being and fostering personal growth [6].

2.2 Artificial Intelligence

Artificial Intelligence is the field of computer science that focuses on creating systems capable of performing tasks that typically require human intelligence [33]. These tasks include complex problem-solving, learning from experience, making decisions and understanding and processing natural language [33]. The foundation of AI lies in the development of algorithms and models that enable machines to process large amounts of data, recognize patterns, and make autonomous decisions based on that data [34].

AI is divided into several subfields, each focusing on different aspects of intelligence. One of the subfields is Machine Learning (ML), where systems are designed to improve their performance over time through exposure to new data without being explicitly programmed for each specific task [35]. Another key area is Natural Language Processing (NLP), which involves the development of systems

that can understand and generate human language, allowing machines to interact with people in a more natural and intuitive manner [36].

2.3 AI Tools and Psychological Therapy

As mentioned before, AI is increasingly being integrated into psychological therapy through various AI tools, offering automated interventions, personalized feedback, and real-time emotional support. Bellow as presented some of the most common and their general functions.

Chatbots are AI-driven conversational programs designed to simulate human-like interactions through text or voice, providing automated responses based on predefined rules or machine learning algorithms [37]. AI-powered chatbots are increasingly being considered as potential aids in psychological interventions, particularly in providing structured therapeutic techniques such as CBT and MBSR approaches [38]. Digital mental health tools refer to AI-powered platforms that offer support for mental well-being through features such as mood tracking, self-help exercises, and therapeutic interventions [39]. Voice assistants are AI systems that respond to voice commands, performing tasks such as answering questions, setting reminders, and providing information through NLP [40]. Virtual assistants, like voice assistants, offer more personalized support by managing tasks such as scheduling, reminders, and data organization, often integrating with other digital services [41]. Beyond managing logistics such as appointment scheduling and medication reminders, AI-driven virtual assistants could analyze real-time behavioral data, monitor emotional patterns, and suggest tailored interventions [42]. Virtual human support systems utilize AI to create realistic human-like avatars that can interact with users in a more engaging and empathetic way, commonly used in training, education, and customer service [43]. AI companions are digital entities designed to provide companionship and emotional support by engaging in conversation and adapting to users' preferences and behaviors over time [44]. Lastly, mobile applications (APP) leverage AI to deliver a wide range of services, from health tracking to productivity management, offering personalized recommendations and automation features to enhance user experience [45].

3. Related Work

To obtain a comprehensive understanding of the current state of knowledge in a particular field, a literature review plays a crucial role. It involves an investigation, analysis, and concrete conclusions of existing research on the topic. The literature review is essential for understanding what has already been explored and assessing the feasibility of this research proposal. Moreover, it is crucial to identify existing gaps and demonstrate how this research differs from previous research, contributes with new insights and adds value to scientific investigation.

The analysis of the current state of achievements and developments in the application of AI within the field of psychological therapy was done based on the SLR protocol [46].

3.1 Planning the SLR

This section corresponds to the first phase of the mentioned SLR process. It begins by explaining the need to develop this work, followed by the development and validation of the review protocol. The full process is shown in Figure 3.1 which exposes the planning, conducting, and reporting as proposed by Xiao and Watson [46].

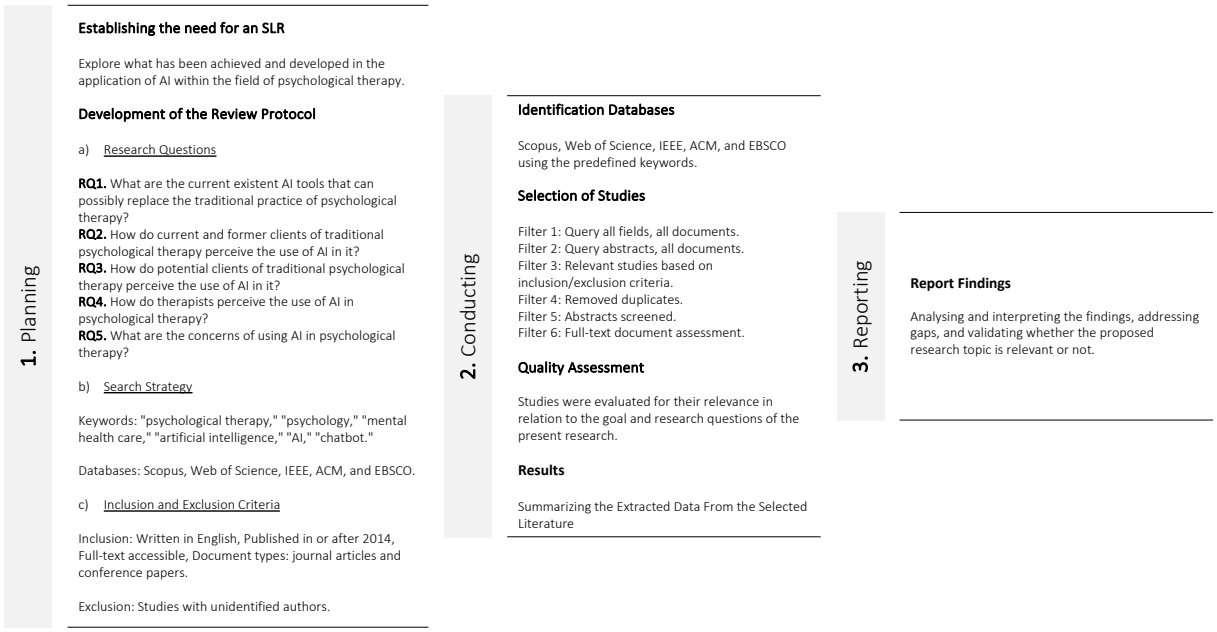

Figure 3.1 Research SLR steps, adapted from adapted [46]

Need to develop an SLR:

The evolving relationship between AI and psychological therapy [47] raises important questions about how AI can be integrated into standard mental health practices. Can AI serve as a standalone intervention for specific conditions [48], or will it remain a supplementary tool alongside human therapists [49]? Ongoing research and evaluation are essential to assess the current applications of AI in therapy, explore client and professional perceptions of this emerging technology, and identify the key ethical considerations and concerns that arise from merging these two fields.

Review Protocol:

Based on the main purpose of this research, an investigation for scientific related work was done to understand what can be found in the literature related to the previously defined RQ1, RQ2, RQ3, RQ4 and RQ5.

The search string used to perform the search to retrieve the maximum number of studies, and the chosen datasets are listed in this section.

Search String: ("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care") AND ("artificial intelligence" OR "AI" OR "chatbot").

Datasets: The search engines used were two brokers: Scopus and Web of Science, in conjunction with IEEE, ACM and EBSCO.

The review protocol uses the workflow present in Appendix A. It starts with searching datasets with the string defined previously, applying inclusion and exclusion criteria, screening abstracts, assess eligibility of full-text document and reaching a final document set.

The inclusion and exclusion criteria for this SLR is shown in Table 3.1. After that step, the abstracts must be screened to evaluate the relevance they have to the research. The step that precedes the conclusion of the review protocol with the final document set is the full reading of all documents to assess their eligibility.

Table 3.1 Inclusion and exclusion criteria applied in this research

Inclusion Criteria	Exclusion Criteria
• Written in English • Published in and after 2014 • Full-text accessible • Document type: article and conference paper • Mentions: psychological therapy, psychology, psychotherapy, mental health care or artificial intelligence, AI, chatbot	• Unidentified author

3.2 Conducting the SLR

In this section, it is described how the review is conducted, which is the second phase of the SLR. At this moment, the search is performed using the search query over the selected databases and an analysis is carried on top of the extracted data.

In the initial search step, filter 1 (All fields; All documents) was used together with the search string, both present in Table 3.2. On a second pass, filter 2 (Abstract; All documents) was used over the existing search results, consequently, filtering out documents that do not mention the keywords in the abstract, narrowing down to a total of 10819 publications. Applying inclusion & exclusion criteria filter 3, present in Table 3.1, 824 documents remain. This leads to filter 4, which is defined to remove the duplicates from the list of results to obtain the set of documents to have abstracts screened. After screening the selected set of abstracts, a full-text assessment was conducted, resulting in a final selection of 83 documents. These documents contain valuable content for analysis and drawing conclusions relevant to the research in question. Appendix B illustrates, with a visual representation, the results of the applied SLR conducting process.

Table 3.2 Filters used in the SLR protocol

Database	Search String	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6
Scopus	("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care") AND ("artificial intelligence" OR "AI" OR "chatbot")	421531	3319	378	301	80	32
Web of Science	(ALL=("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care")) AND ALL=("artificial intelligence" OR "AI" OR "chatbot")	8975	1751	172	167	54	23
IEEE	("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care") AND ("artificial intelligence" OR "AI" OR "chatbot")	3495	398	68	68	16	4
ACM	("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care") AND ("artificial intelligence" OR "AI" OR "chatbot")	13824	253	79	79	16	3
EBSCO	("psychological therapy" OR "psychology" OR "psychotherapy" OR "mental health care") AND ("artificial intelligence" OR "AI" OR "chatbot")	42554	5097	120	116	17	2
TOTAL		490379	10818	817	731	183	64

Filter 1 = Query all fields, all documents; Filter 2 = Query abstract, all documents: Filter 3 = Relevant (inclusion/exclusion criteria); Filter 4 = Remove duplicates; Filter 5 = After abstracts screened; Filter 6 = Full-text document assess

After selecting the final set of publications, an analysis of the different components of the results is presented here. This analysis concerns to the evaluation of the full text of the 64 publications eligible for extraction of any relevant information for this research. An overview is also given of which years and types of publications were selected for full reading.

Figure 3.2 illustrates the distribution of sources used in the research. Scopus accounts for the largest share, comprising 50% of the total, with 32 sources. Web of Science follows with 23 sources, representing 36% of the total. IEEE contributes with 4 sources, making up 6% of the total share. ACM and EBSCO accounts for the smallest portions, with ACM providing 3 sources meaning 5% of the total and EBSCO contributing with 2 sources representing 3%. This distribution highlights the predominance of Scopus and Web of Science as primary sources for the research, while other databases such as IEEE, ACM, and EBSCO play a comparatively smaller role.

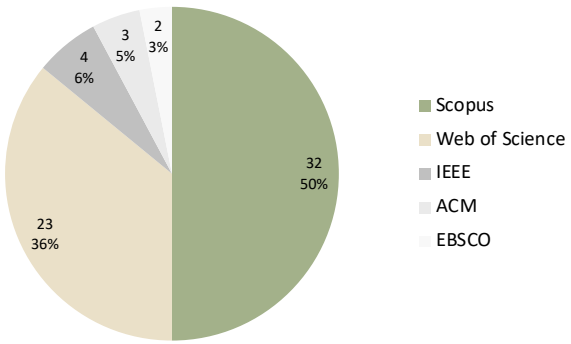

Figure 3.2 Distribution of the final set of documents per database

Important to note the distribution and growth of the selected publications shown over the years, seen in Figure 3.3, which demonstrates a growing interest in the last three years, confirming the potential interest and usefulness of this research might have in the area.

Figure 3.3 illustrates the number of publications from 2018 to 2024, categorized into articles and conference papers.

From 2018 to 2020, the number of publications remained relatively low, with minimal growth each year. However, starting in 2021, a notable rise in the number of publications can be observed, starting with 5 articles in that year and following in 2022 and 2023 with the number of publications growing significantly, with articles contributing more to the overall count compared to conference papers. The most substantial growth is seen in 2024, where the total number of publications is 28, comparing to 12 in the year before, with articles once again making up the majority.

This trend suggests a growing recognition of the topic, with an increasing number of research contributions being published in journals and presented at conferences. The consistent rise in publications, especially in recent years, indicates a surge in interest and engagement with the subject matter.

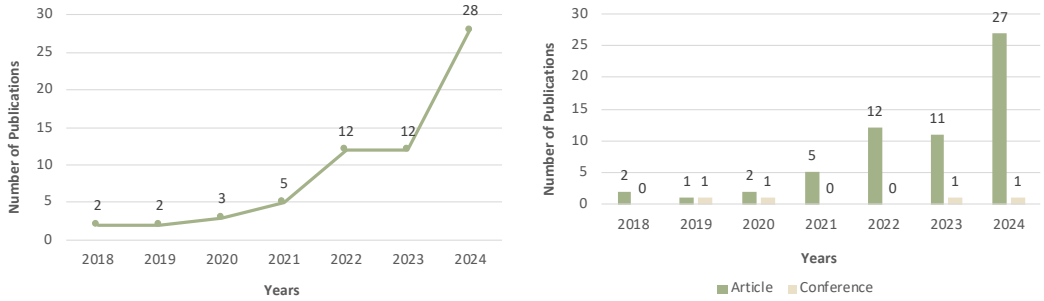

Figure 3.3 Distribution of publications per type over the years

The literature review provided several valuable insights for this research. The distribution of publications across the RQs is illustrated in Figure 3.4. RQ1 and RQ5 are the ones with the highest number of publications, with 56 and 58 studies respectively. This suggests that researchers have extensively explored both the AI tools and the concerns of using AI in psychological therapy. Regarding RQ2, RQ3, and RQ4, some evidence related to these RQs was also identified in the reviewed articles. RQ3, with 23 publications, and RQ2, with 19 publications, exhibit a moderate level of attention, indicating that these aspects are acknowledged but not as exhaustively examined. RQ4 with only 4 publications, illustrates a significant gap in research.

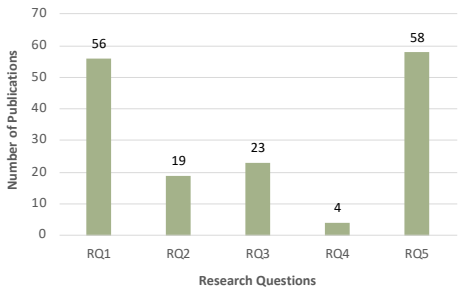

Figure 3.4 Distribution of publications per each RQ

These findings suggest that while AI in psychological therapy has gained substantial interest, certain areas, particularly those associated with the stakeholder's perception, may require further investigation to achieve a more comprehensive understanding of the field.

Figure 3.5 illustrates the total number of AI tools and concerns identified in the literature review, which are 34 and 54, respectively.

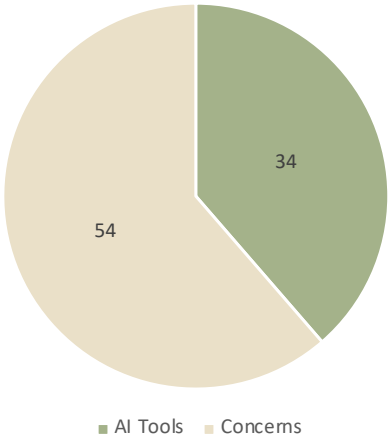

Figure 3.5 Number of AI tools and concerns found in the literature review

To get an overview of how mentions of AI tools have grown in the literature over the years, a full list of identified AI tools along with the number of publications over time can be seen in Appendix C.

Woebot, Wysa, and Tess emerge as the most widely discussed tools, with Woebot reaching 16 mentions in 2024, reflecting a strong and growing interest. Tools such as Youper (24/7) and ChatGPT have also seen increasing attention, indicating their rising adoption in mental health applications. In contrast, several tools like Psykh, Sibly and ChatPal have received minimal mentions, suggesting limited research.

The overall trend indicates an increase of mentions in publications, with the highest number recorded in 2024, with 77 AI tools mentioned in publications compared to 19 in 2023, highlighting the expanding role of AI in psychological therapy and the interest about exploring this topic.

To get an overview of how mentions various concerns of using AI in psychological therapy have grown in the literature over the years, a full list of identified AI tools along with the number of publications over time can be seen in Appendix D.

Based on the findings from the literature review related to RQ5, the concerns are categorized over the years from 2018 to 2024, providing a comprehensive view of the evolving challenges in applying AI to this field.

The most frequently cited concern is “Privacy, data security, and anonymity”, with 51 mentions across the years, emphasizing the critical importance of protecting sensitive patient information in what concerns to the use of AI in psychological therapy. “Dependence and over-reliance on AI for

mental health support" is another major concern, reflecting fears that AI might replace human judgment or reduce professional involvement. Additionally, "Bias and fairness" issues highlight concerns regarding algorithmic discrimination and ethical implications.

Finally, issues related to usability and acceptance, such as the "Lack of trust in AI systems", "Accessibility barriers", and "Therapists' adaptation to AI-driven processes", highlight the broader challenges of integrating AI into psychological therapy.

In summary, the SLR provides valuable insights into the key concerns surrounding the adoption of AI in psychological therapy, emphasizing data security, ethical considerations, regulatory challenges, and human-AI interaction limitations.

Regarding RQ2, RQ3 and RQ4, it is possible to see in Figure 3.6, there has been an increase in studies focusing on the perceptions of clients, potential clients, and therapists year after year, with a particular emphasis on the last three years.

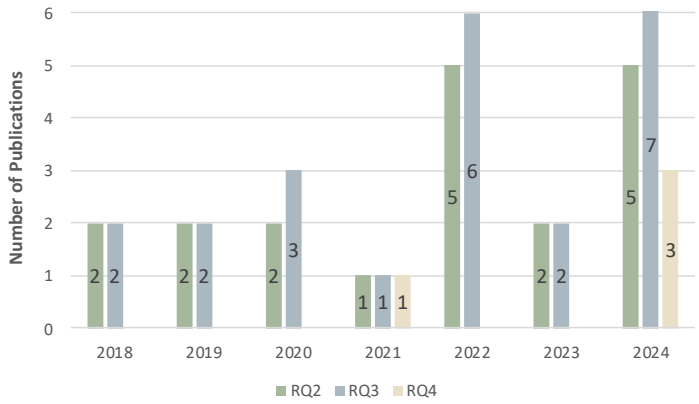

Figure 3.6 List of publications per year for each RQ

This trend once again highlights the growing interest in the connection between AI and psychological therapy. Additionally, there is a clear disparity in the number of studies focusing on therapists compared to the general population, respectively 42 and 4, as evidenced in Figure 3.4.

3.3 Reporting the SLR

At this stage of the SLR the RQs are evaluated based on the publications obtained through the research protocol. As mentioned at the beginning of this chapter, the aim is to identify existing gaps, demonstrate how this research differs from previous research, and highlight its potential to add value to the current state of AI in psychological therapy.

Regarding RQ2 and RQ5 besides what was already mentioned, the deeper results and analyses are presented in chapter 5, as an in-depth examination of both aligns with the core research objectives of this research. However, it is important to highlight that out of the 56 studies analyzed for RQ1 and the 58 studies analyzed for RQ5, only four [50], [51], [52], [53] conduct a systematic literature review on the specific topics addressed by these RQs - namely, what AI tools currently exist that could potentially replace the traditional practice of psychological therapy (RQ1), and what the concerns associated with using AI in psychological therapy are (RQ5). Among these four studies, all address RQ1, while only three [50], [51], [53] cover aspects related to RQ5.

It is possible to conclude that one of the first gaps found is the limited number of systematic reviews that comprehensively address the current existent AI tools that can possibly replace the traditional practice of psychological therapy and the concerns of using AI in psychological therapy.

The present research fills for that reason an important gap in the literature so, it offers a more updated and comprehensive understanding of both topics, addressing both technological possibilities and ethical considerations.

Regarding RQ2, although 19 studies provide scientific evidence on people's perceptions of AI in psychological therapy, only two [54], [55] present clear evidence of individuals who have history in experience psychological therapy. From this two, although one [54] employs a qualitative approach, it is mixed with a quantitative approach, and interviews were conducted only after participants had used an AI system. Lastly the second study [55] mentioned, although a distinction was made on regarding participants already having experience with human therapy, no interviews were conducted, and the distinction emerged from a survey question rather than being a premeditated focus of the study. The 19 studies identified as providing evidence on participant's perceptions of using AI in psychological therapy deviate from the core intention of my research. This is because my research aims to address this question through a qualitative analysis based on interviews, targeting only current and former clients of traditional psychological therapy.

In Table 3.3, the characteristics of the studies identified under RQ2 are presented to summarize why the present research differs from the 19 studies found.

The evaluation criteria focused on several key aspects - assessing whether the studies distinguished between participants who were current or former clients of traditional psychological therapy, whether the studies were interview-based, whether the interviews were conducted after the use of an AI tool and whether analysis was conducted using methods other than interviews.

This structured evaluation provides insight into the limitations of existing research and demonstrates the lack of information regarding the participant's history about having experience or not in traditional psychological therapy and the lack of qualitative interviews-based studies.

A key aspect assessed in the present research adopts a more focused and tailored approach to understand how do current and former clients of traditional psychological therapy perceive the use of AI in it.

Table 3.3 Table summarizing the criteria used to evaluate RQ2

	Traditional psychological therapy?	Interviews	Interviews after using AI	Qualitative analysis reviews	Other type of analysis
[56]				✓	
[57]			✓		
[58]		✓			
[4]				✓	
[59]					✓
[60]			✓		
[61]				✓	
[54]	✓		✓		
[62]					✓
[63]		✓			
[64]		✓			
[65]					✓
[66]					✓
[38]		✓			
[67]			✓		
[68]		✓			
[55]	✓				✓
[69]					✓
[53]				✓	
Present Research	✓	✓			

Regarding RQ3, although 23 studies provide scientific evidence on people's perceptions of AI in psychological therapy, only three specifically focus on individuals with no prior experience in traditional psychological therapy. However, none of these studies fully align with the objectives of this research. One study [70] conducted a qualitative literature review, another [54] included interviews but only after participants had used an AI tool - differing from the premise of this research - and the third [55] employed a quantitative approach using surveys.

Like the findings in RQ2, the 23 studies identified under RQ3 deviate from the core objective of this research, which aims to explore participants' perceptions through a qualitative, interview-based analysis, focusing exclusively on individuals who have never undergone traditional psychological therapy.

Table 3.4 summarizes the key characteristics of the identified studies, highlighting the distinctions between existing research and the present research. The evaluation criteria considered several critical aspects, such as whether participants had prior therapy experience, whether interviews were conducted, whether AI tools were used before the interviews, and whether alternative methods beyond interviews were employed in the analysis.

This structured evaluation underscores the limitations of existing research, particularly the lack of studies addressing participants' therapy backgrounds. By adopting a more focused and tailored approach, this research seeks to provide deeper insights into how individuals with no prior therapy experience perceive the integration of AI in psychological treatment based on interviews.

Table 3.4 Table summarizing the criteria used to evaluate RQ3

	Traditional psychological therapy?	Interviews	Interviews after using AI	Qualitative analysis reviews	Other type of analysis
[56]				✓	
[57]			✓		
[58]		✓			
[4]				✓	
[59]					✓
[60]			✓		
[70]	✓			✓	
[61]				✓	
[54]	✓		✓		
[62]					✓
[63]		✓			
[64]		✓			
[71]	✓		✓		
[65]					✓
[66]					✓
[38]		✓			
[67]			✓		
[68]		✓			
[72]					
[55]	✓				✓
[73]	✓				✓
[69]					✓
[53]				✓	
Present Research	✓	✓			

Regarding RQ4, although there are only a few studies on this topic - just four in total - two [68], [74], align closely with the objectives of my research. Both studies conducted a qualitative analysis based on interviews with therapists.

The opportunity presented by this research lies in contributing with additional research to a relatively underexplored area while also addressing a notable gap: the number of participants.

The present research includes 20 participants, compared to the 12 and 13 participants in the previous studies, thereby offering a broader and potentially more representative perspective.

This expanded sample size enhances the reliability and depth of insights, making a valuable contribution to the existing body of knowledge.

Table 3.5 Table summarizing the criteria used to evaluate RQ4

	Therapist?	Interviews	Interviews after using AI	Qualitative analysis reviews	Other type of analysis
[75]	✓		✓		
[68]	✓	✓			✓
[74]	✓	✓			
[55]	✓				✓
Present Research	✓	✓			

Table 3.5 summarizes the key characteristics of the identified studies, highlighting the distinctions between existing research and the present research. The evaluation criteria considered several critical aspects, such as whether participants were therapists, whether interviews were conducted, whether AI tools were used before the interviews, and whether alternative methods beyond interviews were employed in the analysis.

Based on the previous mentioned, it is possible to conclude that the present research holds significant relevance for several key reasons. First, it contributes to the existing body of knowledge by offering a systematic review of AI tools in the context of therapy, addressing a notable gap in the literature due to the scarcity of comprehensive studies in this area.

Second, it provides a rigorous qualitative analysis using clearly defined criteria and introducing a new perspective by examining the viewpoints of three distinct participant groups, an aspect that has been largely overlooked in previous research. By incorporating diverse perspectives, the research aims to uncover variations in attitudes, expectations, and potential barriers to the use of AI associated with mental health.

An additional contribution of this research is the thorough analysis of concerns related to AI in therapy, approached from two complementary perspectives: the existing literature and the insights gathered from the three participant groups through qualitative analysis. This dual approach, which was not identified in the reviewed literature, allows for a comprehensive understanding of the challenges and reservations associated with AI adoption. It bridges the gap between theoretical discussions and real-world perceptions, offering a more holistic view of the topic.

