Therapists' attitudes towards the use of AI in therapeutic practice: considering the therapeutic alliance

Abstract

Purpose: The overall aim of this research was to gain an insight into the attitudes that therapists, both qualified and trainee, have towards the use of AI/machine therapy in therapeutic practice. The paper also wanted to gain an insight into attitudes towards machine therapy and the potential of developing a therapeutic alliance with a machine therapist.

Design/methodology/approach: A short questionnaire was developed to gauge therapists and trainee therapists' attitudes towards machine therapy. The questionnaire included a scenario for participants to read and then respond to questions on the therapeutic alliance using questions based upon those asked on the working alliance short inventory scale (Hatcher, & Gillaspy, 2006). At the end of the questionnaire there was also the opportunity for participants to respond to an open-ended question.

Findings: It is evident from the responses that there is a clear reservation about the use of AI technology within the therapeutic setting. Despite this reticence, many participants recognised the potential and are open to the possibilities this technology can bring. It was notable that the therapists largest concern was about the potential to create a strong bond with a machine therapist.

Originality/value: This paper presents findings on the attitudes towards AI use within therapeutic practice and machine therapy from therapists. Whilst limited in scope, it provides a yardstick for considering the way that the attitudes towards these emerging technologies might change in the future.

Key words; artificial intelligence, machine therapy, therapeutic alliance, counselling, therapy

Introduction

Artificial Intelligence and mental health and wellbeing services

In 1955, McCarthy and colleagues (McCarthy, Minsky, Rochester & Shannon, 1955) speculated that all facets of learning and intelligence, could in theory be described with the precision necessary for a machine to simulate them. Due to technical advancements in recent years, AI is becoming utilised in many areas of our lives including health care including mental health care. A previous review looking at the application of chatbots in mental health, showed that those focusing on depression significantly outnumber chatbots targeted at other disorders, such as anxiety, post-traumatic stress, and autism (Abd-Alrazaq, Asma, Alajlani, Bewick & Househ, 2020). Chatbots have been used to screen, provide training, and offer therapeutic support for people with mental health conditions (Abd-Alrazaq, Alajlan, Ali & Bewick, 2019). For instance, a recent book chapter involving the authors discussed the viability of two new and innovative chatbots, one to support addiction recovery (Foxbot), the other to support trainee counsellors (ERIC- emotionally responsive interactive client) (Ogilive, Hanley, Prescott, & Carson, 2022), recognising some of the versatility of this technologies use within mental health care. Foxbot was designed to support people in addiction recovery by providing positive recovery interventions that reduce the immediate risk of relapse. Utilising positive psychology theory and the concept of positive computing providing a solid theory driven design (Ogilvie, Prescott, & Carson, 2021; Ogilvie, Carson, & Prescott, 2022).

Utilising AI and robotics for mental health care has raised numerous ethical and social considerations. Considering the recent literature, Fiske, Henningsen and Buyx (2019) view AI as a

promising approach to mental health whilst acknowledging several ethical and social issues in its use. The major ethical concerns raised in the paper were around safety, risk, and harm prevention. There were also issues raised around guidance on the development of AI applications, training staff and the potential for misuse of the technologies which could exacerbate health inequalities rather than reduce them.

Ethical concerns regarding safety through replacing a human with a systemised agent, and the potential this has to do harm, has already been demonstrated in the use of existing chatbot (AbdAlrazaq, Asma, Alajlani, Bewick & Househ, 2020; Ogilvie, Carson & Prescott, 2022). For example, in a review of chatbots utilised to support people with substance use disorder, Ogilvie, Prescott and Carson (2022) conclude that more research is needed to investigate the usefulness and safety of chatbots in this area.

Despite concerns and reservations of AI and chatbot technology, the literature does suggest many favourable views for developing new and innovative uses within mental health services, for mental health support (Vaidyam, Wisniewski, Halamka, Kashavan & Torous, 2019). Indeed research suggests a number of benefits to AI technology within mental health care in particular its potential to engage hard to reach populations, as well as being a technology that could provide access to people living in resource-poor areas (Fiske, Henningsen and Buyx, 2019). It can also free up mental health professionals time (Fiske, Henningsen and Buyx, 2019), as well as having the potential to detect mental health concerns early and reduce the stigma associated with therapy (Stix, 2018). Research has found some people prefer a non-human therapist for reasons including it allows clients to self-direct the pace of the information important for clients with low literacy (Bickmore, Pfeifer and Jack, 2009). The machine therapist will also be always available, never forgets nor judges and has an endless amount of time and patience (Gionet, 2018; Galvao Gomes de Silva, Kavvanagh, Belpaeme, Taylor, Beeson and Andrade, 2018).

