

Navigating Relationships with ChatGPT: User Attitudes, Acceptability, and Potential

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We have no known conflict of interest to disclose. The research was funded by the Institute of Psychology at University of Lausanne, Switzerland. The funders had no involvement in the collection, analysis, or interpretation of the data and were not involved in the writing or submission of this article. Rachel R. R. Francois-Walcott, Predoctoral Research Fellow, NIHR302755) is funded by the NIHR. The views expressed in this publication are those of the authors and not necessarily those of the NIHR, NHS, or the UK Department of Health and Social Care.

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Abstract

Generative AI technologies like ChatGPT have advanced into mainstream use. Unlike early chatbots with limited responses and interactions, they are capable of providing therapeutic responses and human-like conversations. However, research evaluating chatbot capabilities and user acceptance is limited. One study found responses attributed to chatbots (vs. expert) were rated lower in helpfulness and empathy. Another study where a therapist emulated a chatbot using templated responses, showed participants found it suitable for relationship therapy. In the present paper, we extend these prior studies by exploring attitudes to chatbots within a relationship therapy context. Study 1, involved five focus groups with 30 young people some of whom were shown examples of chatbot-generated relationship advice and in Study 2, 20 participants had a single-session of relationship therapy and were interviewed about their experiences. Three main themes intersected both studies: accessible first line treatment, artificial advice for human connection, and internet archive. Two further themes privacy vs. openness and are we in a Black Mirror episode? arose in Study 1 and exceeding expectations and supporting neurodivergence in Study 2. These themes highlight the overall more positive attitudes in Study 2 following interaction with a chatbot compared to Study 1 in which participants had limited prior exposure to chatbots. This research underscores the evolving role of AI in augmenting therapeutic practices and also opens new avenues for integrating advanced chatbot technologies in relationship support, paving the way for more personalized, accessible, and effective relationship interventions in the digital age.

Keywords: close relationships; relationship interventions; digital interventions; chatbots; large language models; artificial intelligence

Navigating Relationships with ChatGPT: User Attitudes, Acceptability, and Potential

Well-functioning close relationships are a cornerstone of individual well-being; distress in a couple relationship has implications across multiple life domains including mental and physical health, even mortality (Proulx et al., 2007; Robles et al., 2014; Shaffer et al., 2022; Whisman et al., 2008). People face numerous barriers to seeking treatment for relationship difficulties including availability, accessibility, stigma, and cost, which can prevent accessing treatment (Cicila et al., 2014; Shaffer et al., 2022). Digital interventions provide a promising avenue to mitigate some of the barriers and have been shown to be equally effective to face-to-face interventions (Cicila et al., 2014; Georgia Salivar et al., 2020; Hatch et al., 2022). However, despite the effectiveness of online interventions, research has shown poor adoption of digital health services worldwide indicating low levels of acceptability and intention to use, potentially constituting a barrier to reaching the full potential of these services (Apolinário-Hagen et al., 2018; Klein & Cook, 2010; Mohr et al., 2018; Musiat et al., 2014; Wahbeh et al., 2014; Wallin et al., 2016). The current digital interventions to address relationship issues generally report low uptake and high dropout rates (Keller et al., 2021; Rothman et al., 2019). Therefore, alternative options to traditional digital health interventions are needed.

One solution proposed by many authors is to incorporate a facilitator into a digital health intervention who is either a trained therapist or a non-expert and helps guide the participant through the program (Baumeister et al., 2014; Robinson et al., 2010; Titov et al., 2010). The results show that these blended programs combining online interventions with a human facilitator have dramatically higher engagement rates compared to digital interventions as a standalone treatment (Zarski et al., 2022). Adding a human facilitator helps overcome some of the barriers with digital interventions but reintroduces many of the same barriers as face-to-face treatments. Another potential solution that may present a hybrid

between a human connection and digital intervention is a chatbot. Chatbots are computer programs designed to interact conversationally with humans that are often powered by artificial intelligence (AI). Chatbots have shown promising results in mental health interventions (Abd-Alrazaq et al., 2020; Boucher et al., 2021; He et al., 2022; Huq et al., 2022; Jabir et al., 2022; Laranjo et al., 2018; Vaidyam et al., 2019). The existing evidence suggests that chatbots can foster a therapeutic alliance with a user thus supporting engagement with the intervention (Jabir et al., 2022; Martinengo et al., 2022). For example, Beatty et al. (2022) showed increased bonding as evidenced by gratitude, personification, and self-disclosed impact in their content analysis of the chatbot Wysa. The researchers found that the therapeutic alliance scores became comparable to previous studies on human-therapist interventions over time. However, given this technology is relatively recent and arguably a truly human-like conversation has only been possible since ChatGPT came out in November 2022, there are only a few studies which have explored people's attitudes toward using chatbots to provide digital interventions.