This research not only expands the academic discourse on AI applications in therapy but also provides valuable insights that can guide future studies, policy decisions, and practical implementations in the mental health sector.

4. Research Methodology

This chapter outlines the research methodologies employed in this research, which are divided into two main approaches: an SLR and a qualitative methodology based on interviews.

4.1 Definition of SLR in the context of this research

An SLR is an approach to conduct a rigorous literature review. The authors Okoli and Schabram [76] define SLR as "a systematic, explicit and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioner".

It focuses on peer-reviewed publications, such as journal articles and conference proceedings, to provide a rigorous and comprehensive overview of the current state of knowledge. By systematically evaluating these sources, an SLR ensures the findings are grounded in established research, while identifying gaps and opportunities for further investigation.

In the context of this research, the decision to use an SLR was guided by the need to address RQ1 and RQ5 with precision and depth. The SLR enabled the identification of existing AI tools that could potentially replace traditional psychological therapy practices (RQ1) and it helped to uncover the concerns associated with using AI in the area of psychological therapy (RQ5).

This research is based on the guidelines for conducting an SLR proposed by Xiao and Watson [46] and present in Appendix E. These guidelines provide a structured framework to ensure rigor in the review process. The steps taken to conduct this SLR are described in Table 4.1, Table 4.2, Table 4.3 and Table 4.4.

Table 4.1 Descripition of the Planning phase of the SLR part I

Planning the SLR
1. Establishing the need for the review: The need for the SLR result from the increasing use of AI in psychological therapy and the lack of a structured understanding of existing tools and concerns. This review provides a comprehensive synthesis to address RQ1 and RQ5.
2. Defining RQs: **RQ1:** What are the current existent AI tools that can possibly replace the traditional practice of psychological therapy? **RQ5:** What are the concerns of using AI in psychological therapy?

Table 4.2 Descripition of the Planning phase of the SLR part II

Planning the SLR
3. Developing a review protocol: **Search strategy:** Keywords such as “psychological therapy,” “psychology,” “mental health care,” “artificial intelligence,” “AI,” and “chatbot” were defined. **Databases:** The selected academic databases for this SLR were Scopus, Web of Science, IEEE, ACM, and EBSCO, ensuring comprehensive coverage of relevant literature. **Inclusion criteria:** • Written in English. • Published in or after 2014. • Full-text accessible. • Document type: journal article or conference paper. **Exclusion criteria:** Studies with unidentified authors were excluded.

Table 4.3 Descripition of the Conducting phase of the SLR

Conducting the SLR		
The review process was conducted in a series of systematic steps to identify, filter, and analyze relevant literature.		
Filter 1	Query All fields, All documents	An initial query was performed to retrieve all potentially relevant documents.
Filter 2	Query Abstracts, All documents	The query was refined to focus only on abstracts of all retrieved documents.
Filter 3	Relevant Inclusion/Exclusion Criteria	Studies were screened based on the predefined inclusion and exclusion criteria.
Filter 4	Removed Duplicates	Duplicate records were removed to ensure a unique dataset.
Filter 5	After Abstracts Screened	The abstracts were screened to exclude irrelevant studies based on the RQs.
Filter 6	Full-text Document Assessment	Full-text documents were thoroughly assessed to confirm their relevance to RQ1 and RQ5.
1. Research quality assessment: The selected studies were evaluated using predefined quality criteria, such as credibility, relevance, and methodological rigor. **2. Data extraction:** Key information was extracted, including: • AI tools discussed, their applications in psychological therapy (RQ1). • Concerns associated with AI integration, categorized into ethical, practical, and relational concerns (RQ5). **3. Data synthesis:** Findings were synthesized into overarching themes related to the RQs.		

Table 4.4 Descripition of the Reporting phase of the SLR

Reporting the SLR
The findings were organized into tables, thematic summaries, and charts to provide a clear overview of the AI tools and concerns identified in the literature.

4.2 Definition of Qualitative Analysis in the context of this research

A qualitative analysis is a research approach that focuses on understanding subjective experiences, perceptions, and contexts by examining non-numerical data such as words, narratives, and behaviors [77]. This method is particularly valuable for exploring complex topics and uncovering deeper insights that quantitative approaches might overlook [78].

In this research, a qualitative approach was employed through in-depth interviews, enabling a comprehensive understanding of participants' perspectives. This methodology was specifically applied to address RQ2, RQ3, and RQ4 to explore participants' perceptions regarding the use of AI in psychological therapy. The qualitative approach is particularly relevant to this research due to its capacity to capture nuanced perspectives by providing detailed insights into individual experiences and opinions regarding the use of AI in psychological therapy [77]. Furthermore, it allows for the exploration of uncharted areas by facilitating open-ended discussions that help uncover unexpected themes, concerns, or emerging trends [78].

Following, ther details of the activities associated with conducting research interviews, as illustrated in Appendix F [79] will be described.

Regarding the planning and preparation, since the RQs to be addressed have already been outlined, the data for this research was gathered through interviews with three distinct groups. The first group consisted of individuals who had received or were currently undergoing psychological therapy, offering valuable insights into patient perspectives and firsthand experiences. The second group, individuals with no prior experience in psychological therapy, providing an external viewpoint and contributing to a broader understanding of societal perceptions. The third group included professional therapists, all with higher education in clinical psychology.

Although participants were initially gathered from all three groups, not all of them were ultimately interviewed due to the application of the saturation criterion, which will be further elaborated.

Three distinct interview guides were developed, one for each analysis group corresponding to RQ2, RQ3, and RQ4. These interview guides can be found in Appendix G. The guides were designed to include open-ended questions, as they enable participants to provide comprehensive and detailed responses, offering deeper insights compared to closed questions. Before scheduling the interviews,

all three interview guides were validated under the supervision of the orientation team to ensure their relevance and effectiveness.

Once the interview guides were finalized, the scheduling process was carried out using an online application called Calendly. The use of Calendly proved to be highly effective, as it streamlined the scheduling process by allowing participants to select an available time slot based on my availability, significantly reducing the need for back-and-forth communication.

Of the 64 interviews conducted, only two had to be rescheduled, both of which were successfully arranged. The interviews took place between September 21, 2024, and October 25, 2024, and were conducted online via Google Meet.

The interviews were conducted in a sequential manner, beginning with individuals who had experience with psychological therapy (RQ2), followed by those with no prior experience (RQ3), and concluding with professional therapists (RQ4).

Prior to the interviews, each participant received a 1-minute and 43-second video demonstrating the use of ChatGPT as an emotional support tool. The purpose of this demonstration was to provide all participants with a basic understanding of how AI tools could be applied in psychological therapy.

Additionally, before the interviews, participants were asked to provide sociodemographic information, which varied according to the group they belonged to. For participants in the RQ2 and RQ3 group, the data collected included age, gender, education level, occupation, previous or current experience with psychotherapy, duration of therapy if applicable, whether they live in an urban or rural area, and the types of devices or technologies they regularly use. For participants in the RQ4 group, the sociodemographic data collected included age, gender, education level, occupation, whether they live in an urban or rural area, and their regular use of devices and technologies.

Before the start of each interview, an informed consent form Appendix G was read to all participants across all groups, along with a standardized text Appendix G designed to provide context on the topic of AI. Both texts are available in the appendices in Portuguese and English, with the translation generated with the assistance of ChatGPT (GPT-4o model).

The interviews were conducted in Portuguese, and all participants granted permission for the sessions to be recorded, a request that was made following the reading of the informed consent form.

On average, each interview lasted approximately 30 minutes.

After the interviews, full transcriptions were completed, with each transcription taking between 60 to 90 minutes to finalize. Once transcription was completed, the process of data analysis started by categorizing and coding the data. This process was done using Microsoft Excel.

For all the three groups, the analysis was conducted on a question-by-question basis, meaning that the responses to each question within the RQ2 interview guide were analyzed first, followed by

those related to RQ3, and so forth. This sequential approach was followed as the interviews progressed.

The interview data was analyzed qualitatively using thematic analysis, which can be seen in Table 4.5.

Table 4.5 Thematic analysis steps [78]

Phase	Description of the process
Familiarization	Reading the interview transcripts to understand the data.
Coding	Identifying recurring phrases, ideas, or patterns relevant to the RQs.
Categorization	Grouping related codes into overarching categories that capture the core insights of the data.
Refinement	Refining categories to accurately reflect the data and align with research objectives.
Interpretation	Synthesizing the findings to address RQ2, RQ3, RQ4 and RQ5

A common challenge in qualitative research is determining the appropriate duration for data collection, specifically deciding how many participants should be included. Saturation sampling is a qualitative research method used to establish the sample size by ceasing data collection and excluding additional participants once the data begins to exhibit redundancy or repetition, meaning that further contributions no longer significantly enhance theoretical insights derived from the collected information.

In this research, a theoretical saturation approach was adopted, whereby data collection continued until no new significant information emerged. Saturation was reached progressively as the interviews advanced, with recurring themes and codes, perceptions, and response patterns consistently observed among participants, without the introduction of new perspectives or insights relevant to the research's objectives.

The achievement of saturation is demonstrated in the Results chapter for each RQ and participant, based on the analysis explained in the previous step, where it was possible to collect question by question and participant by participant, the proportion of new elements in relation to the total elements in each response.

To systematically track saturation, a table was created for each RQ, where each participant is identified using the notation "PX", with "X" representing the participant number. For example, P1 corresponds to the first interviewee, while P22, in the case of RQ2, represents the last participant interviewed. Each row of this table specifies the question number, and the percentage of new codes identified as data collection progressed across participants. The percentage of new information relative to the total information collected for each question was calculated using the formula [(new data said in interview)/ (total data) × 100]. A percentage of 100% indicates that all the information provided by the participant is entirely new, compared to the previous respondents. Equally, a

percentage of 0% signifies that all the information shared by the participant had already been mentioned by earlier participants.

Considering the saturation point reached and further illustrated in Results chapter, as evidenced in Figure 4.1 , a total of 22 participants were interviewed for both RQ2 and RQ3, while 20 participants were interviewed for RQ4, resulting in a total of 64 interviews containing relevant content to address RQ5.

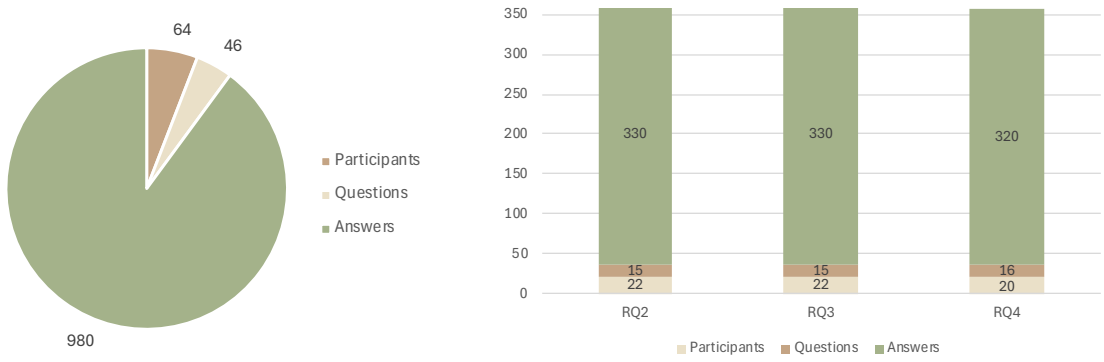

Figure 4.1 Total number of participants, questions and answers per each RQ

Figure 4.1 provides a summary of the total number of questions which are 46, and the total number of responses analyzed, totaling 980. It further details the distribution across each RQ, with RQ2 and RQ3 comprising 15 questions and 330 responses each and RQ4 with 16 questions and 320 responses. Throughout the presentation of the results, statements made by participants will be included. These statements were originally expressed in Portuguese, as all interviews were conducted in that language; however, since this research is presented in English, the statements have been translated accordingly.

The translations were generated with the assistance of ChatGPT (GPT-4o model).

5. Results

This chapter presents the findings of this research, organized around 5 RQs. The analysis was conducted using a combination of insights gathered during the SLR and qualitative data from interviews. Each RQ was approached using the most suitable method of analysis, as outlined below:

RQ1: The findings for this question are based on insights gathered during the literature review, which explored existing AI tools relevant to psychological therapy.

RQ2, RQ3 and RQ4: The findings for the 3 questions were addressed through a qualitative analysis of interviews data, identifying categories that reflect current, former and potential clients' perceptions and therapists' perceptions.

RQ5. The findings for this question are a synthesis of both the SLR and the qualitative analysis of the interview data, providing a holistic perspective on the concerns surrounding AI in psychological therapy.

The analysis was conducted systematically to ensure rigor and consistency. The process began with the transcription of all interviews, capturing the therapists' responses word for word. These transcriptions were then reviewed in detail, and the data were coded to identify recurring themes, patterns, and divergences. The coding process followed an open coding approach, allowing themes to emerge naturally from the data. These themes were grouped according to their relevance to each RQ, and the results are presented in this chapter as follows:

The first section discusses the AI tools identified through the literature review (RQ1). The second, third and fourth sections present qualitative findings related to stakeholders' and therapists' perceptions of AI in therapy (RQ2, RQ3 and RQ4). The final section synthesizes insights from the literature review and qualitative data to address concerns about using AI in psychological therapy (RQ5).

By combining insights from the literature and interview analysis, this chapter provides a comprehensive overview of the findings and sets the stage for a deeper discussion of their implications in the following chapter.

5.1 RQ1 - AI tools and psychological therapy

This section presents the findings related to RQ1: "What are the current existent AI tools that can possibly replace the traditional practice of psychological therapy?" The results are based on the SLR conducted and explained in the Related Work chapter to identify and evaluate the most relevant AI-based solutions in the field of psychological therapy.

The objective is to explore the functionalities, scope of application, and potential of these tools to possibly replace conventional psychological practices in different settings.

Figure 3.5 indicates that through the SLR 34 AI tools were identified across the scientific publications reviewed and Appendix U illustrates the evidence from all the articles for each tool.

Among the 34 AI tools identified in this research, Woebot, Wysa, Tess, ChatGPT, Youper, and Replika emerged as the most frequently mentioned in the SLR. These tools have been widely studied and are significantly contributing to the growth and development of research at the intersection of AI and psychological therapy.

Following is an analysis of these tools in detail, evaluating their functionalities, therapeutic approach, and potential role in the future of psychological therapy.

Categorization of AI Tools:

To provide a clear overview of the results, given the complexity of summarizing 34 AI tools, Table 5.1 illustrates a categorization based on the tools' functionality.

Based on functionality, the AI tools were divided into five main categories - "Therapeutic Interventions" are AI tools designed to provide psychological support, using validated therapeutic approaches like CBT or MBSR to help manage stress, anxiety, or depression, "Self-Help and Wellness", focus on overall well-being, promoting personal growth, "Support and Monitoring" tools assist in managing chronic conditions or daily routines by offering reminders, emotional support, and progress tracking, ensuring consistent care, "Symptom Tracking and Monitoring" tools allow users to log and analyze symptoms, providing insights for better health management and decision-making and "General-Purpose AI Chatbots" act as versatile assistants, handling a wide range of tasks like answering questions to daily support, making them useful across various contexts including mental health.

Table 5.1 Categorization of AI tools by functionality

Functionality	**AI Tools**
Therapeutic Interventions	Woebot, Wysa, Tess, Youper, ChatPal, Elomia, Vivibot, SHUTi, B-RIGHT, Sibly, Fido, XiaoE, W-GenZD, Leora, Shimbot , Nuna, MYLO, Lumen
Self-Help and Wellness	MindDoc, Serenity, Vincent, TEO, Psykh, Xiaoice, Replika
Support and Monitoring	SimCoach, MIRA
Symptom Tracking and Monitoring	MediBot, Mobilyze
General-Purpose AI Chatbot	Gemini, ChatGPT, XIAO AN

Appendix V illustrates the amount of AI tools in each type of functionality where "Therapeutic Interventions" dominates, comprising 18 AI tools in this category reflecting the strong focus on delivering direct, evidence-based support AI tools to users.

The AI tools included in the Therapeutic Interventions category mentioned in Table 5.1, were also categorized based on their therapeutic approach as illustrated in Table 5.2.

Table 5.2 Categorization of AI tools by approach

Therapeutic Approach	**AI Tools**
CBT	Woebot, Wysa, Tess, Youper, Elomia, Vivibot, SHUTi, B-RIGHT, Sibly, Fido, XiaoE, W-GenZD, Leora, Shimbot, Nuna
MBSR	Youper, Elomia, XiaoE
Positive Psychology	ChatPal, Vivibot, Shimbot
ACT	Nuna
MOL	MYLO
PST	Lumen

Appendix W provides an overview of the therapeutic approaches employed, allowing for a deeper analysis of their application and effectiveness. CBT is the most widely used approach, with 14 AI tools under this approach. MBSR follows with 4, while Positive Psychology with 3 from the total amount of AI tools. ACT, MOL and PST each contribute with 1 AI tool from the total. This distribution suggests a strong preference for evidence-based and structured approaches like CBT in AI tools, while other therapeutic methods have a more limited adoption.

Another analysis was the type of AI tool based on the definitions mentioned in the section AI Tools and Psychological Therapy of chapter 2.

Table 5.3 Differentiation between the types of AI tools

Type of AI Tool	**AI Tools**
Chatbot	Woebot, Wysa, Tess, ChatPal, Elomia, Vivibot, Fido, XiaoE, W-GenZD, Leora, Shimbot, MYLO, TEO, Psykh, MIRA, Gemini, ChatGPT, XIAO AN
Digital Mental Health Tool	SHUTi, B-RIGHT
Voice assistant	Lumen
Virtual Assistant	Vincent
Virtual Human Support System	SimCoach
AI Companion	Xiaoice, Replika
APP	Youper, Sibly, Nuna, MindDoc, Serenity, MediBot, Mobilyze

In Appendix X it's possible to see that "Chatbots" comprise most AI types of tools, with a total of 18 occurrences, indicating their prevalent role in AI-driven therapy solutions. This dominance suggests that chatbots are currently the most explored and utilized AI tool, likely due to their ability to provide scalable and accessible support for users. The presence of other categories, such as "Digital Mental Health Tools" (7 occurrences), "Voice Assistants" (2 occurrences), and "Virtual Assistants", "Virtual Human Support Systems", "AI Companions", and "APPs" (each with 1 occurrence), suggests an evolving landscape with opportunities for more personalized and multimodal interventions.

These findings align with current trends in mental health technology, where AI tools associated with the sector of mental health are being developed.

Based on the SLR, not all the AI tools identified are designed for the general population or are already active and world-wide accessible. On Table 5.4 it is possible to see which of the AI tools are active and world-wide accessible, and which are not. SimCoach for example is specifically designed for veterans with PTSD, providing targeted support for this population. Similarly, SHUTi focuses on individuals struggling with insomnia, offering specialized cognitive behavioral therapy for sleep disorders and Vivibot is designed to support cancer survivors, addressing their unique mental health needs. Xiaoice, XiaoE and XIAO AN are AI tools currently only available in China.

For the remaining AI tools with limited accessibility, the literature suggests that this limitation is primarily due to these tools being designed for specific target groups, being available only in certain regions or still being under development.

Table 5.4 Relation between accessibility and AI tools

Accessibility	**AI Tools**
Active and world-wide accessible	Woebot, Wysa, Tess, Youper, Elomia, Sibly, Lumen, MindDoc, Serenity, Replika, SimCoach, MIRA, Gemini, ChatGPT
Limited accessibility	ChatPal, Vivibot, B-RIGHT, Fido, XiaoE, W-GenZD, Leora, Shimbot , Nuna, MYLO, Vincent, TEO, Psykh, Xiaoice, MediBot, Mobilyze, XIAO AN, SHUTi

Some additional results regarding what was identified in the literature review. Although Ruhh and Sexpert AI tools have been identified in the SLR, it was not possible to obtain further details about them in the literature, therefore, they were not included in the previous analysis of the results. Wysa, Sibly, and MindDoc are hybrid mental health solutions that combine AI-driven tools with access to human professionals. Wysa and MindDoc offer AI-based support alongside access to human therapists for premium users, while Sibly integrates AI with human coaches or therapists. In contrast, most of the listed tools in Table 5.1. are fully AI-driven and do not incorporate human interaction.

The analysis of existing AI tools in psychological therapy reveals several key trends. First, there is a dominance of CBT-based tools, such as Woebot and Wysa, which leverage structured, evidence-based techniques to address anxiety, depression, and stress as it can be seen in the complete analysis table of AI tools Appendix H [50]. These tools are widely accessible and scalable, making mental health care more affordable and available to the general population [56]. Second, many tools focus on mood tracking and emotional support, providing real-time feedback and ongoing monitoring to help users manage their mental health over time [80]. Third, while most tools target the general population,

there is a growing trend toward specialization, with tools like SimCoach and SHUTi addressing specific conditions or demographics [64], [69], [81].

Finally, although the significant representation of findings regarding the worldwide availability and accessibility of several and different AI tools, the literature is very careful positioning the AI tools in the psychological therapy picture. AI tools are increasingly being designed as supplements to traditional therapy rather than replacements, offering psychoeducation, crisis intervention, or between-session support [56], [57], [59] .

5.2 RQ2 - Perceptions of AI in psychological therapy among current and former clients

This section presents the findings of the qualitative analysis on how current and former clients of traditional psychological therapy perceive the use of artificial intelligence in therapy.

A total of 22 interviews were analyzed using thematic analysis, leading to the identification of 21 codes grouped under 6 categories that reflect participants' perceptions of AI applied in the psychological therapy practice. The interview script used for all 22 participants was the same and can be found in Appendix G.

Although it was not a criterion, and this group includes both current and former clients of traditional psychological therapy, all participants were undergoing therapy at the time of the interview. In terms of gender distribution illustrated in Appendix Y, most participants are female (64%), followed by males (32%), and a small representation of non-binary individuals (5%). Regarding age groups, the largest segment falls within the 20 to 30 age range (41%), while 18% are under 20, 18% are between 31 and 40, and 14% are over 40 years old. When considering education levels, 41% of participants hold a bachelor's degree, 36% have pursued postgraduate or master's studies, 9% are bachelor's students and 14% are high school students. The occupational distribution demonstrates that 27% are students, 18% work in technology-related fields, 14% are healthcare professionals, 23% are in art and design, and 9% are unemployed and 10% are engaged in other occupations. Regarding the duration of psychological therapy, 45% of participants have been in therapy for 1 to 3 years, 36% for over 3 years, and 18% for less than a year. All participants reside in urban areas, indicating a homogeneous living environment. In terms of technology usage, mobile phones are the most used device, with 100% of participants relying on them, followed by computers (86%), tablets (14%), TVs (14%), ChatGPT (5%) and eReader (5%). The data indicates that the participants are predominantly young urban women, highly educated, and diverse in professional backgrounds. Most have been in therapy for over a year and rely primarily on mobile phones and computers for daily use. The complete table with sociodemographic data is available in Appendix I.

The qualitative analysis was conducted in accordance with the guidelines [78] outlined in Definition of Qualitative Analysis section of chapter 4.

Following the transcription of the interviews, an initial familiarization (familiarization phase) [78] phase was initiated by reading all the answers for each question. After that, a question-by-question analysis was conducted to obtain meaningful results. The analysis of each question was conducted in chronological order based on the interview dates. In other words, the process of categorization and coding began with the first participant interviewed and continued sequentially until the 22nd participant. This for each questions separately. During the analysis of the responses to each question, key expressions were identified and subsequently grouped into codes (coding phase) [78] based on their thematic relevance. These codes were then further categorized (categorization phase) [78] into broader categories. At the end of this initial phase, a total of 46 categories and 126 codes were identified. To enhance the clarity and efficiency of result interpretation, a second round of analysis (refinement) [78] was conducted. This process aimed to consolidate some of the codes, as many recurring themes across different questions led to similar or overlapping codes. The validity of this consolidation is evidenced by the fact that the expressions used to exemplify the credibility of the codes and categories throughout the results section refer to the same questions. Following this second refinement, the final analysis (interpretation) [78] for RQ2 resulted in 6 categories and 21 codes, which will be presented in this section.

The complete table containing all categories, codes, and corresponding questions can be found in Appendix J. In addition to the results analysis, the saturation point was also examined, as previously explained in the Definition of Qualitative Analysis of chapter 4. This table is included in Appendix K to provide a comprehensive overview of the data saturation process. The table provides a clear visualization of response distribution across participants and confirms that saturation was first observed with participant 11 following with participant 16 further validating this point, as minimal new information emerged between them. From Participant 16 onwards, no new insights were identified up to participant 22, indicating that thematic saturation had been achieved, and further data collection would likely yield redundant findings. Below, the results of the qualitative analysis will be presented, including all identified categories, codes, and direct quotes from participants will be provided as evidence to support the findings. 22 interviews with 15 questions each were analyzed, comprising a total of 330 answers analyzed for this research.