From their findings, Fiske et al (2019) posit several recommendations for this emerging field. These include guidelines on the use of AI in mental health services, recommending that AI tools should be additional resources to care, the need for professionals to be trained in the use of AI systems, the need for reliable pathways of risk-assessment and referral if the AI technology is not supervised by a trained professional, as well as guidance on how to respect patient autonomy. As is evident in the breadth of this list, AI has the potential to pervade many aspects of therapeutic work.

The use of AI technology within education and training has been recognised as a value in health care and in mental health care. Typically, AI technology, including chatbots have three pedagogical roles which is used to either streamline process support students are be educator (Wollny, et al, 2021). The use of AI within education is becoming widespread across disciplines (Quiroga Perez, Daradoumis, & Puig, 2020). Despite its usability their use has however received criticism with some finding the discourse lacks personality (Smutny & Schreiberova, 2020), the information is process driven rather than led by student need (Wollny, et al., 2021; Bahja, Hammad, & Butt, 2020).

The therapeutic alliance

The therapeutic alliance (sometimes referred to as the Working Alliance) is a term used within therapeutic literature to articulate some of the most important common factors in successful therapy. It was a conceptualisation first written about by Bordin (Arbor & Bordin, 1979) and can be broken down into the following three constructs:

(1) agreement between the therapist and client on the goals of therapy,

(2) agreement between the therapist and client on the tasks of therapy, and

(3) an emotional bond between the therapist and client.

Since developing this frame, the therapeutic alliance has been developed into the well regarded questionnaires, the Working Alliance Inventory (Tracey & Kokotovic, 1989) and its associated shorter versions (e.g. (Hatcher & Gillaspy, 2006). Following on from this, and making use of these questionnaires, a strong relationship has been identified between the core concepts of the therapeutic relationship and successful therapy. Most notably, this is consistently evident within the findings from the American Psychological Association's taskforce examining what components of psychotherapy relationships work (Norcross & Wampold, 2018).

The frame of the therapeutic alliance has yet to be considered alongside the use of AI within therapeutic work. Whilst computers have been used in therapeutic work for some time (e.g. Anthony & Goss, 2003), as indicated above, developing a deep therapeutic relationship with a machine proves more contentious. Whilst researchers have investigated the way that chatbots might make use of therapeutic theory since the 1960s, with computer scientists creating a chat programme that mimicked person-centred therapy responses (Weizenbaum, 1966), the idea of developing deep intimate therapeutic relationships with such a programme remains the territory of science fiction. Anecdotal evidence suggests that therapists are sceptical of developments in this arena and raise numerous concerns about such movements. However, just as therapists have had to become accustomed to the development of remote therapies since the onset of the covid-19 pandemic (Hanley, 2021), it is likely that AI technologies will also play a significant role in the future of therapies.

Rationale and research questions

To date, there has been little systematic reflection upon the attitudes of therapists, both trainee and qualified professionals, towards the potential use of AI in therapeutic contexts. Further, there has been no consideration of how the concepts of the therapeutic alliance might translate into the work offered by a machine therapist. As such, this project sets out to explore this relationship with the following questions:

RQ1: What are therapists' attitudes towards the use of AI in therapy?

RQ2: Do therapists believe that the components of the therapeutic alliance (goal, task, and bond) can be achieved using AI in therapy?

Methods

Design

An exploratory survey was developed to solicit the views of therapists and therapists in training about their attitudes towards the use of AI in therapy. The study received ethical clearance from the University of Bolton's ethics committee (JP previous institution).

Participants

Participants were recruited through convenience sample utilising a snowball strategy based on the authors contacts and associations within the profession. 35 counsellors completed the

questionnaire. 26 (74%) classed themselves as trainee therapists and 9 (26%) as therapists. 74% (n=26) practices and integrated approach, 14% (n=5) CBT and 11% (n=4) a psychodynamic approach. 69% (n=24) identified as female, 29% (n=10) as male and 1 person selected other. In terms of age, 23% (11) were aged 22-29, 29% (10) 40-49 and 26% (9) 30-39.

Only 1 participant said they had experience of working with AI/machine therapy, the experience being using wombat, Limbic and Eliza.

Materials

All participants were asked to complete an online questionnaire which was based on Likert scale questions and an open-ended question. As the questionnaire hoped to gain an insight into way that the therapists perceived the different elements of the working alliance, the Working alliance inventory short version (Hatcher, & Gillaspy, 2006) was used as a basis for some of the questions asked. This inventory has three subscales, notably goal, task, bond. The items from this scale were revised to consider whether the therapist thought that the component might be offered by a machine therapist. The scale was scored from 1- strongly agree to 5- strongly disagree.