To contextualize our research within a theoretical framework, we used the Artificial Intelligence Device Use Acceptance (AIDUA) framework proposed by Gursoy et al. (2019) which is based on the Cognitive Appraisal Theory (Lazarus, 1991) and the Cognitive Dissonance Theory (Festinger, 1957). The framework describes a theoretical structure for understanding people's attitudes toward AI technologies, namely the acceptance or resistance toward AI through a tripartite process: primary appraisal, secondary appraisal, and outcome. The primary appraisal refers to determining the importance of the technology to oneself. It involves considering the attitudes toward the technology in one's social circle (social influence), the potential enjoyment and pleasure from adopting the technology (hedonic motivation), and how human-like the people view the AI (anthropomorphism). The secondary appraisal involves making a cost and benefit analysis based on the expected

performance and effort that will be required to use the technology which in combination will influence the emotions toward the AI technology. Finally, the framework posits that the outcome following the primary and secondary appraisal is either a willingness to accept the use of AI devices or the objection to their use. For example, the endorsement of AI by social circles was observed to foster positive emotions and behavioral intentions, suggesting that individuals are more inclined to adopt AI when its use aligns with the norms of their social groups (Gursoy et al., 2019).

Several previous studies have examined attitudes toward chatbots in providing mental health interventions. Some of these studies have shown an overall positive attitude toward using chatbots for mental health support and a high intention to use these services in the future (Gbollie et al., 2023; Koulouri et al., 2022; Sweeney et al., 2021). For example, Koulouri et al. surveyed young people and interviewed counselors working with young people. They found that 37% of young people would feel comfortable talking to a chatbot about their mental health with a further 39% reporting feeling neither comfortable nor uncomfortable with the final 24% reporting feeling uncomfortable. Counselors who were shown an example of a chatbot viewed chatbots as a complement to help facilitate access to professional services and acknowledged that chatbots could provide immediate support in an empathic, personalized, and usable way. However, in another study, psychotherapists expressed predominantly negative attitudes toward the integration of AI within psychotherapy practices, especially among those with systemic and psychoanalytic orientations (Sebri et al., 2021). Cognitive behavioral therapists were overall more optimistic about the potential use of AI (Sebri et al., 2021) which may reflect the more long-standing tradition of these models already being translated to online interventions. Despite the existence of some resistance, these studies suggest that both experts and potential users can see the potential benefits of support by a chatbot in mental health care.

Attitudes toward chatbots have been explored relatively little in the context of relationship interventions. A randomized controlled trial comparing a rule-based (i.e., the responses were pre-programmed rather than users being able to interact with the chatbot in natural language) relationship chatbot with traditional bibliotherapy found the chatbot more effective in improving most clinical outcomes compared to bibliotherapy (Troitskaya & Batkhina, 2022). They also found that the user experience was high in terms of content, design, and comfort interacting with the chatbot. Another recent article compared responses from relationship experts to chatbot responses across two studies (Vowels, 2023). The participants were asked to compare responses written by a chatbot and an expert across different relationship-related questions without knowing which responses were created by a chatbot and which by an expert. The results showed that participants rated chatbot responses higher in helpfulness and empathy compared to experts and were unable to distinguish responses written by a chatbot vs. an expert. However, when participants believed a response was written by a chatbot, they rated the response lower in empathy and helpfulness. This result suggests a bias against chatbot responses despite the participants actually unknowingly finding chatbot responses as more empathic and helpful overall.

While the aforementioned studies shed some light into people's attitudes and biases toward chatbots, they did not explicitly examine attitudes toward using chatbots in relationship interventions. The only study we are aware of that explicitly examined attitudes toward using chatbots for relationship therapy is that of Yuksel and Kocaballi (2022). The researchers used a Wizard-of-Oz technique in which the participants thought they were interacting with a chatbot but were actually interacting with a human. Twelve participants interacted in a single session intervention of cognitive-behavioral couple therapy with the "chatbot" after which they were asked for feedback on their experiences. The researchers found that some participants appreciated the constructive responses and human-like empathy

while others found the responses too generic, robotic, and impersonal. The authors concluded that based on the findings chatbots present a potentially helpful alternative to other formats for relationship interventions. Although recent research has indicated generative AI chatbot responses may be useful and acceptable in relationship therapy spaces, such research has been limited by participants not directly interacting with a chatbot.