The 6 categories identified are the high-level summary of the perceptions of current and former clients of traditional psychological therapy regarding the use of AI in psychological therapy. Below, each category is introduced and explained, as well as all the codes that support the corresponding category. Appendix J illustrates all the categories, codes and expressions for RQ2. To easily understand

and confirm the analysis each question is identified by a “Q” followed by the corresponding question number and each participant is identified by a “P” followed by the corresponding number. Table 5.5 and Table 5.6 reflect the higher view of the results without the expressions.

Table 5.5 Qualitative insights on AI in therapy from current and former clients part I

Category	Justification	Code	Justification	Number of expressions
Perceived Advantages of AI in Therapy	Highlights the positive aspects of AI in mental health care	Immediate Availability of Tools	Perception that AI tools can provide instant support, unlike traditional therapy	26
		Utility and Practicality	Captures participants' views in the general benefits of using an AI tool and practical examples of using it in therapy,	59
		Accessibility and Flexibility	Reflects the belief that AI can make therapy more accessible to individuals who face barriers such as geographical distance, physical or time constraints.	20
		Reduced Costs	Gives the perception that AI therapy could be more affordable than traditional therapy, making mental health care accessible to those who cannot afford high fees.	14
Willingness to Try AI Therapy	Participants’ openness to using. While some expressed enthusiasm about trying AI therapy, others were more hesitant with a “maybe” behind the answers.	Willingness to Try AI Therapy	Same as category.	19
Barriers to AI in Psychological Therapy	Participants perceive several barriers that could diminish the adoption of AI in therapy	The Absence of Human Connection and Empathy in AI Therapy	Participants' concerns that AI lacks the ability to provide the emotional warmth, empathy, and understanding that human therapists offer.	52
		Impersonal Communication in AI tools	Perception that AI tools may communicate in a robotic manner, lacking the nuance and adaptability of human conversation.	15
		Lack of Trust and Credibility in AI solutions	Discomfort and Hesitation with AI” refers to participants’ skepticism about the reliability and effectiveness of AI.	49
		Discomfort and Hesitation with AI	General discomfort expressed by participants, positioning the use of AI tools for psychological purposes only as a last resort.	19
		Human Interaction Preference and Therapy Involvement	Participants’ strong preference for human interaction in therapy. Many felt that the presence of a human therapist is essential.	37
		Data Security, Privacy, and Trust in AI Therapy	Concerns about the security and privacy of personal data shared with AI therapy tools. Participants worried about how their information would be stored, used, or potentially misused.	97
		Skepticism and Limitations of AI Therapy	Participants’ doubts about the capabilities of AI as a long-term solution, based on a big lack of confidence in the technology.	20
		Risks of Dependency and Isolation in AI Therapy	Concerns that relying too heavily on AI therapy could lead to social isolation or an unhealthy dependency on technology, rather than fostering real-world coping skills and relationships.	9

Table 5.6 Qualitative insights on AI in therapy from current and former clients part II

Category	Justification	Code	Justification	Number of expressions
Therapists' Use of AI: Acceptance, Concerns, and Ethical Considerations	Participants' views on how therapists might use AI in their practice. Participants gave inputs on how AI could assist therapists and gave insights about how they would feel if their therapists could have access to their personal communications with an AI tool.	Use of AI by Therapists	Participants' perspectives on how therapists might integrate AI into their practice.	36
		Concerns and Challenges for Professionals	Participants' concerns about the challenges therapists might face when using AI.	3
		Willingness to Share Chatbot Interactions with Therapist	Participants' attitudes toward sharing their interactions with AI chatbots or tools with their human therapists.	20
		Discomfort About the Therapist's Use of AI to Analyze Personal Cases	Participants' discomfort with the idea of therapists using AI to analyze their personal cases or data.	12
User Needs and Expectations for AI Therapy	Participants shared their expectations for what AI therapy should offer to be effective and trustworthy. Key needs included transparency in how AI works, the ability to customize interventions, and assurances of data security.	Privacy and Emotional Safety in AI Therapy	Participants' emphasis on the importance of having a space for communicating without filters, based on trust and officially recognized.	27
		Desirable Features for Enhancing AI Therapy	Participants' ideas about the features and functionalities that would make AI therapy more appealing and effective.	63
Perceptions of the Growing Trend of AI in Therapy	Participants' views on the increasing integration of AI into mental health care. While some saw it as an inevitable, others expressed skepticism about its long-term impact.	The Evolving Role and Potential of AI in Therapy	Participants' positive acknowledgment of AI's increasing role in therapy and its association with modern lifestyles.	16
		Concerns about future AI growth	Participants' worries about the rapid growth of AI in therapy. Concerns were raised about the potential loss of the human element, both in therapy and everyday life.	11

To finalize the findings of RQ2, Appendix L presents a summary of the total of expressions per category and per code. These findings show that it's quite evident that "Barriers to AI in Psychological Therapy", along with their corresponding subcategories were clearly mentioned throughout the interviews, with a total of 298 expressions extracted from the 330 responses analyzed in RQ2. This significant focus on barriers suggests a widespread perception that AI in psychological therapy faces substantial obstacles related to trust, ethical considerations, and technological limitations. Among these concerns, data privacy emerged as the most frequently mentioned issue, highlighting it as a recurring and predominant theme across the answers. However, despite these prevailing concerns, it is important to recognize that participants also acknowledged the potential benefits of AI in psychological therapy.

Many expressed optimisms about the possibilities that AI integration could offer, such as enhanced accessibility, reduced costs, and improved flexibility. This indicates that while skepticism persists, there is a clear openness to exploring AI as a complementary tool within the therapeutic landscape.

Ultimately, the findings reveal a nuanced perspective – while participants are cautious and mindful of the challenges, they do not dismiss the potential of AI outright. Instead, they appear willing to consider its integration.

5.3 RQ3 - Perceptions of AI in psychological therapy among potential clients

This section presents the findings of the qualitative analysis on how potential clients of traditional psychological therapy perceive the use of artificial intelligence in therapy.

A total of 22 interviews were analyzed using thematic analysis, leading to the identification of 24 codes grouped under 11 categories that reflect participants' perceptions of AI applied in the psychological therapy practice. The interview script used for all 22 participants was the same and can be found in Appendix G. The only criterion of this RQ was to have participants that have never experienced any form of psychological therapy. In terms of gender distribution illustrated in Appendix Y, 50% of the participants are female, followed by males (45%), and a small representation of non-binary individuals (5%). Regarding age groups, the largest segment falls within over 40 years old (36%), while 32% are between 20 and 30, 27% are between 31 and 40, and 5% are under 20 years old. When considering education levels, 41% of participants have pursued postgraduate or master's studies, 36% hold a bachelor's degree, 1% have a PhD and 18% are high school students. The occupational distribution demonstrates that 50% work in technology-related fields, 12% are healthcare professionals, 9% are in art and design, teacher and civil engineer got both 5%, 9% are students and 9% are engaged in other occupations. All participants reside in urban areas, except one, indicating a homogeneous living environment. In terms of technology usage, mobile phones and computers are the most used devices, with 95% of participants relying on them, followed by tablets (18%), TVs (14%), eReaders (14%), Fitbit / Smartwatch (18%) and Others with 5%. The data indicates that the participants are predominantly urban individuals with a balanced gender distribution, primarily aged over 40 or between 20 and 30. They are highly educated, with a significant portion holding postgraduate or bachelor's degrees, and work in diverse professional fields, predominantly technology related. Most participants rely on mobile phones and computers for their daily technology use. The complete table with sociodemographic data is available in Appendix M.

The qualitative analysis was conducted in accordance with the guidelines [78] outlined in the Definition of Qualitative Analysis section of chapter 4 and previously explained with more detail in RQ2 section. In the first phase of the analysis, a total of 55 categories and 132 codes. After the refinement phase, a total of 11 categories and 24 codes were identified, which will be presented in this section. In addition to the results analysis, the saturation point was also examined. The saturation table is included in Appendix O to provide a comprehensive overview of the data saturation process

and a clear visualization of response distribution across participants, confirming that saturation was first observed with participant 13 following with participant 17 further validating this point, as minimal new information emerged between them. From participant 17 onwards, no new insights were identified up to participant 22, indicating that thematic saturation had been achieved, and further data collection would likely yield redundant findings.

Below, the results of the qualitative analysis will be presented. 22 interviews with 15 questions each were analyzed, comprising a total of 330 answers analyzed for this research.

The 11 categories identified are the high-level summary of the perceptions of the potential clients of traditional psychological therapy regarding the use of AI in psychological therapy. Below, each category is introduced and explained, as well as all the codes that support the corresponding category.

Appendix N illustrates all the categories, codes and expressions for RQ3. Table 5.7 and Table 5.8 reflect the higher view of the results without the expressions.

Table 5.7 Qualitative insights on AI in therapy from potential clients part I

Category	Justification	Code	Justification	Number of expressions
Awareness and Knowledge of AI Tools in Mental Health	Explores how familiar idividuals are with AI tools designed for mental health support.	Lack of Awareness	Indicates a complete absence of knowledge about AI tools in mental health	13
		Generic Knowledge without Exploration	Suggests some awareness exists, but it is vague or incomplete	10
Perceptions and Willingness to Use AI in Therapy	Focuses on potential clients' attitudes toward AI in psychological therapy.	Skepticism About AI's Ability to Replace Human Empathy	Reflects doubts or concerns about whether AI can replicate the emotional understanding that human therapists provide.	6
		Curiosity and Willingness to Try New Experiences	Captures a positive attitude about trying AI in therapy.	14
		Generational Preferences for AI	Highlights differences in attitudes toward AI based on age or generational factors. Younger individuals may be more comfortable and open to using AI tools, while older generations not.	9
		General Comfort with Security	Refers to individuals' level of trust in the privacy and security of AI tools	4
Convenience Offered by AI Solutions	Highlights the practical advantages of AI tools, such as accessibility, affordability, and availability.	Accessibility and Immediate Availability	Refers to the ease of accessing AI tools and their ability to provide support whenever needed.	31
		Flexibility in Communication	Highlights the perception of AI tools in terms of how users can interact with them.	8
		Expanding Access to Therapy	Emphasizes how AI tools can bridge gaps in mental health care by reaching individuals who may not have access to traditional therapy.	10
		Affordable and Accessible	Focuses on the cost-effectiveness of AI tools compared to traditional therapy.	4

Table 5.8 Qualitative insights on AI in therapy from potential clients part II

Category	Justification	Code	Justification	Number of expressions
Resistance to AI in Psychological Support	Identifies reasons why individuals may be hesitant to using AI for psychological therapy.	Concerns About AI's Limitations	Refers to worries or doubts about the capabilities of AI in providing effective mental health support.	46
		Barriers to Usage and Technical Frustrations	Captures the practical challenges and frustrations individuals may face when using AI tools for mental health.	8
Building Trust and Credibility in AI Tools	Examines what factors contribute to or hinder trust in AI tools for mental health.	Trust, Security, and Ethical Responsibility	Focuses on the foundational elements needed to establish trust.	68
		Validation, Testing, and Human Supervision	Emphasizes the processes that ensure AI tools are reliable and safe, which in turn builds trust.	16
		Takes Time to Build Trust and Grow	Highlights the gradual nature of trust development, which depends on the first two codes of this category, being addressed effectively.	4
Personalized Support in AI	Focuses on the ability of AI tools to provide tailored mental health support.	Individualized Needs and Preferences	Focuses on the perception that each person is different and might need different things regarding mental health support.	18
		Personalized Exploration	Emphasizes how important is for potential clients to feel the experience with an AI tool is individual.	15
How People Think AI Can Be Used	Explores the potential applications of AI in mental health as perceived by potential clients.	Operational Support for Therapists	Focuses on the immediate, practical benefits of AI in reducing therapists' workloads.	6
		AI Complementing Therapists	Emphasizes the collaborative role of AI in enhancing therapeutic outcomes.	7
		Future Potential and Integration	Looks ahead on the perception that AI will have future in psychological therapy.	10
Why People Prefer Humans Over AI	Assesses the perceived value of AI in urgent or crisis scenarios.	Human Connection, Empathy and Physical Presence	Emphasizes the irreplaceable value of human qualities in therapy, such as emotional connection and empathy.	51
AI Utility in Immediate and Emergency Situations	Crisis Management Support and Quick Relief for Stress or Anxiety	Crisis Management Support and Quick Relief for Stress or Anxiety	Refers to the role of AI tools in providing immediate assistance during mental health crises or moments of stress and anxiety.	17
Challenges and Limitations of AI in Psychological Support	Identifies the drawbacks and challenges associated with AI in mental health.	AI Therapy: Strengths and Limitations	Explores the dual nature of AI in mental health care, focusing on its advantages and drawbacks.	31
Impact of AI on the Therapeutic Profession	Examines how AI tools might influence the role of human therapists and the mental health profession.	Reduced Demand for Therapists	Refers to the potential impact of AI tools on the demand for human therapists.	4

To finalize the findings of RQ3, Appendix P demonstrates a summary of the total of expressions per category and per code. These findings highlight that "Building Trust and Credibility in AI Tools" was the most frequently mentioned category in the responses, indicating a strong emphasis on the importance of trust as a fundamental factor for the successful integration of AI in therapeutic contexts. Participants consistently expressed concerns regarding the reliability and transparency of AI solutions.

Closely related to this concern, "Resistance to AI in Psychological Support" emerged as another theme, reflecting skepticism and hesitancy toward AI's role in mental health services. Factors such as perceived lack of human empathy and concerns over AI's limitations were frequently cited, suggesting that many individuals remain cautious about replacing traditional therapeutic methods with AI-driven

alternatives. On the other hand, the findings also demonstrate a significant level of interest and curiosity, with “Perceptions and Willingness to Use AI in Therapy” receiving 52 expressions. This indicates that while skepticism exists, many participants are open to exploring AI as a complementary tool, particularly if it proves to be accessible, reliable, and supportive of human therapists rather than replacing them entirely. Moreover, “Why People Prefer Humans Over AI” gathered 51 mentions, reinforcing the notion that human connection and empathy are crucial elements that AI tools must strive to address, even for those that never experienced psychological therapy. While trust and skepticism remain key barriers, the potential benefits of AI, such as convenience and immediate availability, suggest a cautious yet optimistic outlook. This indicates that the perceptions of potentials clients confirm that with continued advancements and ethical considerations, AI could serve as a valuable tool in the evolving landscape of psychological therapy.

5.4 RQ4 - Perceptions of AI in psychological therapy among therapists

This section presents the findings of the qualitative analysis on how therapists perceive the use of artificial intelligence in therapy.

A total of 20 interviews were analyzed using thematic analysis, leading to the identification of 22 codes grouped under 7 categories that reflect participants’ perceptions of AI applied in the psychological therapy practice. The interview script used for all 20 participants was the same and can be found in Appendix G. The only criterion of this RQ was to have therapists with a higher education degree in clinical psychology and actively practicing in the area. In terms of gender distribution illustrated in Appendix Y, 75% of the participants are female, and 25% male. Regarding age groups, the largest segment falls within 20 and 30 with 60%, 30% are between 31 and 40, and 10% are above 40 years old. When considering education levels, all the professionals have concluded master’s studies. All participants reside in urban areas, except one, indicating a homogeneous living environment. In terms of technology usage, mobile phones and computers are the most used devices, with 100% of participants relying on them, followed by tablets (15%), TVs (35%), eReaders (10%), Video Conferencing Apps (5%) and Others with 5%. The data indicates that the participants are predominantly female, urban individuals with a primarily aged between 20 and 30. They are highly educated and rely on mobile phones and computers for their daily technology use. It is interesting to note that “Video Conferencing Apps” were mentioned exclusively by this group of participants, suggesting that they are already incorporating technology into their professional practice. This usage is linked to their work and reflects the growing trend of online consultations, which are becoming increasingly widespread in today’s therapeutic landscape. The complete table with sociodemographic data is available in Appendix Q. The qualitative analysis was conducted in accordance with the

guidelines [78] outlined in Definition of Qualitative Analysis section of chapter 4 and previously explained with more detail in RQ2 section. In the first phase of the analysis, a total of 66 categories and 150 codes. After the refinement phase, a total of 7 categories and 22 codes were identified, which will be presented in this section. The complete table containing all categories, codes, and corresponding questions can be found in Appendix R. In addition to the results analysis, the saturation point was also examined. The saturation table is included in Appendix S to provide a comprehensive overview of the data saturation process and a clear visualization of response distribution across participants, confirming that saturation started to be with participant 17. From participant 17 onwards, no new insights were identified up to participant 20, indicating that thematic saturation had been achieved, and further data collection would likely yield redundant findings. Below, the results of the qualitative analysis will be presented. 20 interviews with 16 questions each were analyzed, comprising a total of 320 answers analyzed for this research. The 7 categories identified are the high-level summary of the perceptions of therapists regarding the use of AI in psychological therapy. Below, each category is introduced and explained, as well as all the codes that support the corresponding category.

Appendix R illustrates all the categories, codes and expressions for RQ4. Table 5.9 and Table 5.10 reflect the higher view of the results without the expressions.

Table 5.9 Qualitative insights on AI in therapy from therapists part I

Category	Justification	Code	Justification	Number of expressions
Awareness and General Knowledge of AI Tools in Mental Health	Explores how familiar individuals are with AI tools designed for mental health support.	Awareness of AI Tools in Mental Health	Refers to whether therapists are aware that AI tools exist for mental health support.	6
		Knowledge of AI Applications in Mental Health	Focuses on therapists' understanding of specific AI tools.	5
		Lack of Knowledge of AI Tools in Mental Health	Highlights gaps awareness of AI tools in mental health.	5
		Training and Awareness of AI in Therapeutic Practice	Refers to whether therapists are aware that AI tools exist for mental health support and that investment in the area will be needed.	12
Applications and Benefits of AI in Psychological Therapy	Explores the practical uses and advantages of AI tools in mental health care perceived by therapists.	Mental Health Tools and Innovations	Refers to the perceptions of therapists about existing tools not specifically AI based, and possible innovations that could transform their professional practice.	10
		AI in for Patients: Complementarity and Specific Use Cases	Focuses on the perceptions of AI tools complementing traditional therapy and address specific patient needs.	86
		Accessibility	Emphasizes how AI tools make mental health care more accessible to a wider audience.	35
Ethical Considerations and General Concerns	Explores the ethical and other concers specif to AI applied to psychological therapy..	Ethical Concerns and Implications	Focuses on the ethical issues and challenges associated with the use of AI in mental health care.	60
		Concerns About AI's Capabilities and Potential Risks	Highlights worries about the limitations of AI and the risks associated with its use in mental health care.	92

Table 5.10 Qualitative insights on AI in therapy from therapists part II

Category	Justification	Code	Justification	Number of expressions
Ethical Considerations and General Concerns	Explores the practical uses and advantages of AI tools in mental health care perceived by therapists.	Negative Impact of AI Data Access from Patients by Therapist	Focuses on the negative about using data of patients' communications with AI tools in the traditional process.	10
		Using AI to analyse data from recorded sessions	Explores the negative perceptions aout using AI to analyze data from recorded therapy sessions.	6
AI vs. Human	Explores the differences, interactions, and comparisons between artificial intelligence and human capabilities.	AI and Human Bonding	Explores the potential for connection and interaction between humans and AI systems.	42
		Lack of Emotional Depth and Authenticity in AI	Indicates the inability of AI to fully replicate or understand human emotions, leading to interactions that may feel superficial or artificial.	47
		Human Aspects of Therapy	Indicates the unique emotional, empathetic, and intuitive elements that human therapists bring to therapeutic practices, which AI cannot fully replicate.	40
		Therapist-Patient Relationship	Indicates the deeply personal and trust-based connection between a human therapist and patient, crucial for effective therapy and emotional healing.	38
Perception of the Future	Explores how therapists view the evolving role of AI, particularly in psychological therapy and their expectations for the future.	Accelerators for Therapy AI Adoption by Patients	Indicates factors that drive patients to accept and use AI in therapy, such as accessibility, convenience, and perceived effectiveness.	25
		Perception of the Future by Professionals	Indicate how therapists envision the integration of AI in their field.	18
AI Benefits and Efficiency in Therapeutic Practice	Explores the benefits and efficiency that artificial intelligence can bring to therapeutic practice, both for therapists and patients.	Enhancing Therapist Efficiency with AI	Explore the use of AI to optimize administrative tasks, data analysis, and clinical support, allowing therapists to focus more on direct patient care.	69
		Positive Impact of AI Data Access from Patients by Therapist	Explores the access to data collected and analyzed by AI that can provide valuable insights into patient progress and needs, improving clinical decision-making.	12
		Recognized Benefits of AI for Professionals	iIdicates the recognized benefits of AI for therapists, such as improved diagnostic accuracy, treatment personalization, and reduced workload.	7
Professional Adaptation to AI in Therapy	Explores how therapists adapt to the integration of AI in therapeutic practices, including challenges and resistance.	Need for Professional Adaptation	Indicates the necessity for therapists to embrace technological tools and adjust their practices to effectively incorporate AI into their work.	13
		Resistance to AI integration by Professionals	Explores the reluctance or opposition among some therapists to adopt AI, often due to concerns about job security, ethical issues, or a preference for traditional methods.	12

To finalize the findings of RQ4, Appendix S presents a summary of the total of expressions per category and per code.

These findings reveal a high degree of skepticism among professionals regarding AI in psychological therapy. The most discussed category were ethical issues with 168 expressions identified and the comparison between AI and human therapists (167 expressions), highlighting fears

about loss of human connection, empathy, and the therapeutic bond – key elements in psychological therapy that professionals believe AI cannot fully replicate.

While there was some openness to AI integration, it was primarily seen as a complementary tool to the professional practice rather than a replacement. The applications and benefits of AI (131 expressions) were acknowledged, particularly in mental health assessments and administrative support. Professional adaptation to AI (25 expressions) was barely mentioned, suggesting that adoption remains limited due to lack of training and skepticism.

Overall, the findings suggest cautious optimism - AI is unlikely to replace therapists but could serve as a valuable tool if implemented thoughtfully. However, for successful integration, it is crucial to address ethical concerns, ensure proper training, and maintain the core human aspects of therapy.

5.5 RQ5 - Concerns of using AI in psychological therapy

This section presents the findings of the SLR and the qualitative analysis on the concerns of using AI in psychological therapy.

The SLR provides a comprehensive overview of existing concerns regarding the use of AI in psychological therapy, as documented in the literature. Complementing this, the qualitative analysis offers deeper insights, capturing real-world viewpoints. This dual approach ensures a robust and holistic understanding of the concerns, integrating both theoretical foundations and practical observations.

Following, the concerns identified in the SLR will be analyzed, providing an overview of the most frequently mentioned issues regarding the use of AI in psychological therapy. After the SLR's concerns analysis, the findings related to RQ2, RQ3 and RQ4 will be addressed and this section will finalized with a synthesis of all findings, offering a general conclusion on the topic.

Regarding the SLR, Appendix D illustrates all the concerns found during the literature review and on Appendix Z it is possible to see all the references for each concern identified.

Privacy, data security, and anonymity [4] ranking as the most frequently mentioned issue on the overall literature [70]. Ethical risks, including over-reliance on AI [59], bias [75], lack of regulatory oversight [63], and misdiagnosis [82], were also prominent. Many studies highlighted AI's inability to replicate human understanding [54], empathy, and non-verbal communication [83], raising doubts about its effectiveness in complex therapeutic contexts.

Another major concern was the limited depth and personalization of AI interactions [57], with many sources criticizing its scripted nature and lack of adaptability [57]. AI was seen as most suitable for subclinical populations [63], as it struggles with crisis intervention and deeper therapeutic needs.

Loss of faith in AI therapy, dehumanization of care, and concerns about AI replacing human therapists were also frequently cited [70].

While AI may improve accessibility and support low-risk users, the literature consistently warns that it should not replace human therapists. Instead, AI should be viewed as a supplementary tool, requiring stronger regulation, ethical safeguards, and continuous improvement to address its limitations [57].

Participants who had prior experience with therapy (RQ2) expressed several concerns about using AI systems for psychological therapy. A recurring theme was the lack of human empathy and connection. P5/Q1 noted, “A therapist, being a person, has a different response each time, and can offer deeper perspectives.” Similarly, P8/Q1 pointed out that “a machine wouldn’t understand things like sarcasm or irony, which are part of my communication style.” P8/Q3 and P16/Q3A both emphasized that AI would struggle to interpret subtle expressions, tone, and emotions.

The impersonal nature of AI was another common concern. P18/Q1 stated, “It feels very impersonal. I need to know who I’m talking to about such private issues,” while P19/Q3A described how “not having a human connection makes it feel like talking to a void.”

Participants also highlighted concerns about trust and credibility. P5/Q3A mentioned doubts about the trustworthiness of AI systems, particularly regarding privacy and data security and P8/Q3A, felt that the responses provided by AI could feel generic and not tailored to the individual.

Another issue raised was the limited depth of interaction. P5/Q1 expressed concerns that AI interactions might be superficial and incapable of addressing the root of an issue.

The potential for misinterpretation or errors was also seen as a major concern. P2/Q2 and P14/Q3A worried that AI could say something harmful or incorrect in sensitive contexts.

Some participants expressed concerns about the impact on social skills and isolation. P2/Q1 suggested that “talking to a computer might make you even more disconnected from people,”.