In addition to the therapeutic alliance measure, the authors devised twelve questions in order to gain an understanding of attitudes towards machine therapy in terms of four areas; access, general attitudes, risks and training (see box 1). Each sub-category had 3 Likert-scale questions from 1 strongly agree to 5 strongly disagree.

Box 1. Questions

Access
A machine therapist can engage hard to reach populations in therapy
Machine therapy will exacerbate existing mental health inequalities (reverse scored)
AI can help reduce social stigma around mental health
General attitudes
AI is a promising therapeutic approach
A machine therapist can provide effective support
AI has the potential to detect mental health concerns early
Risk
There is too much risk for vulnerable patients in machine therapy (reverse scored)
A machine therapist will have difficulty evaluating emotional state (reverse scored)
Professional standards are required in the use of machine therapy.
Training

AI should only be used for training purposes, not real therapy (reverse scored)

A machine therapist would provide trainee counsellors an opportunity to practise therapeutic techniques.

Machine therapy can encourage therapists to think about new ways/theories for conducting therapy

In addition to the quantitative questions to be answered using a 5 point Likert scale, an open ended question, asking for any further comments, was included on the questionnaire. The responses from this element were examined and summarised into key themes.

Results

Below we provide a brief overview of the survey. Initially the general attitudes towards work with AI are presented alongside the questions focusing upon the therapeutic alliance. Descriptive statistics are presented to summarises the responses to the questionnaire from the respondents. Following on from the summary of the quantitative data that has been collated, the qualitative responses are outlined.

Attitudes towards AI

When asked if they would consider accessing therapy by a machine therapist, 56% (n=19) selected no, 35% (n=12) selected maybe and 9% (3) selected yes.

Participants generally disagreed to the statements that AI can help reduce social stigma around mental health, that AI is a promising therapeutic approach, that a machine therapist can provide effective support, A machine therapist will have difficulty evaluating emotional state,

Participants tended to agree that Professional standards are required in the use of machine therapy, AI should only be used for training purposes, not real therapy. The means and standard deviations for the individual questions can be found in table 1.

Table 1. Attitudes to AI descriptive information.

	Mean	Std Deviation	Variance
Access			
A machine therapist can engage hard to reach populations in therapy	2.68	1.39	1.92
Machine therapy will exacerbate existing mental health inequalities	2.74	1.29	1.67
AI can help reduce social stigma around mental health	3.03	1.32	1.73
Attitudes			
AI is a promising therapeutic approach	3.47	1.19	1.43

AI technology has the potential to detect mental health concerns early	2.85	1.31	1.71
A machine therapist can provide effective support	3.32	1.13	1.28
Risk			
There is too much risk for vulnerable patients in machine therapy	2.26	1.36	1.84
A machine therapist will have difficulty evaluating emotional state	2.18	1.29	1.67
Professional standards are required in the use of machine therapy	1.76	1.31	1.71
Training			
AI should only be used for training purposes, not real therapy	3.21	1.23	1.52
A machine therapist would provide trainee counsellors an opportunity to practise therapeutic techniques	2.26	1.24	1.55
Machine therapy can encourage therapists to think about new ways/theories for conducting therapy	2.76	1.28	1.65

Therapeutic alliance

Table 2. therapeutic alliance mean and SD

SUB SCALE	M (SD)
Task	12.72 (4.26) min 4- max 20
Bond	16.06 (4.05)
Goal	12.15 (2.19)

Based on the means for the sub scales within the therapeutic alliance (see table 2) it is evident that the use of AI and machine therapy was viewed more positively for goals, followed by task and lastly bond. Bond being the more personal aspect of the therapeutic alliance.

Qualitative Responses

15 participants left qualitative responses when asked if there was anything else, they would like to say about Artificial Intelligence in a therapeutic setting. These have been grouped into four areas; negative responses, possibilities of AI, mixed support and therapeutic risks. All of the quotes have been left verbatim and are shown in table 3.