The aim of the present research is to expand on these findings to further understand people's attitudes toward using chatbots for relationship interventions. Previous evaluations of chatbots used in healthcare or therapy contexts often used rules-based conversations, lacking the generative AI and Large Language Model (LLM) aspects that are argued to provide more accurate, relevant, and human-like responses (Ray, 2023). Additionally, research evaluating therapeutic capabilities and user acceptance with the most recent versions of generative AI, have often used simulated conversations, as opposed to real participants receiving therapy (e.g., Elyoseph & Levkovich, 2023; Vowels, 2023); used therapists rather than real chatbots (Yuksel & Kocaballi, 2022); were based on intentions not actual use (e.g., Shahsavar & Choudhury, 2023); or have been used by those providing support, such as peer-support workers or therapists, not the user in distress (Sharma et al., 2023). Therefore, in two studies we extend on the aforementioned research by exploring people's attitudes toward chatbots. In Study 1, we asked young people in focus groups how they felt about receiving relationship advice and intervention via a chatbot with half the sample being shown examples of advice written by GPT-4 and half not having any prior examples of chatbots. In Study 2, participants engaged in a single-session intervention with GPT-4 and were interviewed about their experience with the chatbot and attitudes toward using chatbots for interventions.

Study 1: Focus Groups

In Study 1, we interviewed participants in focus groups with their peers about their attitudes toward using chatbots such as ChatGPT for relationship interventions. The

participants were asked to discuss what healthy relationships with others such as romantic partners, friends, or family members looked like for them and afterward they were asked about what they thought about receiving relationship advice from a chatbot to develop healthy relationships. After the first two focus groups it was clear that participants found it difficult to imagine what the advice might look like and therefore for the remaining three focus groups we showed them an example of relationship advice written by relationship expert or GPT-4 without telling them which response was written by which. Our research question was “What are young people’s attitudes toward seeking relationship advice from a chatbot?”

Method

Participants

A sample of 30 participants aged between 18 to 25 ($M = 21.2$ $SD = 1.8$) were recruited during summer 2023 in the [removed for peer review]. All participants identified with the gender assigned to them at birth (100% cisgender, $n = 10$ [33%] identifying as men and $n = 20$ [67%] as women). The participants were of diverse sexual orientations ($n = 19$ [63%] heterosexual, $n = 8$ [27%] bisexual, $n = 2$ [7%] pansexual, $n = 1$ [3%] gay/lesbian) and a balanced proportion of couples ($n = 16$ [53%] of whom $n = 3$ [19%] were not in an exclusive relationship) and single people ($n = 14$ [47%]). Regarding social status, $n = 14$ (47%) had a university bachelor's degree, $n = 14$ (47%) a high school diploma and only $n = 2$ (6%) an apprenticeship.

Procedure

This study was part of a wider collection of data aimed at providing a better understanding of healthy relationships among young adults. The questions around chatbots were introduced to better understand whether they could be used to aid the development of healthy relationships. We chose to use focus groups because they allow for dynamic

discussions that stimulate interaction between participants and given that one's social circles can influence their attitudes toward chatbots (Gursoy et al., 2019). Participants were eligible to participate if they were between 18 and 25 years old and had a good understanding of French. Before participating in the focus groups, the participants were asked to complete a socio-demographic questionnaire on Qualtrics after which they were invited to join one of five different groups. In order to promote diversity and richness in group dynamics, various configurations have been proposed: two groups were made up of either only women or only men (single-gender groups) and the other three groups were mixed, with a majority of women. The focus groups were conducted in a research laboratory at the university. The focus groups were videotaped for later transcription.