Participants also raised the issue of bias and limitations in AI training, with P16/Q3A pointing out that “AI reflects human biases because it’s trained by humans, so it might not be completely impartial.” and there was also a concern about dependency on technology. P2/Q3A noted that the constant availability of AI might lead to unhealthy reliance, stating, “It might create dependency since it’s always available and never says no.”

Participants who have never experienced therapy (RQ3) expressed concerns about the use of AI in psychological therapy, focusing on its inability to replicate human connection and emotional depth. P1/Q6 emphasized that “human contact makes a difference,” while P12/Q7 noted, “It’s hard to replace the human ability to perceive stress or emotions through body language or tone of voice.”

Trust and authenticity were recurring themes, with P10/Q6 stating, “If I knew I was talking to a machine, I’d probably have reservations about answering honestly."

Others highlighted the rigidity of AI systems, with P3/Q5 remarking, “It just follows a script, and that frustrates me.” Participants also raised concerns about AI’s reliability, as P9/Q7 stressed the need for professional validation of its data, and P11/Q6 expressed doubts about continuing use if AI made errors or contradicted itself. The lack of personalization was another issue, as P17/Q7 explained that therapy “differs for everyone,” and AI responses might feel too generic.

In summary, participants questioned whether AI could handle the emotional complexity and adaptability required in therapy, expressing a strong preference for human interaction due to AI’s perceived limitations in empathy, authenticity, and reliability.

Therapists (RQ4) expressed several concerns about the integration of AI into psychological therapy. A recurring issue was the fear of job replacement and the loss of human connection in therapy. P1/Q1 described feeling “fear and some revolt” upon first hearing about AI in therapy, questioning “how years of studying and developing therapeutic skills could potentially be replaced by these tools”. Similarly, P6/Q1 noted, “It seems exciting at first glance… but lacks the relational aspect,” highlighting the importance of human interaction in therapeutic processes.

Another key concern related to emotional and relational depth – P5/Q1 emphasized that AI might be momentarily useful for containment or providing strategies, but doubted its capacity to transform - “It might help momentarily… but transformation only occurs in relational settings.”.

Concerns about misunderstanding therapy’s complexity also arose. P4/Q1 pointed out that AI could provide helpful strategies, but many clients struggle to apply them without deeper therapeutic guidance, noting, “People need more than strategies, they need help implementing them, and that requires relational support.”

Therapists also feared the dehumanization of care and the risk of oversimplifying mental health. P12/Q4 voiced discomfort with the way AI tools might reduce complex human experiences to algorithms, noting that “clients often bring layers of emotion and history that cannot be captured by data.” P18/Q4 added that the need for authenticity and empathy is often tied to nonverbal communication and the therapist’s ability to genuinely connect, something AI cannot replicate.

Finally, accessibility was seen as both a potential benefit and a concern. While some therapists, such as P3/Q4 acknowledged AI’s potential to increase access to mental health tools for underserved populations, they worried about the lack of emotional safety and the potential for misuse of these tools. P8/Q4 said, “AI might be available 24/7, but it cannot provide the safe space and nuanced understanding necessary for true therapeutic work.”

In summary, the therapists expressed deep concerns about AI's ability to replicate the core human elements of therapy, including relational depth, empathy, and emotional presence. While they recognized some practical benefits of AI, particularly for administrative tasks or increasing accessibility, they doubted its ability to truly transform and heal in the way that human therapists do.

As analyzed above, there are several points of contact between the SLR and the qualitative analysis of the interviews, reinforcing key challenges regarding AI in psychological therapy.

The concerns identified in the SLR are largely confirmed by the qualitative interview findings. Across the 3 groups, the dominant concern is AI's inability to replicate human empathy, emotional depth, and relational complexity. This reinforces the idea that AI cannot replace human therapists but may serve as a supplementary tool for specific, limited applications.

Trust, privacy, and security issues were also prevalent across both sources, with participants questioning AI's credibility and the ethical implications of using automated systems for mental health support. The structured and sometimes generic nature of AI responses was another major concern, with participants emphasizing the need for personalized, flexible therapeutic interactions that AI struggles to provide.

Therapists expressed significant resistance to AI integration, fearing the dehumanization of care and the potential undervaluing of their expertise. While some acknowledged AI's potential benefits in expanding access to mental health resources, they remained skeptical of its ability to replace core aspects of therapeutic practice.

Ultimately, the findings suggest that while AI has the potential to assist in mental health support, it is unlikely to replace human therapists due to fundamental limitations in empathy, adaptability, and relational depth. Instead, AI could be positioned as a complementary tool, particularly for administrative support, psychoeducation, and initial mental health screening, rather than as a substitute for professional therapy.

To finalize this chapter, a clear picture of the overall findings during the research is illustrated in Figure 5.1.

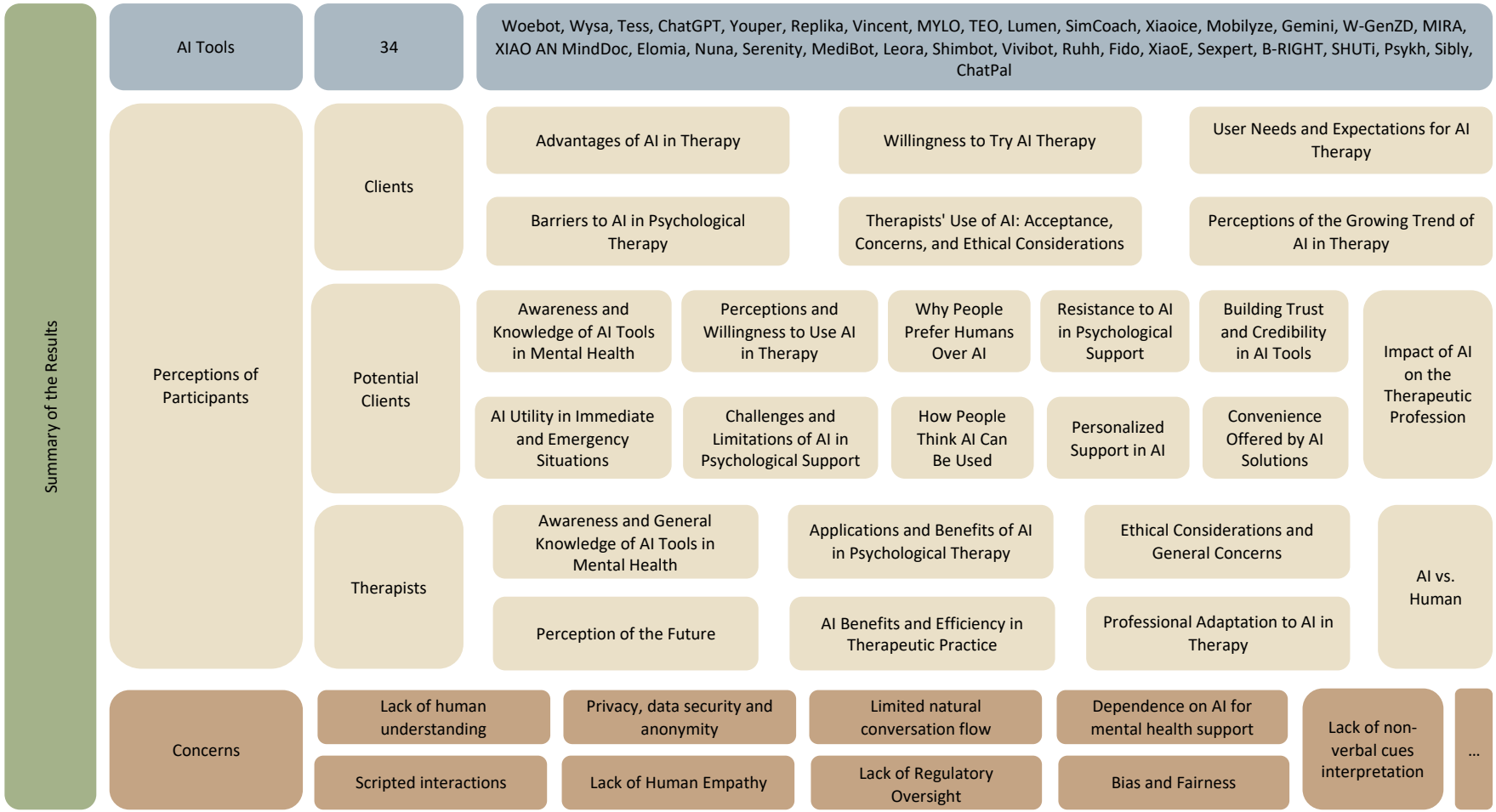

Figure 5.1 Summary of the overall results for each of the RQs

6. Conclusion

The primary goal of this research was to explore what has been achieved and developed in the application of AI within the field of psychological therapy. This objective was successfully met, as evidenced by the responses to all RQs.

The SLR illustrated clearly several AI tools applied in the context of psychological therapy and it was possible to conclude that the most impactful applications are focused on CBT, including interventions such as psychoeducation, initial assessments, and structured therapeutic exercises [62].

Regarding the perceptions of the groups analyzed, current and potential clients express a mix of curiosity and concern, particularly regarding ethical issues such as data privacy and the transparency of AI decision-making processes and therapists were able to see some advantages in AI as a useful complement to therapy, particularly in increasing accessibility and efficiency, but they emphasize its limitations in addressing the complex, relational, and emotional aspects of human therapy.

It is important to note that approaches such as psychodynamic therapy and psychoanalysis remain distant from being replicated by AI, given their reliance on deep interpersonal understanding and nuanced emotional insight [84]. Furthermore, the evidence suggests that while AI tools excel in structured and task-oriented interventions, they are far from replacing the essential human connection that underpins effective therapy. Ethical and practical concerns remain central, and the potential benefits must be carefully weighed against the risks and limitations.

These results contribute to the field by demonstrating that AI systems can enhance the accessibility and efficiency of psychological therapy, particularly in structured frameworks such as CBT [71], while clarifying the areas where human expertise remains indispensable.

The findings can also have real-world applications, as they highlight opportunities for integrating AI into mental health services [85]. For instance, AI-driven tools could be deployed to address the global shortage of mental health professionals by providing scalable solutions for psychoeducation and preliminary screening [56]. Additionally, these systems could complement therapists by automating repetitive tasks, allowing professionals to dedicate more time to complex clinical work. The emphasis on CBT tools suggests that therapy apps and platforms can leverage AI to create more interactive and accessible mental health resources for diverse populations [62]. These applications demonstrate the potential for AI to act as an enabler of psychological therapy innovation.

6.1 Limitations

Although this research is focused on three distinct groups - current and former clients, potential clients, and therapists - it did not incorporate a practical component in which participants could directly engage with AI-based therapeutic tools. The inclusion of real-world interactions with AI systems could have offered deeper insights into user perceptions, behavioural responses, and potential therapeutic efficacy, thereby enriching the study's findings. Future research could benefit from integrating experimental conditions where participants interact with AI-driven mental health solutions, allowing for a more comprehensive assessment of their feasibility and impact.

Another limitation concerns the tools used for data analysis. While MAXQDA or similar qualitative research software could have facilitated a more sophisticated approach to organizing and coding the data, this research primarily relied on Excel for the quantitative component. Given the substantial number of responses, the use of specialized research tools might have enhanced the efficiency and depth of the analysis. However, the decision to use Excel was driven by considerations of accessibility, familiarity, and practicality, particularly within the constraints of time and the need for a streamlined approach to data management.

Another consideration is the representativeness of the sample. While efforts were made to include a diverse range of participants, the sample may not fully reflect the broader population of clients, potential clients, and therapists. Factors such as cultural background, therapeutic orientation, and prior exposure to AI tools could influence perspectives on AI in therapy. A larger, more representative sample across different regions and demographics would enhance the generalisability of the findings.

Moreover, this research provides a picture of participants' attitudes toward AI in therapy at a single point in time. However, perceptions of AI are likely to evolve as technology advances and as AI systems become more integrated into mental health care. A longitudinal study tracking shifts in attitudes and experiences over time would provide valuable insights into the long-term viability and acceptance of AI in therapy.

Finally, the research primarily explores subjective perceptions of AI in therapy rather than its actual effectiveness in clinical settings. While this is a crucial step in understanding acceptance and potential barriers, future research should examine the real-world impact of AI-assisted interventions on therapeutic outcomes, client satisfaction, and treatment adherence. Furthermore, this replace did not include a direct comparison between AI-driven therapeutic interactions and traditional human therapy sessions. A comparative analysis - measuring factors such as client engagement, emotional connection, and therapeutic progress - could provide a more nuanced understanding of AI's role in psychological therapy.

6.2 Future Work

Future research should aim to address the limitations identified in this research while also expanding the scope of inquiry to provide a more comprehensive understanding of AI's role in psychological therapy. One promising approach would be the development and evaluation of an AI-based application specifically designed for psychological therapy, allowing researchers to collect real-world data on user experiences, therapeutic outcomes, and engagement patterns. Such approach would not only offer valuable insights into the effectiveness of AI-driven interventions but also on potential ethical concerns and practical challenges associated with their implementation.

Alternatively, future research could focus on the analysis of existing AI-powered applications, investigating how different user groups - such as clients, potential clients, and therapists - perceive their utility, effectiveness, and inherent limitations. A comparative approach, assessing multiple AI systems with varying levels of sophistication, could provide a more nuanced perspective on the strengths and weaknesses of these tools across different therapeutic modalities.

In addition to client perspectives, further research should explore how therapists are currently integrating AI tools into their practice, assessing both the tangible outcomes of these integrations and the broader implications for the therapeutic alliance. Understanding how AI can support professionals in streamlining administrative tasks, enhancing clinical decision-making, and offering supplementary interventions would help delineate the boundaries between automation and human expertise. Additionally, studying hybrid therapy models - where clients engage with both human therapists and AI-based support systems - could offer valuable insights into the potential synergies and challenges associated with blended approaches.

Another critical area for future research involves the continuous evolution of AI's emotional intelligence capabilities. As advancements in natural language processing and affective computing progress, AI systems are expected to demonstrate improved sensitivity to emotional cues, greater contextual understanding, and enhanced empathy in their interactions with users. Investigating the extent to which these developments can contribute to more meaningful therapeutic experiences will be crucial in determining whether AI can move beyond a purely supportive role toward a more interactive and responsive therapeutic presence.

Beyond technological advancements, research should also focus on the development of interdisciplinary training models to equip mental health professionals with the necessary skills to work effectively alongside AI systems. This includes not only technical proficiency in using AI-assisted tools but also a critical understanding of their limitations, ethical considerations, and best practices for maintaining human-centered care in an increasingly digitized therapeutic landscape. Establishing

structured training frameworks will be essential to ensuring that AI integration enhances rather than disrupts the therapeutic process.

In conclusion, this research highlights that AI has made significant progresses within the field of psychological therapy, particularly in the development of tools aligned with CBT. However, despite its growing potential, AI remains a complement rather than a substitute for human therapists, reinforcing the fundamental importance of the human connection in therapeutic work. While emerging evidence, particularly from 2024 onwards, suggests promising advancements, the ethical and clinical implications of AI adoption must be carefully considered to ensure responsible and balanced implementation. By fostering a collaborative dialogue between technology developers, mental health professionals, and policymakers, future research can help bridge the gap between innovation and practice, contributing to a more integrative and effective approach to psychological therapy.

7. References

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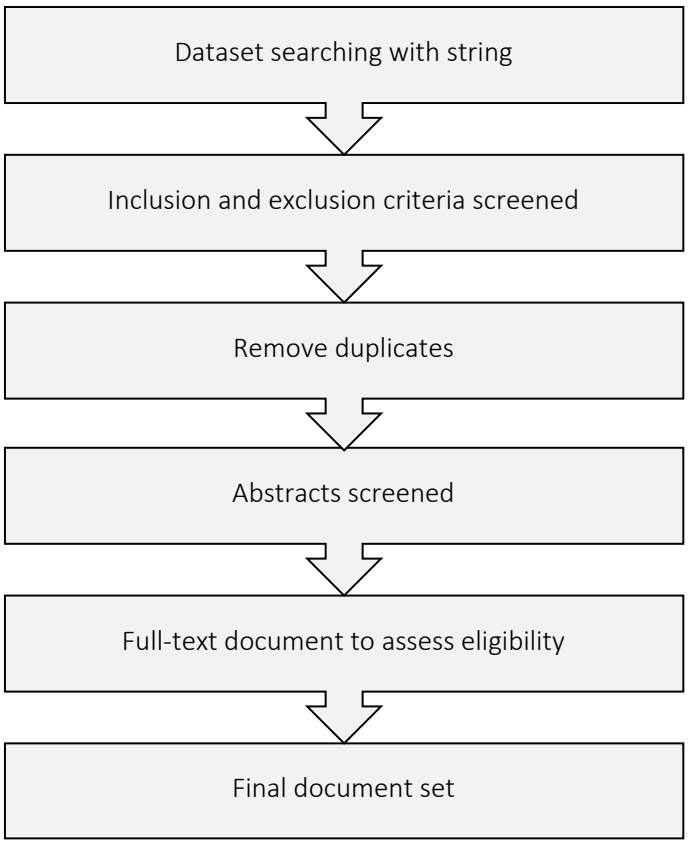
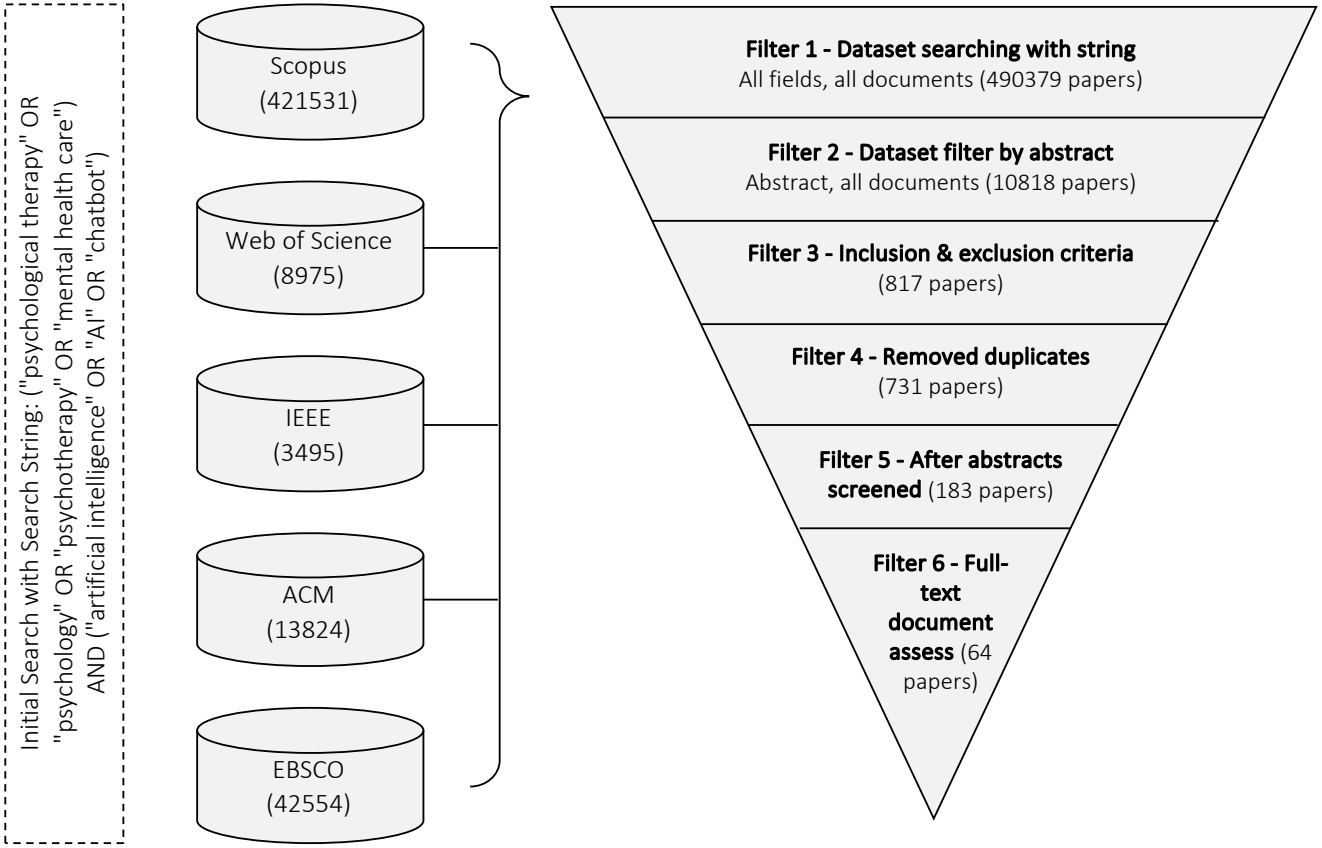
Appendix A

The review protocol used in this research



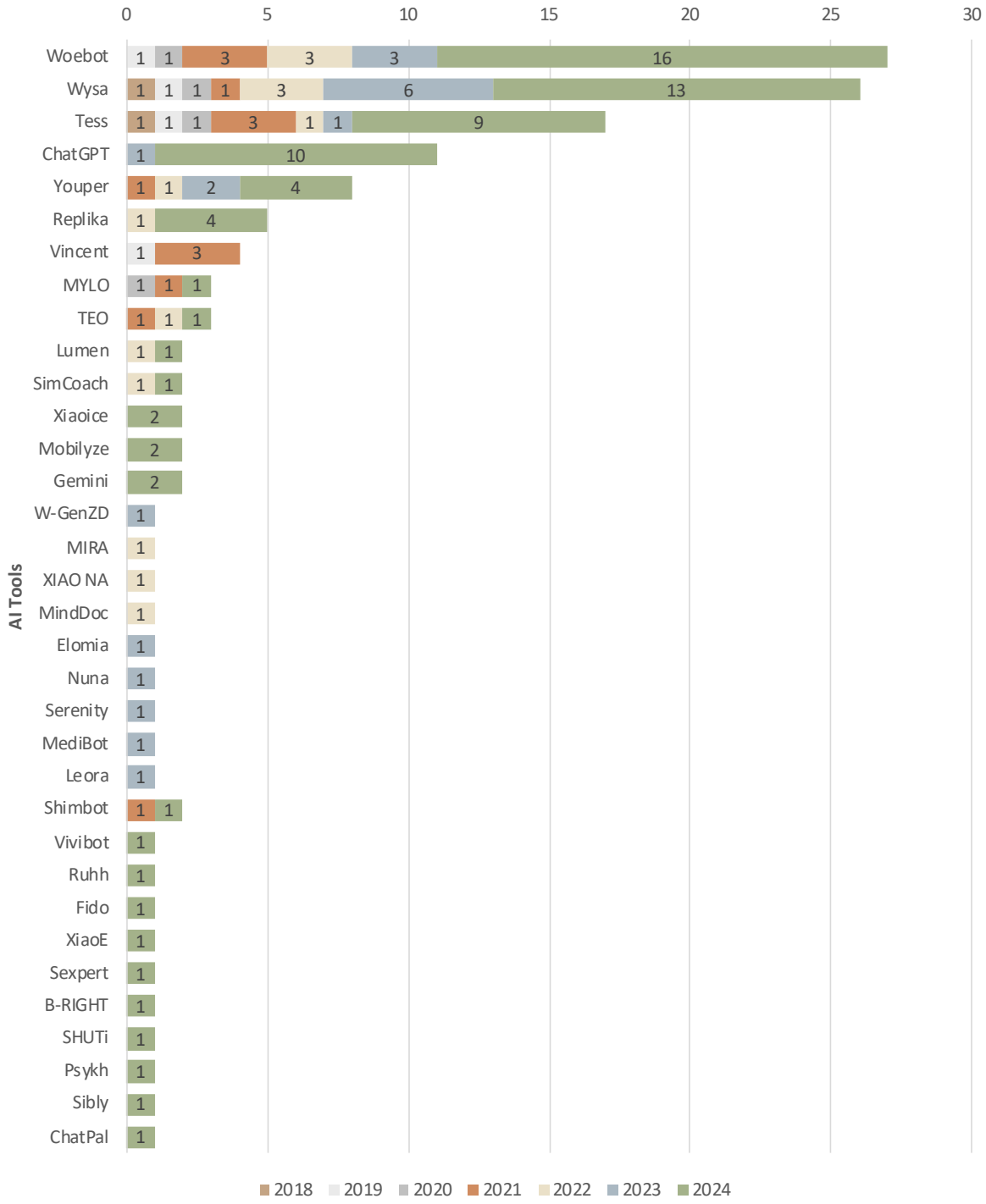
Appendix B

The complete summary with the results of the applied SLR



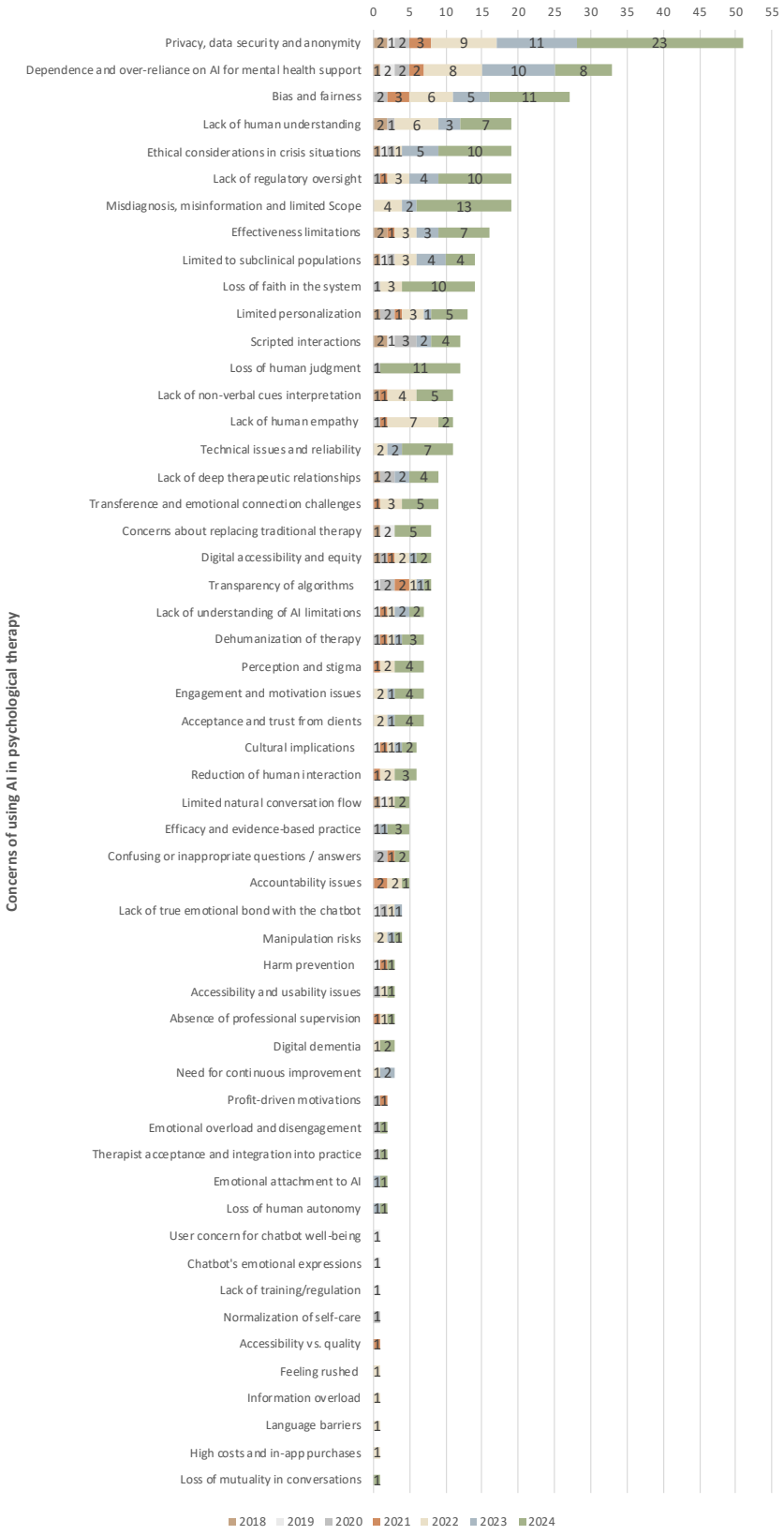
Appendix C

The full list of AI tools identified by number of publications over the years



Appendix D

The full list of AI concerns identified by number of publications over the years



Appendix E

The SLR process, step by step

1. Planning

Establishing the need for an SLR

Identifying the gap in knowledge or rationale that justifies conducting a systematic literature review.