Table 3. quotes grouped into the four themes

Negative responses	This is evil as f***k and will further exacerbate the two-tiered healthcare system. If you believe in God, I suggest you abandon this incredibly dangerous and misguided idea and beg for his forgiveness.
	I think this will cause more harm than good. Totally wrong. I do not support this in any way. Completely unethical and dangerous. Who owns the data and what will be done with it? This will end up in the hands of insurance companies and governments around the world, and even worse, hackers and scammers.
	Nightmare
Possibilities of AI	
	I think AI could be useful for training purposes though not in realize therapy situations - AI can absolutely not replace human judgement
	all AI/coding developers should HAVE to have REAL sessions of therapy from a range of skilled / novice practitioners to experience therapy.
Mixed support	I am really interested in this in terms of being part of a wider support network for people. As AI develops it will inevitably become more important and more useful within a therapeutic setting. The two aspects is that it will attract more people and will be more easily accessible which is a benefit. There may be thoughts of 'depersonalising' for the client and for the therapist a feeling of deskilling much of their work which may lead to professional incongruence. However, this has happened in many areas over my working lifetime and we adapt as a society.
	Could be a useful tool, though unlikely to understand nuance enough to be a replacement for therapists
	I think AI is definitely not a way forward as an alternative to f2f therapy. It may be helpful as a sort of triage, a first assessment tool as disinhibition effect may facilitate individual seeking therapy to open up quicker and disclose their issue more quickly. However, we are a social species and flourish and thrive through human contact - no machine can replace the effect that the actual presence of a person I.E. a therapist, has on an individual - that contact underpins a therapeutic relationship. I don't want machine to replace the therapist as I think the very essence of two people being in psychological contact, the soul of the therapeutic alliance, would not/could not be replicated by AI...i await to be convinced otherwise
	I think that AI in therapeutic settings would be an interesting area of research and in the future it likely will be very common. However, I don't think AI could ever replace a human being and the complexities of the human mind and emotional depth.

Therapeutic risks	I don't think a machine therapist will be capable to deliver the 3 core conditions of counselling which are empathy, unconditional positive regard and congruence, I think we are so far away from having AI technology that is able to detect the subtleties in human emotional expression that can mean the difference between life and death. I wonder about the 24/7 availability of AI therapy as a risk for increasing the dependency on therapy (I.e. not giving clients the opportunity to practice skills learned in the real world) I would worry about it missing nuance and therefore risks and subtleties of what a client really wants. Empathic understanding is key. I don't know how this will be achieved with an AI It takes away the idea of having an actual human give you respect and an open space to talk. So may be of therapeutic worth for some but I do not believe it would be therapy in the same way. A response from a computer would not feel really empathetic, it would feel fake and therefore for many would not help their issues

Discussion

The general attitudes of the therapists and trainee therapists who participated in this study was one of caution towards AI and machine therapy. Participants had limited, if any, knowledge of AI within a therapeutic setting which may have impacted their responses. Due to the small sample size it is difficult to draw any firm insights at this stage, however this paper provides evidence of the need for a wider understanding of the possibilities of AI within a therapeutic setting. Supporting the literature, it is clear there are many ethical issues and concerns raised when considering AI in a therapeutic setting. Safety and risk were a main concern. There was also concern around the use and potential misuse of data raised.

The possibilities of AI, especially in terms of its use as a training tool for trainee therapists as well as AI providing additional resource to therapy, were mentioned by participants. This supports literature in the area (Fiske et al, 2019) and opens up new avenues for embedding technologically advanced pedagogies into therapeutic training. Whilst such developments remain nascent, this is not something that will take over from current practices swiftly. There are however developments in this arena (e.g. Moilanen et al, 2023), that make use of machine learning that can complement existing practices.

In terms of the therapeutic alliance (Arbor & Bordin, 1979), it is evident that the therapist respondents to the questionnaire appear most cautious about the potential of a machine therapist creating a strong bond with a client. Such a response echoes the anecdotal view that a therapeutic relationship of a sufficient quality cannot be created with a machine. This view is also illustrated in the qualitative responses which posit that a machine can never replace the relationship between a therapist and client. The qualitative responses suggest the relationship that develops in terms of emotional depth and the nuances humans bring to an interaction cannot be replicated by a machine.

Despite the reservations and cautions observed from the study it is also encouraging to see that most participants, despite being critical of these technological advancements are open to the possibilities AI and what machines may offer therapy in the future. Given the massive growth in this area generally, and movement into the therapeutic world (Hanley, 2021), this optimism might be harnessed to support such developments in the future.

Limitations and further research

Although the study provides some interesting insights towards therapists' attitudes in AI and machine therapy a major limitation of the study is its small sample size. The study, whilst providing a useful snapshot of the views on this topic, would benefit from being more focused and comprehensive in its sampling technique. Another limitation is the sample was that it was a predominantly UK sample, one participant was Sri Lankan and two from the USA. Therefore, trying to gain a much larger and much more diverse sample would be beneficial.

Further work may consider how AI can be used to support the training of therapists. Indeed, the authors have evaluated an emotionally responsive interactive client (ERIC) chatbot system they have both been involved in developing which allows students to practice their counselling skills and knowledge with a chatbot client with the support of a chatbot tutor supporting a triage learning method. Additionally, it is important to note that the view reported here is solely the view of therapists. Once such tools are developed, it would be helpful to hear that client's perception of such tools. Whilst these might remain cautious, it is likely that they would be more positive than the therapists themselves. Here we would reflect upon the experiences of the computer scientists during the 1960s (Weizenbaum, 1966) who found people engaged positively with simplistic therapeutic programmes.

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