Two master students in psychology facilitated the discussions, using a pre-prepared set of guiding questions as a framework : (1) *When the term "good relationship" is mentioned, what comes to mind? What does a good relationship look like to you?* (2) *How do you feel about using an online intervention to get help and information for good relationships ?* (3) *What characteristics or abilities would you expect from a chatbot therapist to address relational difficulties?* (4) *What concerns or obstacles might prevent you or others from using a therapeutic chatbot for relational difficulties?.* We also asked other questions related to healthy relationships, specifically to gender and socialization as well as expressing limits and boundaries in relationships which are beyond the scope of the present paper. In the first two focus groups, it was difficult for some participants to imagine interactions with a chatbot therapist. Thus, in the last three focus groups, we introduced concrete examples of chatbot and therapist responses to open the discussion. The sessions lasted about an hour and a half, and all participants received a 30 CHF supermarket gift voucher. Following the sessions, recordings were securely uploaded to an encrypted server. They were then meticulously transcribed, anonymized to ensure participant confidentiality, and subsequently deleted.

Data analysis

The focus group transcripts were analyzed using NVivo 14.0 software, using reflexive thematic analysis method (Braun & Clarke, 2019) and an inductive approach to coding. All transcripts were coded in their original language in French. Key elements were identified and initially categorized with codes. These codes were subsequently organized into themes through an iterative process. All quotes in the manuscript were translated using transcription software DeepL and verified by two authors who speak both English and French fluently. The quotes in the original language and their respective translations can be found on the OSF project page: https://osf.io/kxf38/?view_only=5ecb2d11f1bc410ea0628c9f5c6ca44e. The full transcripts have not been made available due to sensitivity of the data but can be requested from the authors.

Results

The results were categorized into five main themes: Accessible first line treatment, artificial advice for human connection, internet archive, privacy vs. openness, and are we in a Black Mirror episode?. Below we will describe each theme in turn.

Accessible first line treatment

One major advantage of chatbots over traditional relationship interventions is that it is more readily accessible to people than therapists are. Participants talked about how there is less of a barrier to talk to a chatbot because it is always available and responses can be immediate. One participant also mentioned that it is much cheaper than going to therapy. Another participant also talked about how they would not often want to bother their friends and ruin someone else's mood when they were feeling down, and thus they felt it would be easier to simply talk with a chatbot:

I'm more in the same frame of mind as you where... you know, really calling someone and telling yourself you're going to bother them with your problems.

Maybe he's in a good mood, and you come in with your bad mood, your sadness, and you say to yourself, sure, he's a robot, but to say words that might be comforting, or just to be able to talk to someone, among other things. After all, everyone's like they are, but it's true that if you're at your worst, you won't tell anyone. And it's true that afterwards, you get over your emotions a bit, and you say to yourself "well, wouldn't I try it after all? I think it can be another option, and really also to say to yourself: "Well, I'm not bothering anyone and I still have opinions and advice." But more in that sense, and not just as actual therapy.

Participants discussed the role of chatbots in relationship interventions primarily as something that could help reflecting on “less complex problems” as a first point of call that could provide an immediate response. However, some participants felt it would be too generic to be able to provide in depth interventions. For example, one participant said:

I'd see AI more as the first step, if we don't dare, for the moment, that it encourages us. And also if we don't know where to look, if it's a relational problem, if it's a problem about ourselves, and the AI is going to guide us to a place and basically make our work easier, it would make it easier for us to take the first step. But I wouldn't look for the final answer on an AI in any case.

Another participant also noted that the chatbot could be helpful in making one feel less alone: “If there's a general response, it allows us to see that we're not alone in this situation. I think, because there are others who are also going through the same thing, and sometimes we forget about it.” Overall, participants acknowledged that chatbots were more accessible than therapists but viewed them more as a complement or a first point of call rather than as something that could replace a human therapist.

Artificial advice for human connection

In line with the previous theme, participants generally felt that “nothing can replace a human”. Participants in general did not believe that the chatbot could be empathic and that humans would believe in the empathy they exhibited. They believed that even if the chatbot can simulate empathy, it would be unable to replace human connection: “But what's missing, I think, with empathy, is the link with the person and the relationship. Although it'll [chatbot] be able to shows empathy, it's [chatbot] still missing the human side behind it, which isn't there.” However, some of the participants also acknowledged that empathy is something that can be simulated and it is more about whether the recipient can feel the empathy and believe it to be genuine rather than about whether the provider is actually feeling empathic:

Especially since empathy, I've noticed... It's something you can play with very easily. It's sad to say, but it's something that... It's not very complicated to pretend you're empathetic. It's not very complicated to write a message where you're like, this is empathetic. So ChatGPT, in general, could clearly mimic that or have the right turns of phrase. It's very sad on the one hand, but it's great on the other.