Development of the Review Protocol

a) Research Questions

Specific questions the review aims to answer, guiding the search and analysis.

b) Search Strategy

Keywords: Terms or phrases used to search for studies related to the research topic.

Databases: Scientific platforms where the search for relevant literature is conducted.

c) Inclusion and Exclusion Criteria

Rules to determine which studies are included or excluded based on factors like language, document type, and publication date.

2. Conducting

Identification Databases

The process of searching and retrieving relevant studies from selected scientific databases using predefined keywords and search strategies.

Selection of Studies

Screening and filtering the retrieved studies based on inclusion and exclusion criteria to ensure relevance to the research questions.

Quality Assessment

Evaluating the methodological rigor, reliability, and relevance of the selected studies to ensure that only high-quality evidence is included in the review.

Results

Presenting the findings of the systematic review in relation to the specific research questions, summarizing key insights and themes.

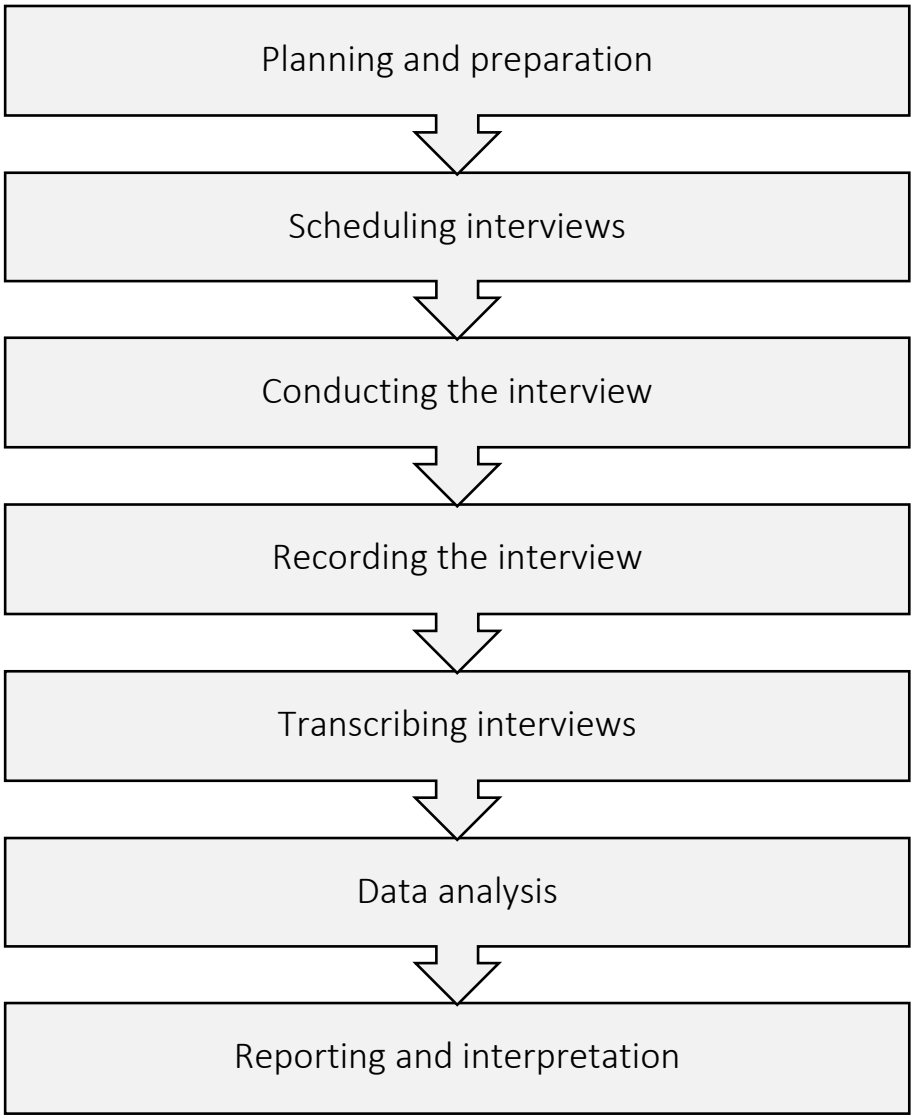
3. Reporting

Report Findings

Analysing and interpreting the findings, highlighting their implications, addressing gaps, and proposing recommendations for future research.

Appendix F

Full process for conducting interviews



Appendix G

Interview guide RQ2

Note: All the interview guides were translated with the assistance of ChatGPT (GPT-4o model).

[*Common across the 3 interview guides.****]***

[Informed Consent: *Thank you very much for agreeing to participate in this interview. My thesis explores the possibility of replacing the traditional model of psychological or psychotherapy consultations with Artificial Intelligence systems, and the purpose of this interview is to understand your perspective on this topic. Your participation is voluntary and confidential. If there is any question you do not wish to answer or if you decide to withdraw at any point, you are free to do so. There are no right or wrong answers, and your participation does not require any prior knowledge of the topics we will discuss. This interview will be recorded. Do you agree to proceed?*

Sociodemographic Data: *Age; Gender; Level of education; Profession or occupation; Have you ever attended psychological therapy, or are you currently undergoing therapy?; For how long?; Do you live in an urban or rural area?; What types of devices or technologies do you regularly use in your daily life?*

Introductory Text: *Artificial Intelligence (AI) refers to the ability of machines or systems to perform tasks that would typically require human intelligence. These systems learn from the data they receive and can improve their performance over time. AI chatbots are programs that simulate conversations with humans using natural language. ChatGPT is an example of such a chatbot. In the field of mental health, AI chatbots can be used to provide emotional support, simulate therapy sessions—like the video I shared with you before our interview—or offer self-help resources. Some AI chatbots for mental health are already available, helping users manage emotions and providing strategies to cope with anxiety, depression, or stress. Interaction with these chatbots takes place via text or voice messages, just as you would communicate with a person. In the context of mental health, these chatbots are designed to help identify emotions and offer guidance based on scientifically validated therapies.****]***

Interview Questions:

1. Comparing your experiences in therapy sessions with a human therapist, how do you imagine the experience of using an AI chatbot with which you could converse, seek help, and share feelings?
2. If you were going through a difficult time and did not have access to traditional therapy, would you consider speaking with an AI? Why or why not?
3. Compared to your experiences in therapy sessions with a human therapist, what advantages do you see in using AI systems or chatbots compared to the traditional therapy model?
    a. And what disadvantages?
4. In your opinion, what are the most important aspects that an AI system or chatbot would need to have to function effectively for you in a therapeutic setting?
5. What would make you feel comfortable using an AI system or chatbot for psychological support?
    a. And what would make you uncomfortable?
6. Do you think you would feel safe using these types of tools?
    a. If you were open to speaking with an AI, what guarantees would an AI system or chatbot need to provide for you to feel safe using it?
7. Imagine a scenario where you are in therapy, and between sessions, you have the option to use an AI system or chatbot for additional support. You would have both a human therapist and an AI chatbot. Do you think you would use it?
    a. (If the previous answer is “yes”) Based on your response, would you allow your therapist to access the communications you had with the AI chatbot?

8. AI tools and systems already exist that can analyze audio recordings and draw conclusions from them. Imagine that your therapist (current or future) asked for your permission to record your sessions and then use these recordings or session data to seek assistance from an AI system or chatbot in thinking about your case. Would this be something you would agree to? Why or why not?
9. Are there aspects of human interaction in therapy that you believe could never be replicated by Artificial Intelligence?
10. Do you think the use of AI systems or chatbots as an alternative to the traditional therapy model will become a growing trend? Why?
11. Nowadays, there is a lot of discussion about which professions AI might replace. Do you think human therapists could eventually be replaced by AI in the future? Why or why not?

Interview guide RQ3

[Common part...

Sociodemographic Data: *Age; Gender; Level of education; Profession or occupation; Do you live in an urban or rural area?; What types of devices or technologies do you regularly use in your daily life? …* ***Common part.]***

1. Had you ever heard of Artificial Intelligence tools applied to mental health before?
2. If you had the opportunity to try an AI system or chatbot for psychological support, would you be open to using it?
3. In your opinion, for you to consider using an AI system or chatbot, what would be the most important aspects the system would need to have to function effectively as a psychological support tool for you?
4. Do you think the fact that these AI-based systems do not involve a human would make you use them more readily than the traditional model? Please explain.
5. Do you believe an AI system could be useful for managing simpler situations or short-term crises?
6. What would make you feel comfortable using an AI system or chatbot for psychological support?
    a. And what would make you feel uncomfortable?
7. Do you think you would feel safe using these types of tools?
    a. If you were open to speaking with an AI, what kind of guarantees would you like the system to provide for you to feel safe using it?
8. Overall, do you see opportunities that AI could bring to psychological support compared to the traditional therapy model? Which ones?
9. Overall, do you see barriers that AI could present for psychological support compared to the traditional therapy model? Which ones?
10. Do you think an AI system or chatbot could replace some functions of a human therapist? Which ones, and why?
11. Even if you have never undergone therapy, based on what you know about the topic, is there any aspect of human interaction in therapy that you believe AI could never replicate?
12. In your opinion, will the use of AI systems or chatbots as an alternative to the traditional therapy model be a growing trend? Why?
13. Nowadays, there is a lot of discussion about which professions AI might eliminate. Do you think human therapists could eventually be replaced by AI in the future? Why or why not?

Interview Guide RQ4

[Common part...

Sociodemographic Data: *Age; Gender; Level of education; Psychologist or PsychotherapistDo you live in an urban or rural area?; What types of devices or technologies do you regularly use in your daily life? …* ***Common part.]***

1. Had you ever heard of Artificial Intelligence tools applied to mental health before?
    a. What do you think about the possibility of using AI in mental health?
2. Do you think an AI system or chatbot can create some form of meaningful bond, or is that something exclusive to human interaction? Please explain.
3. In situations where, for some reason, a person is unable to access therapy sessions, do you think patients could benefit from speaking with an AI chatbot? Why or why not?
4. Considering a scenario where a patient is undergoing therapy (traditional model), if there were a digital AI-based tool or chatbot that could provide immediate emotional support when the therapist is unavailable, how do you think this could impact the therapeutic process?
    a. Do you see advantages in this approach? If so, what are they?
    b. And disadvantages? If so, what are they?
    c. What impact do you think it would have if you, as a therapist, had access to the communications that took place between the patient and the AI chatbot before sessions?
5. Do you think therapists, in general, are receptive to using AI tools to support their work?
    a. What functions or forms of support do you think would be most useful to you regarding the use of AI tools in your work?
6. Imagine there was an AI-based system (trained with in-depth knowledge of mental health) that listened to recorded therapy sessions and built a history for each of your patients. Whenever you wanted, you could consult this system and discuss the clinical case with it. How would you feel about that?
7. How do you see the future of the traditional therapy model with the advancement of technology?
8. Do you think the use of AI systems or chatbots as an alternative to the traditional therapy model will be a growing trend? Why?
9. If Artificial Intelligence continues to develop in the field of mental health, how do you think human therapists will need to adapt?
10. Do you believe an AI system could replace some aspects of a human therapist's work? If so, which ones? If not, why?
11. Are there aspects of human interaction in therapy that you believe could never be replicated by AI systems? If so, which ones?

Appendix H

Complete analysis table of AI tools found in the SLR

AI Tool	Type	Functionality	Therapeutic Approach	Key Features	Accessibility
Woebot	Chatbot	Therapeutic Interventions	CBT-based interventions	Anxiety and depression support	Active and world-wide accessible
Wysa	Chatbot	Therapeutic Interventions	CBT, MBSR	Anxiety, depression, stress	Active and world-wide accessible
Tess	Chatbot	Therapeutic Interventions	CBT-based interventions	Coping strategies and psychoeducation	Active and world-wide accessible
Youper	APP	Therapeutic Interventions	CBT, MBSR	Emotional insights, mood tracking	Active and world-wide accessible
ChatPal	Chatbot	Therapeutic Interventions	Positive psychology	Stress management, well-being support	Limited accessibility
Elomia	Chatbot	Therapeutic Interventions	CBT, MBSR	Guided self-help programs	Active and world-wide accessible
Vivibot	Chatbot	Therapeutic Interventions	Positive psychology	Support for cancer survivors	Limited accessibility
SHUTi	Digital Mental Health Tool	Therapeutic Interventions	CBT for insomnia	Sleep disorder management	Limited accessibility
B-RIGHT	Digital Mental Health Tool	Therapeutic Interventions	CBT for stress and resilience	Resilience-building programs	Limited accessibility
Sibly	APP	Therapeutic Interventions	CBT-based interventions	Hybrid model	Active and world-wide accessible
Fido	Chatbot	Therapeutic Interventions	CBT-based interventions	Stress, anxiety and depression support	Limited accessibility
XiaoE	Chatbot	Therapeutic Interventions	CBT, MBSR	Depression support	Limited accessibility
W-GenZD	Chatbot	Therapeutic Interventions	CBT-based interventions	Stress management, youth-focused support	Limited accessibility
Leora	Chatbot	Therapeutic Interventions	CBT-based interventions	Anxiety and depression support	Limited accessibility
Shimbot	Chatbot	Therapeutic Interventions	Positive psychology, CBT	Mental well-being	Limited accessibility
Nuna	APP	Therapeutic Interventions	CBT, ACT, MBSR	Stress, anxiety, mental well-being	Limited accessibility
MYLO	Chatbot	Therapeutic Interventions	MOL	Stress relief	Limited accessibility
Lumen	Voice assistant	Therapeutic Interventions	PST	Voice-based therapy	Active and world-wide accessible
MindDoc	APP	Self-Help and Wellness	Self-guided support	Self-assessments, progress tracking	Active and world-wide accessible
Serenity	APP	Self-Help and Wellness	Emotional support	Journaling, emotion tracking	Active and world-wide accessible
Vincent	Virtual Assistant	Self-Help and Wellness	Well-being, self-reflection	Promote self-compassion	Limited accessibility
TEO	Chatbot	Self-Help and Wellness	Emotional intelligence	Stress and anxiety management	Limited accessibility
Psykh	Chatbot	Self-Help and Wellness	Emotional support	Journaling, self-reflective conversations	Limited accessibility
Xiaoice	AI Companion	Self-Help and Wellness	Emotional companionship	Human-like conversation, emotional tracking	Limited accessibility
Replika	AI Companion	Self-Help and Wellness	Emotional companionship	Journaling, mood tracking, exercises	Active and world-wide accessible
SimCoach	Virtual Human Support System	Support and Monitoring	PTSD assessment and support	Veteran mental health support	Active and world-wide accessible
MIRA	Chatbot	Support and Monitoring	Psychoeducational support	Mental health resources	Active and world-wide accessible
MediBot	APP	Symptom Tracking and Monitoring	Symptom monitoring	Tracks emotional health and habits	Limited accessibility
Mobilyze	APP	Symptom Tracking and Monitoring	Behavioral monitoring	Tracking mood, sleep, and activity	Limited accessibility
Gemini	Chatbot	General-Purpose AI Chatbot	None (general support)	Text, image, voice interactions	Active and world-wide accessible
ChatGPT	Chatbot	General-Purpose AI Chatbot	None (general support)	Open-ended conversation	Active and world-wide accessible
XIAO AN	Chatbot	General-Purpose AI Chatbot	None (general support)	AI companionship for chinese users	Limited accessibility

Appendix I

Complete table with sociodemographic data from RQ2 participants

Participant	Interview Date	Age	Gender	Education Level	Profession or Occupation	Duration of Psychological Therapy	Lives in Area	Technologies Used
1	21/set	33	Male	Bachelor's Degree	IT Specialist	2 months (3 to 4 sessions)	Urban	Mobile phone, PC, iPad
2	23/set	28	Female	Master's Degree	Musician - singer and songwriter	16 years	Urban	Mobile phone, laptop, TV, iPad, Kobo
3	25/set	50	Male	Bachelor's Degree	Unemployed	5 months	Urban	Mobile phone, Computer
4	27/set	35	Female	Bachelor's Degree	Senior Diagnostic and Therapeutic Technician - Cardiopneumology	2 years	Urban	Mobile phone, Computer
5	27/set	31	Female	Master's Degree	Manual Tester in IT	9 months	Urban	Mobile phone, Computer, TV
6	27/set	32	Female	Master's Degree	Doctor	4 years	Urban	Mobile phone, Computer
7	28/set	33	Female	Postgraduate	Cabin Crew	6 years	Urban	Mobile phone
8	29/set	24	Female	Master's Degree	Vocal Coach	From 7 to 9 years old + 4 months currently	Urban	Mobile phone, Computer
9	29/set	22	Female	Bachelor's Degree	Medical Student	5 years + a few months + 2 years	Urban	Mobile phone, Computer, iPad
10	29/set	19	Female	High School	Psychology Student	1 year in childhood + 3 years currently	Urban	Mobile phone, Computer
11	29/set	55	Female	Bachelor's Degree	Graphic Designer	5 months	Urban	Mobile phone, Computer
12	01/out	33	Female	Master's Degree	Unemployed - Higher Education Technician, currently job seeking	3.5 years	Urban	Mobile phone, Computer, TV
13	01/out	26	Female	Master's Degree	IT Consultant (until August 2024), currently on a break for Music	1 year	Urban	Mobile phone, Computer
14	01/out	40	Male	Bachelor's Degree	Scrum Master	1 year	Urban	Mobile phone, Computer, ChatGPT
15	03/out	36	Female	Master's Degree	Architect	3 years	Urban	Mobile phone, Computer
16	03/out	33	Non-binary	Bachelor's Degree	Photographer	3 years	Urban	Mobile phone
17	03/out	32	Male	Bachelor's Degree	Visual Merchandiser at Ikea	1.5 years	Urban	Mobile phone, Computer
18	08/out	26	Male	Bachelor's Degree	Cardiopulmonologist	4 years	Urban	Mobile phone, Computer
19	09/out	19	Female	2nd year Bachelor's Degree	Psychology Student	2 years	Urban	Mobile phone, Computer
20	13/out	19	Female	2nd year Bachelor's Degree	Psychology Student	2 years	Urban	Mobile phone, Computer
21	19/out	18	Male	12th Grade	Student	3 years	Urban	Mobile phone, Computer
22	25/out	14	Male	9th Grade	Student	4 years	Urban	Mobile phone

Appendix J

Complete table with categories, codes and expressions resulting from the Qualitative Analysis of RQ2

Category	Code	Question and Participant	Expression(s)
Perceived Advantages of AI in Therapy	Immediate Availability of Tools	Q1: P1, P21 Q2: P1, P3, P9, P14 Q3: P2, P3, P4, P6, P7, P8, P12, P14, P21 Q5: P4, P9, P14, P22	"The main advantage of the chatbot would be its immediate availability." (Q1/P1), "…more immediate help…" (Q2/P9), "…in a moment of distress…" (Q2/P14), "…immediate availability…" (Q2/P3), "…availability that is total…" (Q2/P4), "…having help and answers immediately…" (Q2/P6), "…being immediate…" (Q2/P7) and "…it is available 24/7…" (Q2/P14).
	Utility and Practicality	Q1: P1, P3, P6, P10, P13, P15, P19, P20 Q2: P3, P4, P22 Q3: P5, P6, P11, P20, P22 Q3: P9, P10, P15, P16 Q3: P9, P10, P15 Q3: P13, P19 Q3: P14 Q5: P2, P20, P21 Q7: P1, P3, P5, P8, P9, P10, P11, P12, P13, P16, P17, P18, P19, P20, P21 Q9: P1, P16 Q10: P8 Q11: P2	"not having someone looking at me" (Q3/P6), "…you are eliminating human error" (Q3/P9), "…the fact that it's not a person might make me feel less inhibited" (Q3/P11), "…providing suggestions, tips, and alternative paths" (Q1/P3)", "Sometimes we feel bad, and these tools always give us good advice." (Q2/P22), "providing new perspectives" (Q5/P20) and "a robot, perhaps, to what extent can it not do better?" (Q9/P1).
	Accessibility and Flexibility	Q2: P1, P5, P10, P22 Q3: P2, P3, P5, P6, P19 Q4: P11, P12, P13, P14, P21 Q5: P4, P14 Q10: P9, P10, P13	"…you may live in a very remote area…" (Q2/P5), "…it can be at any time…" (Q3/P2), "…time (...) space, place, and moment" (Q3/P3), "…you don't have to leave home…" (Q3/P5), "…being able to do it anywhere…" (Q3/P6), "…not having to leave home…" (Q5/P4) and "…being at home provides a more favorable environment…" (Q5/P14).
	Reduced Costs	Q2: P2, P11, P22 Q3: P1, P3, P5, P8, P16, P17, P18, P20 Q10: P8, P10, P15	"…more affordable cost…" (Q3/P5), "…monetary factor…" (Q3/P8), "…the cost of accessing consultations could change…" (P16), "…the cost of consultations, I would say, shouldn't be so expensive…" (Q3/P17) and "…I think there are two things that keep people away from therapy: the fact that it is expensive..." (Q10/P8).
Willingness to Try AI Therapy	Willingness to Try AI Therapy	Q2: P1, P2, P6, P8, P11, P16, P20 Q2: P1, P8, P11 Q6: P15, P16, P18, P21	"Even if it was just to try it out." (Q2/P1), "Why not try using a tool that could help, even if it was just to test it." (Q2/P1), "…What harm could it do? Nothing, right?" (Q2/P1)", "…Maybe yes." (Q2/P2), "Maybe I would consider it, despite the reservations I mentioned in the previous question." (P11) and "I might check it out just to understand what they could tell me." (P20).
Barriers to AI in Psychological Therapy	The Absence of Human Connection and Empathy in AI Therapy	Q1: P5, P7, P8, P14, P19 Q2: P2, P4 Q3A: P1, P3, P8, P9, P10, P12, P13, P16, P17, P18, P19 Q3A: P1, P4, P5, P7, P18 Q4: P9, P17, P20	"Very impersonal." (Q1/P7), "It really lacks the human side." (Q1/P8), "There are human nuances that only humans can understand." (Q1/P8), "I will always see that barrier of – this is a virtual thing." (Q1/P14), "The human touch, the touch of a therapist." (Q1/P19), "It's a robot that is trying to help, but it has no feelings." (Q3A/P1), "That empathy... ends up not being real." (Q3A/P10) and "You know there's no one on the other side typing." (Q5AP5).

		Q5A: P2, P5, P16, P19, P22 Q9: P1, P2, P3, P5, P8, P9, P12, P15, P17, P18 Q9: P1, P4, P5, P7, P10, P11, P12, P19, P22	
	Impersonal Communication in AI tools	Q1: P2, P15, P20 Q1: P2, P6, P9, P13 Q9: P6, P13, P14, P15, P19, P20	"It lacks the aspect of non-verbal communication." (Q1/P6), "I don't associate intimacy with machines." (Q1/P15), "They would be too programmed." (Q1/P20), "A disadvantage is the issue of my expressions." (P13) and "There is information that is not said, but is still present." (Q9/P6).
	Lack of Trust and Credibility in AI solutions	Q1: P2, P3, P4, P5, P11, P17 Q2: P2, P9, P13 Q3A: P2, P14 Q3A: P9 Q3A: P3, P11, P14, P17 Q4: P1, P6, P13, P16, P19, P20 Q5A: P3, P7, P11, P16 Q5A: P2, P3, P8, P10, P16, P18, P19 Q7: P2, P4, P5, P6, P7, P11, P14, P15	"I'm not sure to what extent I would give it the same credibility." (Q1/P4), "It might be a bit limited." (Q1/P5), "Because sometimes these programs fail, and mental health is something that should not be taken lightly or risked in that sense." (Q2/P2), "The first people to use this... will not receive the best support." (Q3A/P9) and "It's very much a script, it's not very human, and sometimes it comes out a bit nonsensical, you know." (Q5A/P2).
	Discomfort and Hesitation with AI	Q1: P2, P4, P7, P12, P14, P22 Q2: P2, P5, P10, P12, P13, P14 Q3: P1 Q4: P7, P9, P11, P15, P17	"I find it strange." (Q1/P2), "If I were really desperate, maybe yes." (Q2/P2), "If I really needed it and had no access, I would consider it." (Q2/P5), "I think that between having nothing and having a chatbot, in the end, it will keep getting better." (Q3/P1) and "I still have some resistance to everything being super digital." (P15).
	Human Interaction Preference and Therapy Involvement	Q1: P2, P7, P9, P11, P18, P22 Q2: P7, P9 Q3: P8 Q3A: P5, P7, P9, P10, P13, P15, P18 Q9: P2, P3, P4, P6, P17, P22 Q11: P1, P2, P4, P8 Q11: P1, P3, P4, P6, P7, P9, P13, P16, P20, P22	"For me, the person makes a difference." (Q1/P9), "I would really prefer a little human." (Q3/P8), "A psychotherapist has tools that a machine will never have." (Q3A/P7), "The presence of a person is something else." (Q9/P4), "There will always be someone who might prefer a therapist." (Q11/P1) and "There will continue to be people who will prefer a human therapist." (Q11/P9).
	Data Security, Privacy, and Trust in AI Therapy	Q1: P3 Q3A: P5, P6 Q4: P3, P6, P7 Q5: P1, P2, P5, P8, P9, P12, P15, P16, P19, P21 Q5A: P1, P5, P12, P13, P14 Q5A:P1, P12, P13, P14, P17 Q5A:P8, P17 Q6: P1, P3, P6, P13, P14, P17, P19 Q6: P1, P9, P22 Q6: P4, P11, P14, P17 Q6: P6, P13, P20 Q6A: P1, P2, P11, P17, P19, P20 Q6A: P3, P6, P13, P16, P17, P22 Q6A: P3, P4, P14, P15, P18, P21 Q6A: P5, P6, P12, P18	"How does that system manage the information?" (Q1/P3), "The issue of security." (Q3A/P5), "That it is confidential." (Q4/P7), "Our data is out there." (Q5/P5), "If someone could read or listen to what was being written or said." (Q5A/P5), "Realizing that you lose control of that information afterward." (Q6/P6), "Being as anonymous as possible." (Q6A/P2) and "The privacy of the information they will pass on to... I don't know... a somewhat unknown world." (Q11/P3).

		Q6A: P6, P16, P17 Q6A: P2, P11, P17 Q6A: P2, P5, P15 Q6A: P8, P10, P14 Q11:P3	
	Skepticism and Limitations of AI Therapy	Q2: P2, P5 Q2: P2 Q5A: P4, P7, P8, P11, P17 Q6: P10, P13, P20 Q6: P3, P5, P11, P12, P19 Q9: P7 Q10: P11, P14, P20	"In the long run, that wouldn't do me much good because I would be connecting with something that doesn't exist." (Q2/P2), "Well, but it doesn't really know what it's saying." (Q5A/P4), "Distrust because it's not a traditional method." (Q5A/P7), "To what extent could they use your story to blackmail you?" (Q6/P3), "In a longer-term process, they wouldn't work." (Q9/P7) and "I think it's going to grow, but I don't think it will ever be as big, perhaps, as the traditional model." (Q10/P11).
	Risks of Dependency and Isolation in AI Therapy	Q3: P2 Q3A: P2 Q3A: P5, P16, P22 Q5A: P5, P12	"I don't know if it's a bad thing to create dependence." (Q3/P2), "It could create an even greater dependence." (Q3A/P2), "You end up having less and less interaction with other people." (Q3A/P5) and "It might lead someone to somewhat detach from reality." (Q5A/P5).
Therapists' Use of AI: Acceptance, Concerns, and Ethical Considerations	Use of AI by Therapists	Q3: P14 Q7A: P1, P12 Q7A: P1 Q8: P1, P5, P6, P8, P10, P11, P16, P22 Q8: P4, P13, P15, P20 Q8: P1, P5, P6, P8, P10, P11, P16, P22 Q10: P1 Q11: P8, P11, P14	"It can be a good tool for psychotherapists." (Q3/P14), "The therapist themselves can analyze what was said by the person and the bot." (Q7A/P1), "But if that's the case, what am I doing here?" (Q8/P1), "I would feel like a guinea pig." (Q8/P3), "It would make me feel very, very uncomfortable." (Q8/P7), "It can also suggest other approaches, and even the therapist might think -this makes sense, I'll propose this approach to the client or patient as well." (Q10/P1) and "The way they work is going to change." (Q11/P14).
	Concerns and Challenges for Professionals	Q7: P1, P11	"The problem might be more for the therapist." (Q7/P1), "Oh, you told me to do it this way, but I spoke with ChatGPT, and it told me to do it differently." (Q7/P1) and "It really scares me what artificial intelligence might take away in terms of jobs." (Q7/P11).
	Willingness to Share Chatbot Interactions with Therapist	Q7A: P3, P5, P8, P10, P11, P12, P13, P16, P17, P20 Q7A: P1, P9, P18, P21	"It would make perfect sense." (Q7A/3), "Without a doubt, because I think it would make perfect sense." (Q7A/P5), "Trying to understand what led me to bring up a certain topic with the chatbot." (Q7A/P10), "I think it's a very interesting idea." (Q7A/P12), "It would depend on the topic." (Q7A/P1), "Maybe not for all of them, but yes." (Q7A/P18).
	Discomfort About the Therapist's Use of AI to Analyze Personal Cases	Q8: P1, P3, P7, P8, P11, P12, P13, P14, P17, P18, P19	"But if that's the case, what am I doing here?" (Q8/P1), "I would feel like a guinea pig." (Q8/P3), "It would make me feel very, very uncomfortable." (Q8/P7), "It seems that some of the advantages of the human aspect are somewhat lost." (Q8/P8), "That would create a lot of distrust for me." (Q8/P11), "Once again, it makes me feel uncomfortable." (Q8/P12), "If that's the case, I can do it at home, I don't need to see a therapist." (Q8/P14).
User Needs and Expectations for AI Therapy	Privacy and Emotional Safety in AI Therapy	Q2: P12 Q2: P6 Q3: P1, P6, P11, P12, P15, P17, P18 Q4: P3, P4 Q6A: P3, P5, P10, P21 Q6A: P5, P7, P14, P18	"If there is an application of this kind that is officially recognized for mental health and properly validated." (Q2/P6), "You might be able to communicate more freely, without a filter." (Q3/P6), "It should foster a field of trust." (Q4/P3), "That it was built for this purpose, to have a human-centered approach." And (Q6A/P10).
	Desirable Features for Enhancing AI Therapy	Q4: P1, P5, P19 Q4: P1, P15, P18 Q4: P3, P4, P14, P18, P22 Q4: P4, P5, P10, P19	"At least have a history." (Q4/P1), "To resemble a human as much as possible, in the end." (Q4/P4), "To have a voice." (Q4/P4), "Being able to understand irony and sarcasm." (Q4/P8), "The way it expresses itself should be similar to mine." (Q5/P6).

		Q4: P8, P10, P14, P16 Q4: P10, P21 Q4: P6, P7 Q4: P1, P2 Q5: P3, P4, P5, P18 Q5: P3, P6, P10, P11, P16 Q5: P7, P17 Q5: P13 Q5: P5, P6, P19 Q5: P5, P18, P20 Q6: P3, P9, P13	
Perceptions of the Growing Trend of AI in Therapy	The Evolving Role and Potential of AI in Therapy	Q2: P5 Q10: P1, P2, P12, P5, P6, P7, P16, P18, P19, P21, P22 Q10: P2, P4, P6	"I think it will keep growing, yes." (Q10/P12), "I think society is very digital, and the adoption of these things is inevitable. Even if some people may not like it, the masses will..." (Q10/P5), "I think so, it will be a growing trend because lack of time and availability is a constant in people's daily lives." (Q10/P7), "I think it's very positive." (Q10/P16) and "I think so. It's like fast food. I think it's something quick and effective, right?" (Q10/P21).
	Concerns about future AI growth	Q1: P2 Q11: P5, P10, P12, P13, P15, P17, P18, P19, P21	"The lack of empathy is increasingly happening because of technology." (Q1/P2), "You'll spend your whole life talking to a computer because it tells you exactly what you want to hear." (Q1/P2), "I hope not, but... I think so." (Q11/P10), "Losing that humanity on the other side makes me feel very sorry and very sad." (Q10/P17), "Unfortunately, everything is heading towards being replaced by machines." (Q10/P18).

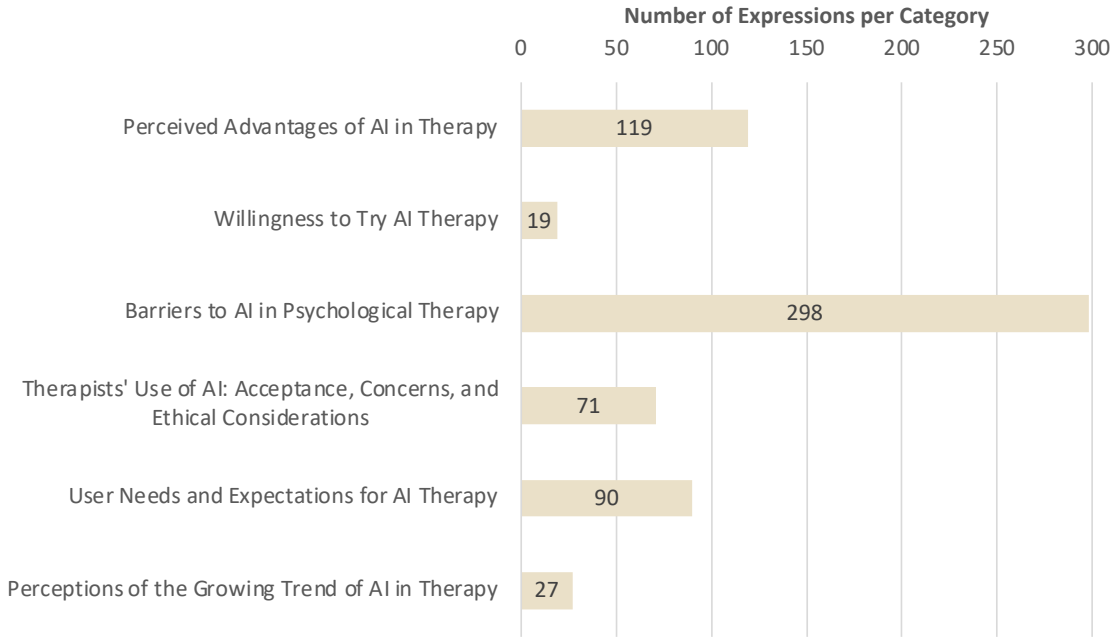
Appendix K

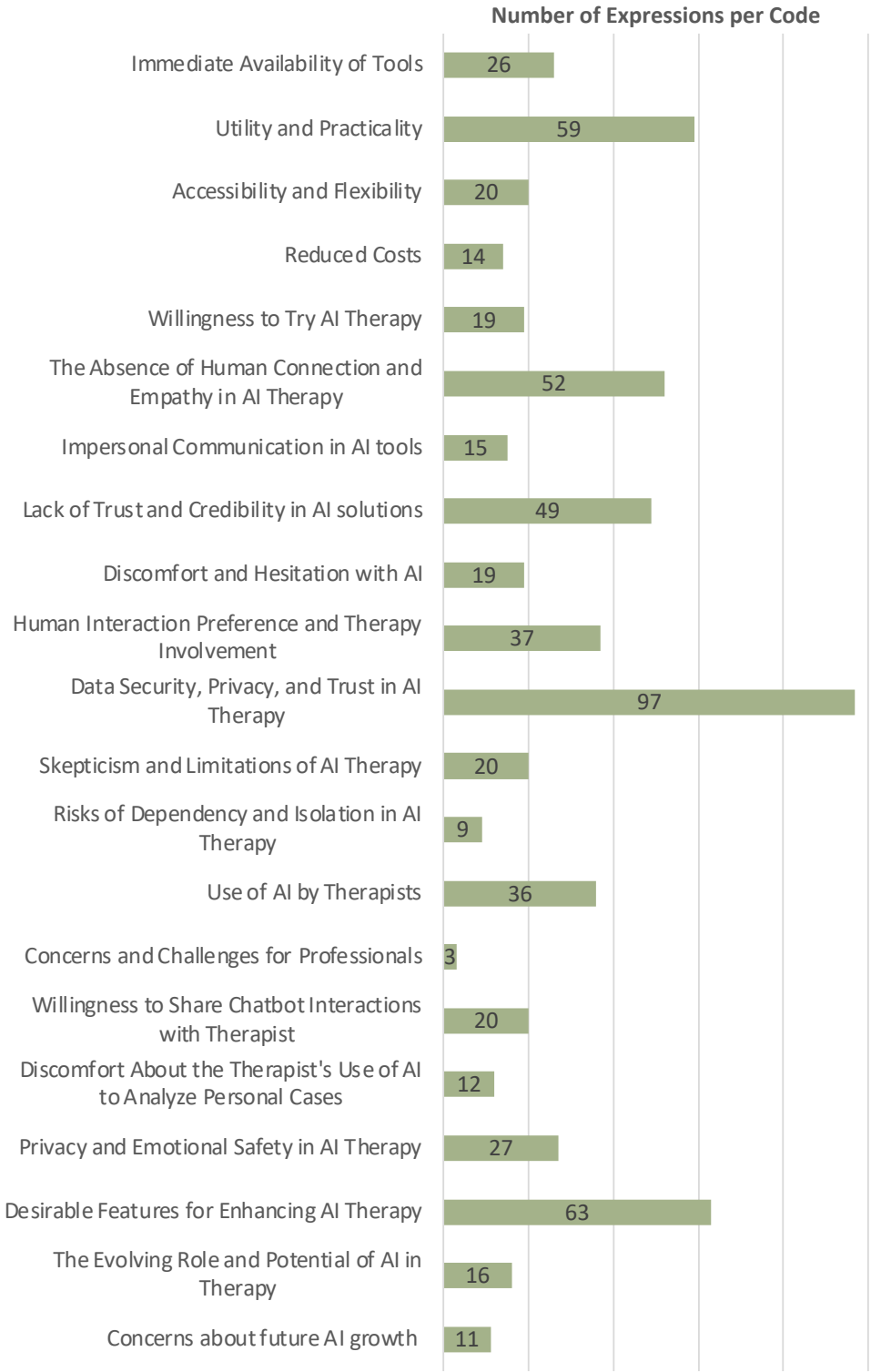
Complete table with the saturation evidence of RQ2

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22
Q1	100%	71%	13%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q2	100%	71%	22%	0%	10%	9%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q3	100%	50%	0%	0%	14%	0%	0%	13%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%
Q3A	100%	67%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q4	100%	0%	50%	0%	0%	0%	20%	0%	17%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q5	100%	50%	33%	40 %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q5A	100%	50%	0%	33 %	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q6	100%	0%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%
Q6A	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q7	100%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q7A	100%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q8	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q9	100%	33%	0%	0%	0%	25%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q10	100%	0%	0%	0%	0%	0%	0%	50%	20%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q11	100%	50%	33%	0%	25%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Saturation Point	**93%**	**31,67%**	**24,53 %**	**4,87%**	**8,33 %**	**2,27 %**	**3,20 %**	**5,53 %**	**2,47 %**	**0%**	**2,07 %**	**0%**	**0%**	**0,73 %**	**1,67 %**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

Appendix L

Total number of expressions per categories and per codes for RQ2




Number of Expressions per Code
Immediate Availability of Tools
26
Utility and Practicality
59
Accessibility and Flexibility
20
Reduced Costs
14
Willingness to Try AI Therapy
19
The Absence of Human Connection and Empathy in AI Therapy
52
Impersonal Communication in AI tools
15
Lack of Trust and Credibility in AI solutions
49
Discomfort and Hesitation with AI
19
Human Interaction Preference and Therapy Involvement
37
Data Security, Privacy, and Trust in AI Therapy
97
Skepticism and Limitations of AI Therapy
20
Risks of Dependency and Isolation in AI Therapy
9
Use of AI by Therapists
36
Concerns and Challenges for Professionals
3
Willingness to Share Chatbot Interactions with Therapist
20
Discomfort About the Therapist's Use of AI to Analyze Personal Cases
12
Privacy and Emotional Safety in AI Therapy
27
Desirable Features for Enhancing AI Therapy
63
The Evolving Role and Potential of AI in Therapy
16
Concerns about future AI growth
11

Appendix M

Complete table with sociodemographic data from RQ3 participants

Participant	Interview Date	Age	Gender	Education Level	Profession or Occupation	Lives in Area	Technologies Used
1	23/set	22	Male	Bachelor's Degree	Sound technician/producer/musician	Urban	Mobile phone, computer, sound equipment, headphones
2	24/set	41	Female	Bachelor's Degree	Manager	Urban	Mobile phone, computer
3	24/set	55	Male	High School	Banking	Urban	Mobile phone, computer
4	24/set	35	Female	Bachelor's Degree	Civil engineer	Rural	Mobile phone, computer TV
5	24/set	28	Female	Master's Degree	Programmer	Urban	Mobile phone, computer, Kindle, Mi Fit band
6	27/set	28	Female	Master's Degree	Business product analyst	Urban	Mobile phone, computer, television, Fitbit
7	27/set	21	Male	Bachelor's Degree	Medical student	Urban	Mobile phone, computer, iPad
8	29/set	24	Male	Bachelor's Degree	Film Director	Urban	Mobile phone, computer
9	30/set	33	Female	Master's Degree	Doctor	Urban	Mobile phone, computer, iPad
10	01/out	52	Male	Executive MBA	Telecommunications engineering director	Urban	Mobile phone, computer, tablet, TV, radio
11	04/out	41	Male	PhD	Computer engineer	Urban	Mobile phone, computer
12	04/out	50	Male	Bachelor's Degree	CEO	Urban	Mobile phone, computer
13	04/out	29	Género: Não binário	Master's Degree	Project manager	Urban	Mobile phone, computer
14	04/out	29	Female	High School	Vending machine restocker	Urban	Mobile phone, computer
15	08/out	34	Female	Bachelor's Degree	Data analyst	Urban	Mobile phone, computer
16	09/out	52	Male	Bachelor's Degree	Data architect/modeler	Urban	Mobile phone, computer
17	11/out	33	Female	Master's Degree	Doctor	Urban	Mobile phone, computer, tablet
18	11/out	32	Female	Master's Degree and MBA	IT business lead	Urban	Mobile phone, computer, Kindle, iPad, Apple Watch
19	12/out	32	Female	Master's Degree and MBA	Doctor	Urban	Mobile phone, computer, smartband, TV, Kobo, treadmill, electric car
20	12/out	50	Male	High School	Designer + remote pilot + BIM specialist + innovator	Urban	Advanced modeling software, drones, 3D printer, AI assistants, virtual and augmented reality, etc.
21	13/out	16	Male	High School	Student	Urban	Mobile phone, computer
22	14/out	58	Female	Pós-Graduação	Teacher	Urban	Mobile phone, computer

Appendix N

Complete table with categories, codes and expressions resulting from the Qualitative Analysis of RQ3

Category	Code	Question and Participant	Expression(s)
Awareness and Knowledge of AI Tools in Mental Health	Lack of Awareness	Q1: P3, P8, P10, P11, P12, P16, P19, P21 Q1: P4, P9, P17, P16, P18	"Personally, no, I wasn't aware that this already existed." (Q1/P3) and "No, no. It had never even crossed my mind that this could be possible." (Q1/P16).
	Generic Knowledge without Exploration	Q1: P1, P2, P4, P7, P13, P14, P15, P18, P20, P22	"I already knew it existed, but I've never read about it, I'm completely uninformed." (Q1/P1), "Very generally. Just casual talk... I've never explored it." (Q1/P2) and "I think there's already an app, I've seen something about an app for that." (Q1/P14).
Perceptions and Willingness to Use AI in Therapy	Skepticism About AI's Ability to Replace Human Empathy	Q1: P9, P18 Q2: P4, P16, P17, P18.	"It will never replace a human or... the empathy you can have... feeling empathy." (Q1/P9), "I have some bias against technology being applied to this field." (Q2/P16) and "I would approach it with some resistance, thinking that I would prefer to have an in-person experience first." (Q2/P18).
	Curiosity and Willingness to Try New Experiences	Q2: P8, P18, P21 Q2: P3, P6, P7, P9, P11, P12, P13, P18, P20, P21, P22.	"Just to simply understand what... how the process would be." (Q2/P8), "I'm curious, and I would want to see it, yes." (Q2/P18), "Yes, I'm open to trying it out." (Q2/P3), "Maybe I would look for a more artificial form of help." (Q2/P6) and "Yes, I would be open to it." (Q2/P11).
	Generational Preferences for AI	Q8: P3, P14, P15 Q9: P1, P9 Q12: P1, P7, P15 Q12: P15	"New generations prefer fast, click-based solutions." (Q8/P3), "Younger people lean toward tech-based support." (Q8/P14), "People are mentally exhausted and need daily mental coaching." (Q8/P15), "... my parents' generation... I can't see anyone... thinking 'I'll ask ChatGPT.'" (Q9/P1), "It depends on the age groups are in..." (Q9/P9) and "New generations are increasingly using these tools." (Q12/P7).
	General Comfort with Security	Q7: P2, P7, P10, P13, P14, P15, P19, P20.	"I think I would feel very at ease." (Q7/P2), "Yes, yes, if I had confidence in the tool." (Q7/P13) and "With the evolution of technology, yes." (Q7/P20).
Convenience Offered by AI Solutions	Accessibility and Immediate Availability	Q2: P1, P2, P5, P15, P22 Q3: P7, P22 Q3: P5, P15, P21 Q4: P2, P5, P9, P12, P18, P19, P22 Q5: P1, P4, P18 Q6: P2, P9, P15 Q6: P2, P4, P9, P15, P20. Q10: P4, P17, P19	"The response is more immediate." (Q2/P15), "If it's something that is easily accessible." (Q3/P7), "It is available regardless of the moment or situation I am in." (Q4/P2) and "It's what we have right at hand; it's easy to consult." (Q5/P4).
	Flexibility in Communication	Q2: P2 Q3: P1, P13, P19 Q9: P2, P22.	"You can't write the way people speak." (Q3/P1), "The speech should be as human as possible." (Q3/P13) and "It was really about trying... to create empathy." (Q3/P19).
	Expanding Access to Therapy	Q8: P6, P13, P14, P18 Q8: P2, P5, P11, P21 Q12: P9, P12	"Today I live abroad... I could speak my own language... and have access to AI anytime." (Q8/P6), "People in remote areas..." (Q8/P13), "People in more remote areas... AI would be available at any time." (Q8/P14) and "The reach it has." (Q12/P12).

	Affordable and Accessible	Q8: P11, P13, P14 Q12: P6	"A minimum-wage person... spending 100 euros on therapy? Forget it." (Q8/P13), "It could be... affordable..." (Q8/P14), "Costs decrease once the system scales." (Q8/P11) and "The costs are lower, which is probably one of the opportunities as well." (Q12/P6).
Resistance to AI in Psychological Support	Concerns About AI's Limitations	Q1: P5, P6 Q3: P3, P7, P15, P17 Q3: P2, P12, P17 Q3: P6, P12, P14 Q4: P11 Q4: P7, P13 Q6A: P1, P8, P9, P10, P16, P22. Q6A: P1, P16, P22 Q7: P5, P8 Q8: P4, P22 Q9: P6, P8, P22 Q11: P11 Q11: P6, P8 Q11: P3, P11, P16, P18 Q13: P3, P6, P9	"I feel like it doesn't think... it doesn't satisfy my doubt." (Q3/P3), "I feel that inter-person variability is somewhat nullified." (Q4/P7) and "A robot will never treat my problem as an individuality." (Q6A/P1).
	Barriers to Usage and Technical Frustrations	Q6A: P7, P18 Q6A: P7 Q9: P11, P16 Q9: P13, P19	"If it were in a testing phase, I would use it more cautiously." (Q6A/P18) and "The algorithm could fail completely and send you in a completely counterproductive direction." (Q9/P11).
Building Trust and Credibility in AI Tools	Trust, Security, and Ethical Responsibility	Q4: P11, P15 Q6: P7, P16, P22 Q6: P1, P5, P13, P21 Q6: P1, P10, P12, P13, P14. Q6: P11, P12 Q6A: P1, P3, P4, P18, P21 Q6A: P5, P13 Q6A: P12, P19 Q7: P1, P2, P9, P11, P18, P22. Q7: P1, P6, P8, P16, P21. Q7: P3, P4, P5, P16 Q7A: P2, P4, P12 Q7A: P1, P3, P6, P7, P8, P9, P19, P22. Q7A: P13 Q7A: P13 Q7A: P16, P17 Q7A: P2 Q7A: P2, P14. Q8: P5, P10, P17 Q9: P6, P13.	"What guarantees do I have that confidentiality... is truly ensured?" (Q4/P11), "The fact of knowing that the information is not stored, highly confidential." (Q6/P1) and "Ensuring confidentiality is important." (Q6/P12).

		Q9: P18, P19 Q12: P16, P18 Q12: P6, P13	
	Validation, Testing, and Human Supervision	Q3:P2, P7, P16, P20 Q3: P2, P10, P11, P18, P20 Q3: P9, P18. Q6A: P2, P15, P20 Q7A: P3, P20	"It would have to go through a series of tests... 'it passed this one, passed that one – I trust it." (Q2/P7), "The model should be validated by people who have the knowledge to properly assess it." (Q2/P20) and "It should be coordinated by an expert in the field." (Q3/P9).
	Takes Time to Build Trust and Grow	Q12: P2, P8, P16 Q12: P13	"It will be a growing trend, but I don't think it will happen in the short term." (Q12/P2), "It will be a long process." (Q12/P8) and "I see an increasing use of technology followed by stabilization." (Q12/P16).
Personalized Support in AI	Individualized Needs and Preferences	Q4: P1, P13, P19 Q4: P12, P20, P21, P22. Q5: P6, P8 Q6: P1, P5, P20 Q8: P4, P14, P19 Q9: P10, P17	"For those who think about the issue of stigma... and the embarrassment of 'oh, now I have to go talk to someone." (Q4/P12), "For people who are more shy or who don't want to expose themselves to another human being." (Q4/P20) and "Each person has their own problems, and each of us sees things... it may be very simple, but it's your entire world." (Q5/P6).
	Personalized Exploration	Q6: P8, P19 Q6: P3, P8, P19. Q6: P8, P19 Q7A: P15 Q8: P6, P12 Q9: P3, P8, P12 Q11: P11, P18	"Feeling that the bot is addressing my specific situation." (Q6/P8), "Validation of my emotions and exploration of my feelings." (Q6/P19), "That the chatbot would interact again the next day, asking about improvements." (Q7A/P15) and "AI adapts better to different methods than a single person." (Q8/P6).
How People Think AI Can Be Used	Operational Support for Therapists	Q8: P11, P16. Q10: P2, P6 Q10: P5, P18	"AI could summarize sessions... suggest things therapists might miss." (Q8/P16), "Knowledge grows faster through shared user data." (Q8/P11) and "The complete replacement of the entire administrative part also works extremely well in the beginning." (Q10/P2).
	AI Complementing Therapists	Q12: P4, P6, P11 Q13: P5, P6, P9, P19, P20	"It can complement where we, as humans, fall short." (Q12/P4) and "Helping therapists make better diagnoses." (Q12/P6).
	Future Potential and Integration	Q10: P2, P18 Q10: P7, P12 Q11: P9, P12 Q13: P7, P10, P12, P18	"It can really be beneficial for both sides... the end-user and the professional." (Q10/P18) and "Maybe one day it will get there." (Q11/P9).
Why People Prefer Humans Over AI	Human Connection, Empathy and Physical Presence	Q2: P1, P6, P10, P14, P19 Q4: P6, P8, P11, P17 Q5: P1, P11, P18 Q5: P8, P14 Q6: P16 Q9: P1, P5, P7, P14 Q10: P7, P14 Q10: P13 Q11: P1, P18, P20 Q11: P10, P21, P22 Q11: P4, P7, P18 Q11: P5, P10 Q11: P6, P16, P18	"I think a person makes a difference. I think human contact makes a difference." (Q2/P1), "The way we think, the way we act, is a very human thing." (Q4/P6), "I feel comfortable knowing there is a human option available if needed." (Q6/P16), "I think that, personally, for some people, it is very important to feel... to be close." (Q9/P5), "I prefer to have contact with people." (Q13/P1) and "A person will enjoy having personal contact." (Q13/P7).

		Q11: P6, P9, P14, P18 Q11: P1, P9, P16, P19 Q13: P1, P4, P7, P9, P17, P19	
AI Utility in Immediate and Emergency Situations	Crisis Management Support and Quick Relief for Stress or Anxiety	Q5: P1, P3, P5, P7, P10, P13, P17, P18, P19, P20, P21 Q7A: P12 Q8: P1, P14, P17, P19	"To address immediate anxieties in the moment… can be really useful." (Q5/P1), "Suicide hotlines... better than nothing." (Q8/P1) and "Helpful in acute crises... for awareness and guidance." (Q8/P19).
Challenges and Limitations of AI in Psychological Support	AI Therapy: Strengths and Limitations	Q4: P11, P12, P16, P18, P19 Q5: P12, P15, P22 Q5: P1, P10, P22 Q5: P2, P9, P16 Q7: P12, P22 Q8: P2, P7, P17, P18 Q9: P8, P17 Q10: P1, P6, P9, P22 Q10: P2, P9, P10 Q12: P8, P16	"It's interesting to use the system to give me some clues and ideas." (Q4/P11), "It could serve as a temporary psychologist for that moment." (Q4/P18), "To solve deeper issues like trauma, I think it's more difficult..." (Q5/P11) and "Helping to reflect on various positions and options." (Q7/P22).
Impact of AI on the Therapeutic Profession	Reduced Demand for Therapists	Q13: P6, P12, P16	"It can reduce the number of people needed for certain tasks." (Q13/P6), "We run the risk of no longer having therapists." (Q13/P16) and "There may be a significant change in the role." (Q13/P12).

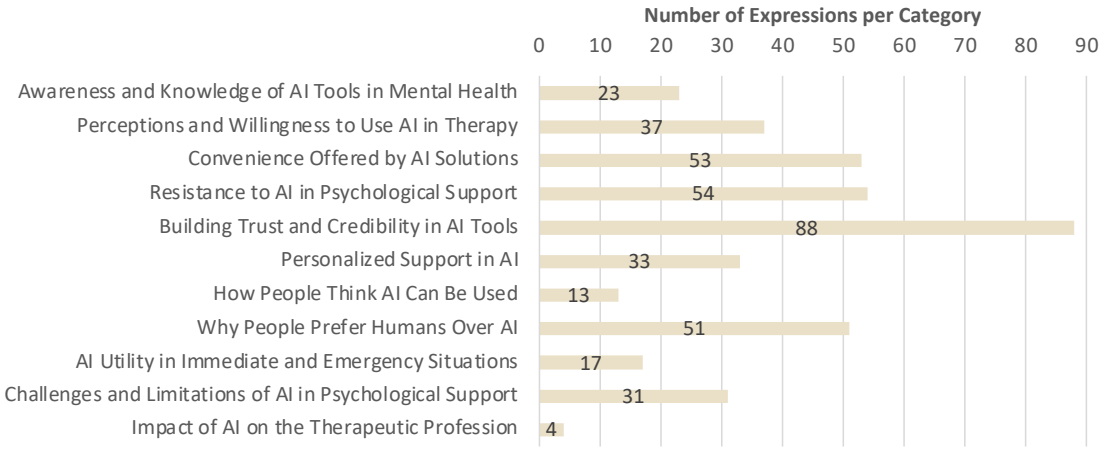
Appendix O

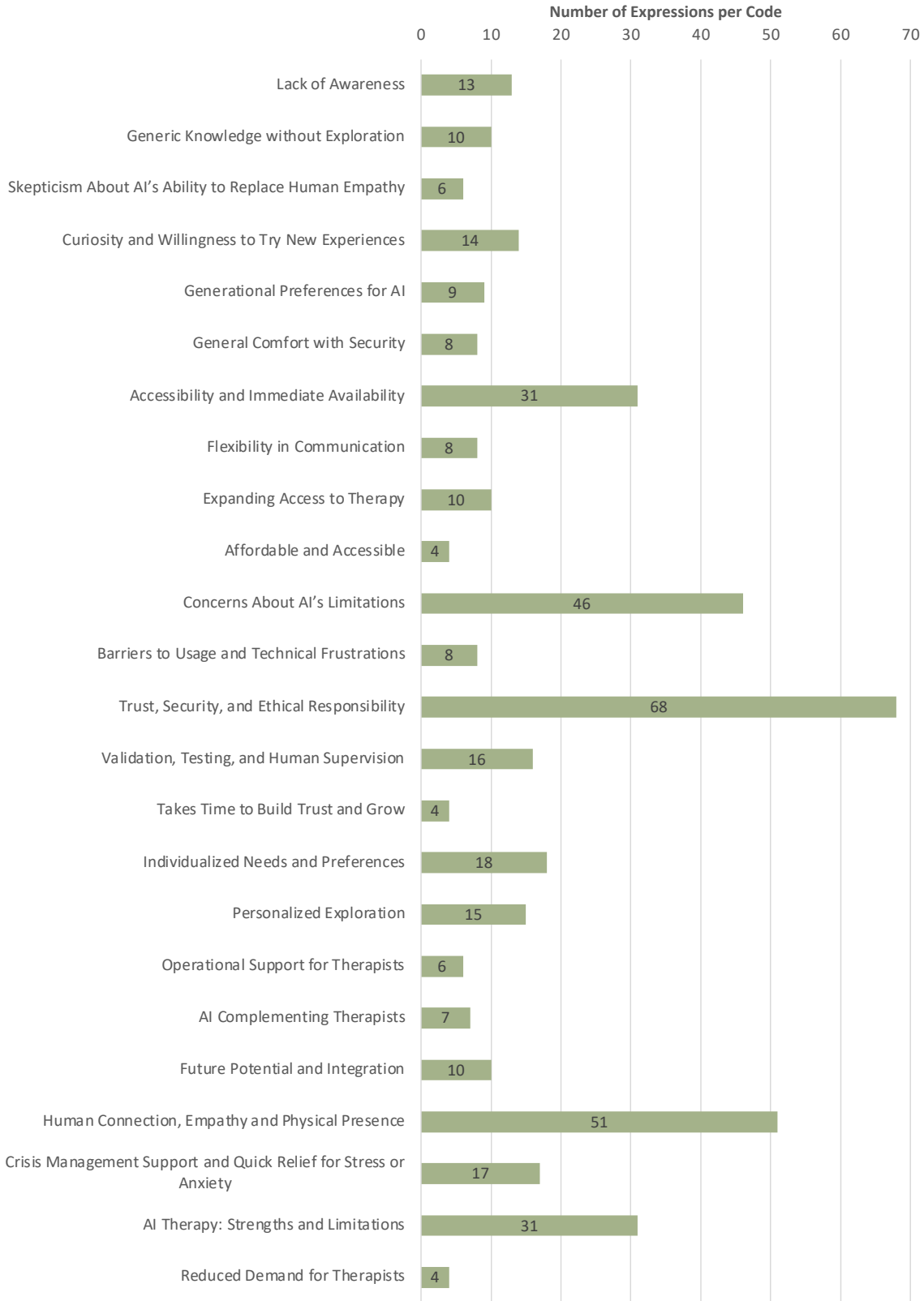
Complete table with the saturation evidence of RQ3

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22
Q1	100%	0%	50%	0%	33%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q2	100%	33%	25%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q3	100%	67%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q4	100%	50%	0%	0%	0%	33%	25%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q5	100%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q6	100%	33%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Q6A	100%	50%	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q7	100%	50%	0%	0%	33%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q7A	100%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%
Q8	100%	67%	25%	33%	14%	13%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q9	100%	33%	25%	0%	0%	33%	0%	14%	0%	13%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q10	100%	67%	0%	25%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q11	100%	0%	50%	0%	0%	0%	0%	0%	33%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q12	100%	50%	0%	33%	0%	40%	0%	17%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q13	0%	0%	0%	0%	100%	50%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Saturation Point	**93,3%**	**33,3%**	**16,7%**	**7,4%**	**13,7%**	**12,6%**	**7,4%**	**2,1%**	**4,8%**	**0,9%**	**5,9%**	**3,9%**	**0%**	**0%**	**1,7%**	**1,3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

Appendix P

Total number of expressions per categories and per codes for RQ3




Number of Expressions per Code
0
10
20
30
40
50
60
70
Lack of Awareness
13
Generic Knowledge without Exploration
10
Skepticism About AI's Ability to Replace Human Empathy
6
Curiosity and Willingness to Try New Experiences
14
Generational Preferences for AI
9
General Comfort with Security
8
Accessibility and Immediate Availability
31
Flexibility in Communication
8
Expanding Access to Therapy
10
Affordable and Accessible
4
Concerns About AI's Limitations
46
Barriers to Usage and Technical Frustrations
8
Trust, Security, and Ethical Responsibility
68
Validation, Testing, and Human Supervision
16
Takes Time to Build Trust and Grow
4
Individualized Needs and Preferences
18
Personalized Exploration
15
Operational Support for Therapists
6
AI Complementing Therapists
7
Future Potential and Integration
10
Human Connection, Empathy and Physical Presence
51
Crisis Management Support and Quick Relief for Stress or Anxiety
17
AI Therapy: Strengths and Limitations
31
Reduced Demand for Therapists
4

Appendix Q

Complete table with sociodemographic data from RQ4 participants

Participant	Interview Date	Age	Gender	Education Level	Profession or Occupation	Lives in Area	Technologies Used
1	09/out	28	Female	Master's Degree	Psychologist and Psychotherapist in training	Urban	Mobile Phone, Computer, Tablet
2	09/out	33	Male	Master's Degree	Psychologist	Urban	Computer and Mobile Phone
3	09/out	29	Female	Master's Degree	Psychologist and Psychotherapist in training	Urban	Computer and Mobile Phone
4	09/out	28	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Tablet, Computer, Video Conferencing Apps
5	09/out	28	Female	Master's Degree	Psychologist and Psychotherapist in training	Urban	Computer and Mobile Phone
6	09/out	25	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, Instagram, Zoom, WhatsApp
7	11/out	48	Male	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, Tablet
8	11/out	26	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Computer
9	12/out	33	Male	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, TV, Video Game Consoles
10	14/out	38	Male	Master's Degree	Psychologist	Rural	Mobile Phone and Computer
11	14/out	26	Female	Master's Degree	Psychologist	Rural	Mobile Phone and Computer
12	14/out	29	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, TV
13	15/out	35	Female	Master's Degree	Psychologist and Psychotherapist	Urban	Mobile Phone and Computer
14	15/out	28	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, TV, Kobo
15	15/out	28	Female	Master's Degree	Psychologist	Urban	Mobile Phone, Computer, TV, Kobo
16	17/out	29	Female	Master's Degree	Psychologist	Urban	Mobile Phone and Computer
17	18/out	29	Female	Master's Degree	Psychologist and Psychotherapist in training	Urban	Mobile Phone, Computer, TV, Appliances
18	19/out	41	Male	Master's Degree	Psychologist and Psychotherapist	Urban	Mobile Phone, Computer, Smart TV
19	22/out	34	Female	Master's Degree	Psychologist and Psychotherapist in training	Urban	Mobile Phone, Computer, TV
20	25/out	32	Female	Master's Degree	Psychologist	Rural	Mobile Phone and Computer

Appendix R

Complete table with categories, codes and expressions resulting from the Qualitative Analysis of RQ4

Category	Code	Question and Participant	Expression(s)
Awareness and General Knowledge of AI Tools in Mental Health	Awareness of AI Tools in Mental Health	Q1: P1, P2, P3, P8, P12, P18	"Vaguely. I had the idea that these things existed, which you explained are called chatbots..." (Q1/P1), "I've surely read about it..." (Q1/P2) and "I had heard about it before, but... very superficially." (Q1/P8).
	Knowledge of AI Applications in Mental Health	Q1: P5, P10, P16, P17, P19	"I've heard about it, I knew that... I mean, I know that some applications exist..." (Q1/P5), "Applied, I think so, I believe there are already some applications with that purpose." (Q1/P16) and "Yes, I had heard about applications; I don't know the names, but I've heard about projects..." (Q1/P17).
	Lack of Knowledge of AI Tools in Mental Health	Q1: P4, P5, P6, P9, P11	"I had no idea." (Q1/P6), "No, not yet." (Q1/P11), "I've never looked into it, I don't know how they work, I've never searched for anything." (Q1/P5) and "I've never really explored anything in detail." (Q1/P9).
	Training and Awareness of AI in Therapeutic Practice	Q5: P1, P2, P3, P4, P7, P8, P14 Q5: P1, P3, P4, P14, P16	"I still don't know much about this." (Q5/P1), "I don't even know what tools are available, if any." (Q5/P2), "There still isn't enough knowledge for people to use them." (Q5/P3) and "We also don't have a clear understanding of what they are and how they work." (Q5/P14).
Applications and Benefits of AI in Psychological Therapy	Mental Health Tools and Innovations	Q1: P7, P13, P14, P20 Q1: P2 Q7: P4, P10, P13, P18, P20	"I had already heard about it from the Order of Psychologists. (Q1/P20), "We had a platform where we could create avatars... specifically for psychological support." (Q1/P13), "Creating a record and the entire clinical history of the patient." (Q7/P4), "As a tool to reach those who are not physically present." (Q7/P14) and "It allows us to be in multiple countries." (Q7/P20)
	AI in for Patients: Complementarity and Specific Use Cases	Q1A: P5, P7, P9, P12, P15 Q1A: P5, P14, P17, P19 Q2: P7, P8, P18 Q3: P3, P10, P12, P13, P17, P18 Q3: P3, P5, P12, P15, P17, P19 Q3: P1, P5, P11, P13 Q3: P1, P12, P15, P19 Q4: P3, P10 Q4: P8, P10, P11, P13, P18, P19 Q4A: P1, P3, P5, P8, P9, P11, P18 Q4A: P10, P19, P20 Q4A: P5, P12, P15, P18 Q5A: P3, P13, P17 Q7: P9, P10, P12, P14 Q8: P10, P12, P13, P15 Q9: P8, P14 Q10: P5, P12, P17 Q10: P7, P13, P17 Q10: P1, P13, P20	"…I believe it can be useful in containing and momentarily addressing what is happening in the moment." (Q1A/P5)", "A starting point to eventually improve connection with another human being." (Q2/P18), "Our tolerance for frustration also develops this way." (Q3/P1) and "Psycho-pedagogical support." (Q5A/P3).
	Accessibility	Q1A: P1, P3, P12, P13, P19, P20 Q3: P1, P8, P9, P16, P18, P19 Q4A: P13, P17, P20	"…very useful for people who may not have the accessibility… to undergo psychotherapy or to receive any kind of mental health support." (Q1A/P1), "A tool that I can use, that is at my disposal, and perhaps available 24 hours a day." (Q1A/P3) and "100% availability and immediacy." (Q3/P1).

		Q5A: P5 Q7: P4, P10, P14, P18, P20 Q8: P5, P6, P7, P8, P16 Q10: P8, P16, P20	
Ethical Considerations and General Concerns	Ethical Concerns and Implications	Q1: P4, P7, P17, P20 Q1A: P1, P14, P15, P16, P18 Q3: P7, P16, P18, P20 Q4: P4, P5, P15, P16 Q4A:P14, P16, P20 Q4B: P11, P17 Q4C: P16, P20, P18, P14 Q4C: P3, P16, P14 Q4C: P3, P17, P12, P11 Q5: P4, P14, P17 Q5A: P1, P20 Q6: P1, P7, P14, P17, P19 Q6: P1, P5, P6, P11, P18, P19 Q7: P16, P15, P18 Q9: P15, P19	"It's a company... understanding, okay, the impact that technology has on cognitions..." (Q1/P7), "It's dangerous because if we stay only on the obvious of what is said – maybe it's my more psychoanalytic background – but I think we work with everything that isn't said." (Q1A/P14), "The problem with AI now is a lot of the regulation." (Q3/P7) and "This all comes down to ethics." (Q4/P4).
	Concerns About AI's Capabilities and Potential Risks	Q2: P20, P8, P6, P18, P2 Q2: P12, P14, P13 Q3: P1, P4, P6, P10, P18 Q4: P1, P2, P8, P15, P16, P17, P20 Q4: P4, P5, P12, P15, P16, P17, P20 Q4A: P2, P15, P17 Q4A: P1, P6, P7 Q4B: P2, P10, P14 Q4B: P15, P16 Q4B: P1 Q4B: P2, P10, P14 Q4B: P7, P19 Q4B: P11, P18 Q4B: P8, P16 Q5: P1, P8, P20 Q5: P3, P12, P13 Q5A: P15, P18 Q5A: P17 Q7: P9, P17 Q9: P6, P12 Q9: P14, P20	"I'm not sure if this wouldn't also create dependency." (Q2/P8), "I think it's a bit scary and perhaps somewhat threatening to the profession itself." (Q4/P5), "Removing the subjective and personal component that is inherent to relationships." (Q4B/P15) and "They invent information." (Q5A/P17).
	Negative Impact of AI Data Access from Patients by Therapist	Q4C: P4, P5, P20 Q4C: P5, P20, P4	"It biases things, it's as if I already approach it with a certain idea." (Q4C/P5), "Everything I know about that person is what they tell me." (Q4C/P1) and "I want the person to tell me so I can process that information." (Q4C/P17).

		Q4C: P1, P8, P12 Q4C: P1, P16, P17, P18	
	Using AI to analyse data from recorded sessions	Q6: P3, P5, P6, P10, P18, P20	"It loses the relational aspect." (Q6/P3), "I think that would make the relationship much more difficult." (Q6/P5) and "It's about creating an experience, not documenting it." (Q6/P18).
AI vs. Human	AI and Human Bonding	Q2: P1, P2, P3, P5, P6, P17, P19 Q2: P1, P2, P3, P15, P16, P17, P18, P20 Q4B: P5, P14, P11, P16 Q7: P1, P3, P4, P6, P11, P12 Q8: P6, P7, P9, P10, P16 Q10: P1, P11, P19 Q11: P4, P5, P7, P12, P16, P18	"A real bond is not the same as an artificial bond." (Q2/P1), "If someone feels understood, they might eventually create that bond, even knowing it's not a person but a machine." (Q2/P15), "It doesn't provide care or support." (Q4B/P5) and "What leads to the success of therapy is the relationship." (Q7/P6).
	Lack of Emotional Depth and Authenticity in AI	Q2: P10, P14, P19 Q1A: P2, P3, P6, P10, P11, P13, P16, P20 Q2: P6, P20 Q3: P5, P6, P10, P14, P20 Q4A: P5, P13, P14, P16 Q4B: P4, P5, P13, P20 Q4C: P1, P17, P20 Q6: P3, P4, P6, P10, P17, P20 Q10: P5, P14, P19	"There is no exchange when there isn't another person who lives and experiences." (Q3/P5), "I feel there isn't much capacity to create a bond with a screen." (Q4B/P4) and "There are things the other person feels that I don't understand, and I don't know how a tool like this could reach that." (Q6/P6)
	Human Aspects of Therapy	Q11: P5, P19, P20 Q11: P7, P8, P10, P12 Q11: P3, P13, P16 Q11: P7, P10, P12 Q11: P1, P16, P18 Q11: P9, P20 Q11: P10, P11, P12 Q11: P2 Q11: P2, P10, P12 Q11: P9, P20 Q11: P1, P12, P14	"Being empathetic is a human ability." (Q11/P4), "Empathetic listening, empathetic gaze." (Q11/P12), "It is necessary to feel the other person." (Q11/P5), "Being able to experience the pain of another." (Q11/P16), "Empathy is not just a brief display of nice words." (Q11/P18) and "The hug, the touch, the look, the tears." (Q11/P13).
	Therapist-Patient Relationship	Q4: P1, P6, P14, P16, P18 Q4: P6, P9, P14, P17, P20 Q4: P7, P14, P16, P20 Q8: P1, P3, P13, P14 Q9: P1 Q9: P4, P12 Q10: P11, P14, P20 Q11: P5, P19, P20	"There is something very important in a therapeutic process, for example, which is silence." (Q4/P1), "Artificial intelligence will never have the ability to create a therapeutic bond with someone." (Q9/P4) and "Therapy is based on the relationship." (Q10/P14).
Perception of the Future	Accelerators for Therapy AI Adoption by Patients	Q3: P4, P6, P10, P14, P17 Q8: P6, P9, P18, P20 Q8: P3, P9, P18, P19, P20	"It depends on the type of help they are looking for." (Q3/P14), "Symptom relief without the discomfort of intimacy." (Q8/P9), "People want to feel better without having to open up." (Q8/P20) and "People are very interested in a technology that is extremely revolutionary." (Q8/P19).

		Q8: P1, P2, P15, P16, P17 Q8: P16, P17, P19, P20	
	Perception of the Future by Professionals	Q2: P17, P20 Q7: P1, P3, P5, P13, P16, P20 Q7: P1, P2, P6, P12, P15, P16	"I don't rule out the possibility of this evolving." (Q2/P17), "There's no point in being resistant to it." (Q7/P1), "Of course, I'll have to adapt to that reality." (Q7/P3) and "We need to update ourselves as well." (Q7/P13).
AI Benefits and Efficiency in Therapeutic Practice	Enhancing Therapist Efficiency with AI	Q1A: P1, P8, P17, P18 Q3: P16, P18 Q5: P1, P9, P10, P16 Q5: P4, P16 Q5A: P10 Q5A: P1, P14, P15 Q5A: P1, P9, P14 Q5A: P7 Q5A: P12 Q5A: P11, P16 Q5A: P8, P15 Q5A: P9 Q6: P4, P8, P9, P12, P13, P20 Q6: P1, P9, P14, P15, P17 Q6: P1, P2, P4, P8, P9, P12, P13, P15, P16, P20 Q9: P4, P12 Q9: P3 Q10: P3, P4, P9, P10 Q10: P6, P8, P9 Q10: P6, P18	"The idea of transcribing sessions, organizing cases, asking for help with dilemmas we face...helps us just to think and organize our ideas a bit faster." (Q1A/P1), "I believe there are psychotherapists who are very receptive and even grateful or eager to explore things like this." (Q5/P1), "An artificial supervisor that is always available." (Q5A/P1), "It would be very useful to have something of this kind recorded and systematized." (Q6/P1) and "Write as much as possible about the sessions." (Q10/P8)
	Positive Impact of AI Data Access from Patients by Therapist	Q4C: P12, P9, P6 Q4C: P2, P3, P9, P10 Q4C: P6, P13, P8, P10, P19	"I would like that." (Q4C/P6), "Lead to a more immediate gathering of information." (Q4C/P13), "More information is always beneficial." (Q4C/P8) and "It could help us understand, for example, the evolution of that pattern." (Q4C/P10)
	Recognized Benefits of AI for Professionals	Q10: P2, P6, P8 Q5: P1, P4, P9, P16	"To help with our work, to make certain procedures easier." (Q5/P1), "In supporting the work, I believe it can." (Q5/P9), "More capable than a human at making that diagnosis." (Q10/P2) and "It would be faster for me." (Q10/P8)
Professional Adaptation to AI in Therapy	Need for Professional Adaptation	Q7: P4, P7, P8, P13, P20 Q9: P1, P4 Q9: P16, P9 Q9: P17, P18 Q9: P6, P11	"A good therapist will already adapt to the patient's needs." (Q9/P16), "What will matter is what is uniquely and exclusively human." (Q9/P9), "We will have to adapt to understand that this will become part of the sessions." (Q9/P17) and "To try, in some way, to raise awareness or bring this to debate at the societal level." (Q9/P11).
	Resistance to AI integration by Professionals	Q5: P1, P3, P6, P11, P15, P18, P20 Q9: P6, P12 Q9: P4, P5, P10	"I don't know if we, and I include myself here, become a bit resistant." (Q5/P3), "To deconstruct that because no one holds all the truths about anyone." (Q9/P6), and "To show that, okay, artificial intelligence can solve some issues, but nothing will ever be comparable." (Q9/P12).

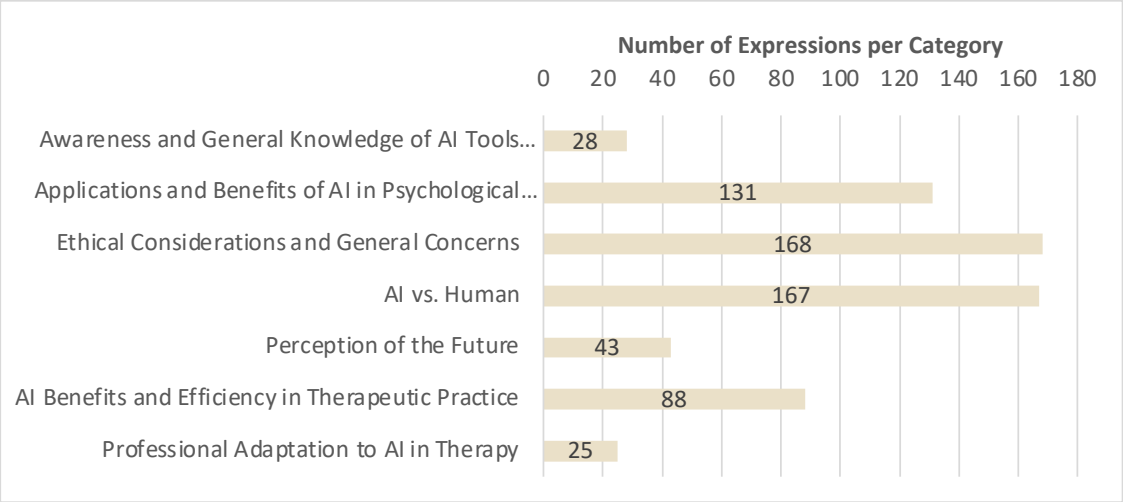
Appendix S

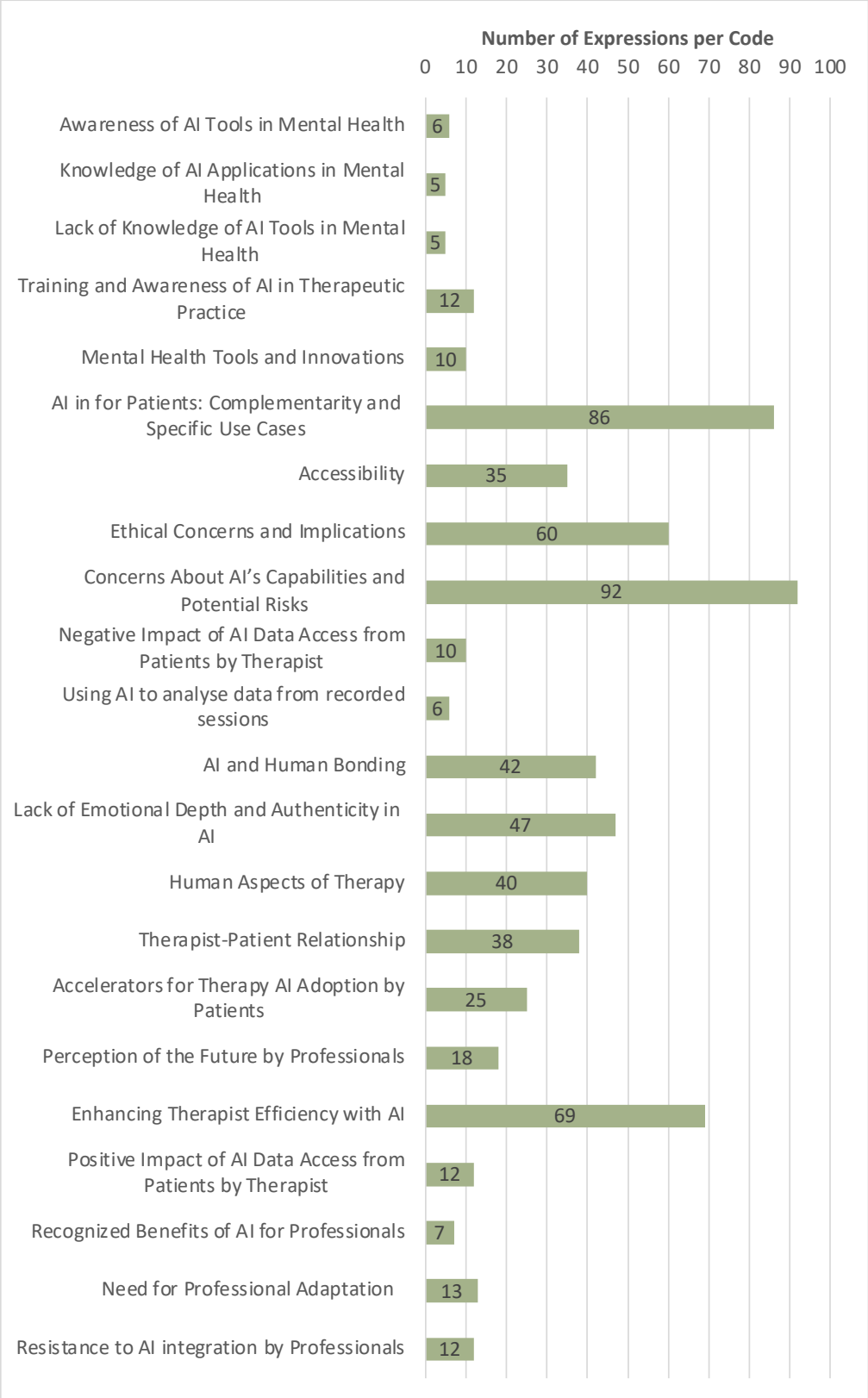
Complete table with the saturation evidence of RQ4

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Q1	100%	50%	0%	50%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q1A	100%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q2	100%	50%	0%	0%	0%	33%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q3	100%	0%	0%	25%	20%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%
Q4	100%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q4A	100%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	25%	20%	0%	0%	0%	0%	0%	0%
Q4B	100%	0%	0%	50%	33%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q4C	100%	33%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q5	100%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q5A	100%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
Q6	100%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q7	100%	0%	0%	60%	0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%
Q8	100%	0%	0%	0%	33%	25%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q9	100%	0%	33%	25%	0%	20%	0%	16%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%
Q10	100%	33%	25%	0%	20%	0%	0%	17%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Q11	100%	0%	0%	50%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Saturation Point	**100%**	**10,38%**	**10,38%**	**18,81%**	**13,56%**	**4,89%**	**2,56%**	**2,06%**	**1,81%**	**1,25%**	**2,44%**	**0,00%**	**1,56%**	**1,25%**	**3,22%**	**0,89%**	**0,00%**	**0,00%**	**0,00%**	**0,00%**

Appendix T

Total number of expressions per categories and per codes for RQ4




Number of Expressions per Code
0 10 20 30 40 50 60 70 80 90 100
Awareness of AI Tools in Mental Health
6
Knowledge of AI Applications in Mental Health
5
Lack of Knowledge of AI Tools in Mental Health
5
Training and Awareness of AI in Therapeutic Practice
12
Mental Health Tools and Innovations
10
AI in for Patients: Complementarity and Specific Use Cases
86
Accessibility
35
Ethical Concerns and Implications
60
Concerns About AI's Capabilities and Potential Risks
92
Negative Impact of AI Data Access from Patients by Therapist
10
Using AI to analyse data from recorded sessions
6
AI and Human Bonding
42
Lack of Emotional Depth and Authenticity in AI
47
Human Aspects of Therapy
40
Therapist-Patient Relationship
38
Accelerators for Therapy AI Adoption by Patients
25
Perception of the Future by Professionals
18
Enhancing Therapist Efficiency with AI
69
Positive Impact of AI Data Access from Patients by Therapist
12
Recognized Benefits of AI for Professionals
7
Need for Professional Adaptation
13
Resistance to AI integration by Professionals
12

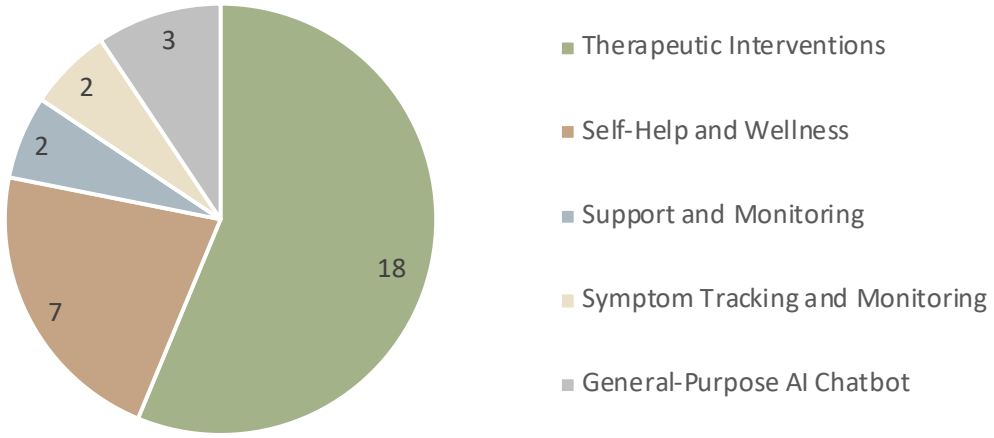
Appendix U

Summary of AI tools and respective article(s) identified in the SLR

AI Tools	Articles	AI Tools	Articles
Woebot	[4], [59], [52], [61], [86], [82], [64], [66], [87], [50], [55], [67], [68], [73], [74], [88], [89], [90], [91], [53], [69], [92], [93], [94], [95], [96], [97], [98]	MindDoc	[65]
Wysa	[4], [56], [59], [62], [64], [65], [66], [80], [86], [88], [89], [90], [99], [50], [67], [68], [69], [73], [74], [85], [91], [93], [95], [96], [98], [100]	Elomia	[66]
Tess	[4], [50], [52], [57], [59], [61], [64], [67], [68], [69], [74], [86], [90],[93], [95], [96], [100]	Nuna	[66]
ChatGPT	[51], [55], [67], [68], [94], [95], [101], [102], [103], [104], [105]	Serenity	[66]
Youper	[65], [66], [68], [73], [96], [98], [106]	MediBot	[107]
Replika	[51], [68], [82], [94], [95]	Leora	[108]
Vincent	[58]	Shimbot	[50], [61]
MYLO	[52], [60], [93]	Vivibot	[50]
TEO	[69], [75], [109]	Ruhh	[50]
Lumen	[54], [72]	Fido	[73]
SimCoach	[64], [81]	XiaoE	[69]
Xiaoice	[50], [94]	Sexpert	[69]
Mobilyze	[69], [74]	B-RIGHT	[69]
Gemini	[51], [95]	SHUTi	[69]
W-GenZD	[110]	Psykh	[92]
MIRA	[111]	Sibly	[95]
XIAO AN	[112]	ChatPal	[100]

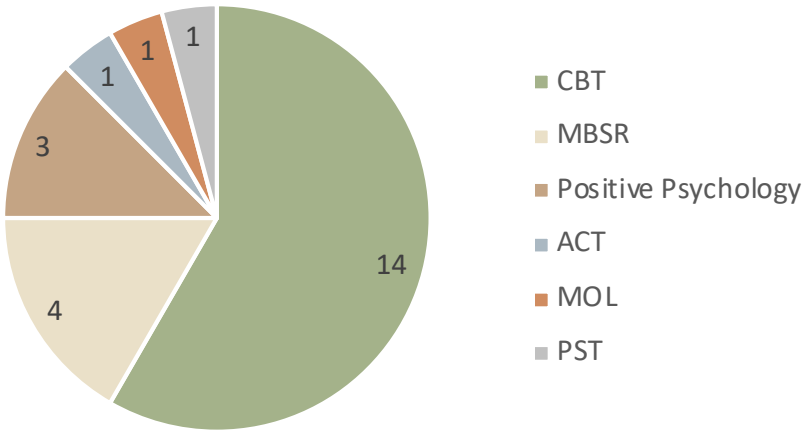
Appendix V

Amount of AI tools per functionality



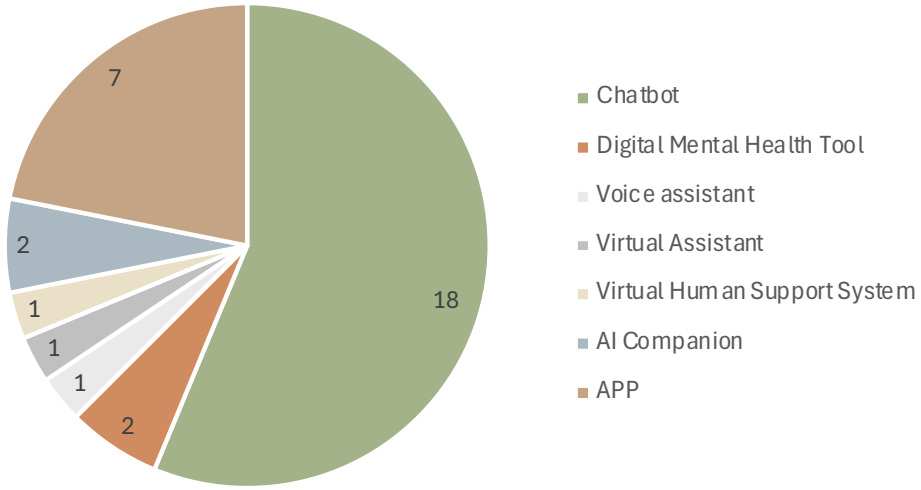
Appendix W

Amount of AI tools using different approaches



Appendix X

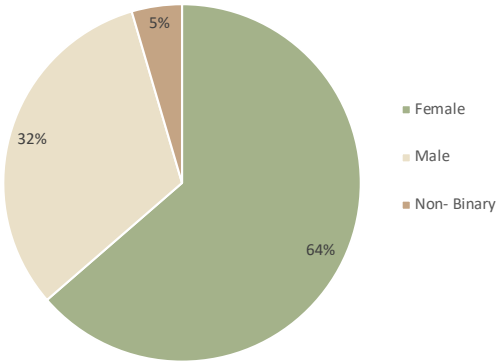
Amount of AI tools per type of AI tool



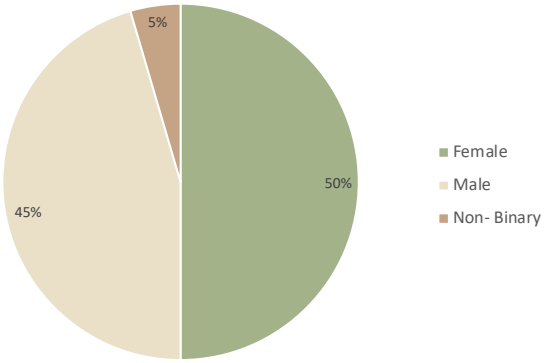
Appendix Y

Gender distribution for RQ2, RQ3 and RQ4

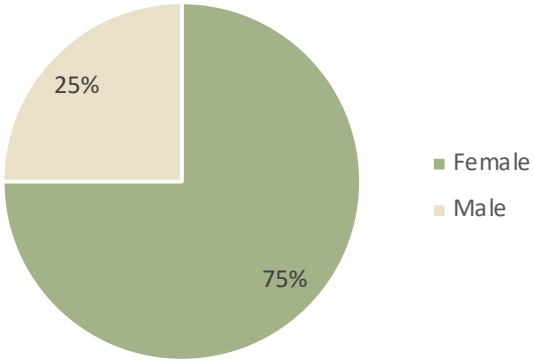
RQ2:



RQ3:



RQ4:



Appendix Z

Summary of concerns and respective article(s) identified in the SLR

Concerns	**Article**
Lack of human understanding	[113], [57], [70], [54], [111], [63], [64], [71], [101], [89], [114], [85], [73], [98], [92], [104], [93], [115]
Scripted interactions	[113], [57], [58], [59], [60], [70], [63], [71], [65], [98], [92], [115]
Privacy, data security and anonymity	[113], [58], [4], [70], [61], [75], [116], [82], [111], [62], [63], [64], [83], [65], [66], [38], [117], [101], [118], [88], [110], [89], [107], [108], [119], [90], [85], [50], [102], [120], [121], [67], [68], [74], [81], [55], [51], [91], [73], [98], [69], [92], [53], [104], [93], [94], [95], [105]
Effectiveness limitations	[113], [57], [61], [54], [63], [65], [66], [38], [90], [85], [50], [98], [104], [93], [96]
Dependence on AI for mental health support	[57], [58], [4], [59], [70], [61], [116], [82], [111], [63], [64], [83], [87], [65], [66], [38], [117], [101], [88], [89], [114], [107], [108], [119], [90], [122], [74], [91], [92], [53], [93], [94], [95]
Limited natural conversation flow	[57], [58], [54], [71], [107], [67], [115]
Lack of non-verbal cues interpretation	[57], [116], [54], [111], [83], [81], [98], [92], [104], [93]
Ethical considerations in crisis situations	[57], [4], [59], [111], [66], [38], [117], [118], [110], [119], [68], [81], [55], [51], [103], [92], [93], [95], [96], [2]
Limited to subclinical populations	[57], [60], [54], [63], [87], [118], [108], [85], [81], [92], [105]
Lack of deep therapeutic relationships	[57], [60], [117], [110], [114], [68], [55], [94], [96]
Limited personalization	[57], [60], [70], [116], [54], [71], [66], [85], [50], [93], [95], [115]
Concerns about replacing traditional therapy	[57], [58], [4], [74], [73], [92], [94], [95]
Digital Accessibility and Equity	[57], [59], [61], [111], [87], [121], [68]
User concern for chatbot well-being	[58]
Lack of true emotional bond with the chatbot	[58], [87], [110]
Chatbot's emotional expressions	[58]
Harm prevention	[4], [61], [95]
Lack of understanding of AI limitations	[4], [61], [83], [88], [107], [81], [95]
Transparency of algorithms	[4], [70], [61], [116], [63], [108], [2]
Cultural implications	[4], [61], [87], [122], [91]
Lack of training/regulation	[4]

Efficacy and Evidence-Based Practice	[59], [110], [92], [104], [105]
Bias and Fairness	[59], [70], [61], [75], [116], [82], [111], [83], [71], [87], [38], [101], [88], [108], [119], [122], [50], [68], [51], [69], [92], [104], [94], [95], [105], [2]
Dehumanization of therapy	[59], [116], [82], [38], [122], [53], [94]
Normalization of Self-Care	[59]
Profit-Driven Motivations	[59], [61]
Lack of Regulatory Oversight	[59], [61], [63], [64], [87], [38], [88], [89], [90], [85], [122], [50], [120], [55], [51], [91], [69], [104], [95]
Loss of Faith in the System	[60], [70], [111], [62], [63], [50], [92]
Confusing or Inappropriate Questions / Answers	[60], [61], [55]
Emotional Overload and Disengagement	[60], [62], [50]
Accessibility and Usability Issues	[60], [65], [121], [115]
Lack of Human Empathy	[70], [82], [54], [111], [62], [83], [87], [85], [102], [67], [68], [74], [69], [53], [94], [2], [115]
Loss of Human Judgment	[70], [94]
Therapist Acceptance and Integration into Practice	[70], [94]
Absence of Professional Supervision	[61], [63], [95]
Accountability Issues	[61], [116], [83], [87], [74], [92], [94]
Reduction of Human Interaction	[116], [82], [63], [122], [102], [94], [115]
Perception and Stigma	[116], [111], [87], [93]
Accessibility vs. Quality	[116]
Transference and Emotional Connection Challenges	[116], [62], [64], [87], [102], [120], [121], [81], [55]
Digital Dementia	[82], [102], [94]
Misdiagnosis, Misinformation and Limited Scope	[82], [111], [87], [38], [117], [114], [85], [102], [55], [92], [53], [104], [94], [95], [105], [96], [2], [115]
Feeling Rushed	[54]
Information Overload	[54]
Technical Issues and Reliability	[54], [65], [101], [88], [81], [103], [92], [93], [105], [115]
Engagement and Motivation Issues	[54], [65], [110], [85], [50], [120]
Acceptance and Trust from Clients	[123]

Manipulation Risks	[63], [83], [101], [92]
Need for Continuous Improvement	[63], [87], [38], [101]
Language barriers	[87]
High Costs and In-App Purchases	[65]
Emotional Attachment to AI	[38], [94]
Loss of Human Autonomy	[88], [94]
Loss of Mutuality Conversations	[94]