Other participants also discussed the advantages of the chatbot not being a human including it not being biased or judgmental and thus potentially facilitating opening up. They spoke about how it is possible to hide behind a protection of a screen instead of having to open up and bare one's secrets to a stranger. One participant described a chatbot as a potentially neutral party who could provide advice as an outsider:

And what's more, it's a bit... you could see her as a neutral person. Generally speaking, if you've asked your friends for advice, they'll take your side. Or they have a different context. They've heard the story either from you, or from someone else, and so there's bound to be... Whereas here, well, it'll be a fairly neutral judgment and advice that would come from a total outsider. Well, a bit like a shrink, so... it could be pretty good in that respect.

Overall, across all five focus groups, participants had a general consensus that chatbots could not achieve what human therapists could and would not be able to replace human connection and empathy. However, some participants also acknowledged that there could be upsides to the chatbot not being a human. One participant also acknowledged that maybe we are not, as a society, quite ready for the new invention: “Maybe we're not ready enough to assume that we're unwrapping such an intimate, vulnerable part of ourselves for something so... cold... so electric.”

Internet archive

Participants also discussed chatbots as essentially an internet archive as they are trained on what is available on the internet. Participants had mixed feelings about the chatbots having been trained on information available on the internet and thus having knowledge about many different situations from many different perspectives. Participants also talked about how the information provided by a chatbot may not be accurate and it may also not be relevant to the person because the chatbot does not understand or know the person's history. One participant was also worried that if the chatbot was trained on everything rather than focused therapeutic material, it can be biased as a result:

I think that, above all, if we're going to use this for therapeutic purposes, we really need to have a private database, and not one with ChatGPT which has access to absolutely everything, because as a result, it can be biased, and will look for information which isn't consistent, and as a result, may not help.

However, another participant acknowledged that in fact we have already been using technology to find answers for years and chatbots such as ChatGPT just represent a natural evolution of this technology. Indeed, he likened chatbots to another internet archive: Google. Specifically, he said:

It's nothing new! It's been like that for 5, 10, 15, 20 years. It's just that here, effectively, it's a live conversation. But people did their own ChatGPT 10 years ago. They just Google question after question and then dig in. And that's it.

Privacy vs openness

Participants across the focus groups brought up issues around safety, privacy, and confidentiality on the one hand but also the freedom to be open and discuss issues without a fear of being judged and by staying anonymous on the other hand. Some participants had questions around confidentiality and how their data would be stored: “Personally, the only problem is... As usual, with everything chatbot-related, digital, it's confidentiality. Where does the data go? Does it really stay confidential?” But other participants had a more relaxed attitude because they acknowledged that we already share many details online: “I think the Internet knows everything about my body, my soul, my mind (laughs). I might as well go all the way.” Some groups also had a conversation around risk and safety and whether and how chatbots could manage risk effectively. For example, one participant expressed doubt about whether ChatGPT would be safe for people with suicidal thoughts: “Like if there are people with suicidal thoughts, I'm not sure ChatGPT would be super safe.” This conversation was followed by a discussion on how this could be mitigated, for example, by chatbots providing details of emergency services or being explicit when the issue the user was having was beyond what it could help with.

Are we in a Black Mirror episode?

The thought of chatbots providing relationship advice and interventions raised many emotions in the participants which ranged from fear and disbelief to neutrality to excitement, often in the same person. Some participants said the idea of talking to a chatbot about relationship issues reminded them of the Netflix TV show Black Mirror:

It reminded me a bit of a Black Mirror episode, ...I thought we were reaching an alienation of human relationships, and then I found it very... both exciting and very frightening to let yourself be abandoned to something as binary as a robot.

Other participants were worried about the potential of being addicted or developing reliance to a chatbot and closing oneself off from other human beings: "If we want to take Japan as an example, there is an abuse of AI where there are people who are closed in their homes, who live with an AI, who no longer communicate with the outside world."

While the majority of the participants expressed fear and apprehension in thinking about chatbots providing relationship advice, there were some participants who had a more positive attitude toward chatbots. These participants were often the ones who had had prior experience with chatbots or ones who likened it to a natural evolution of search engines such as Google:

Regarding the idea of robots, if I may say so, first of all, all matchmaking applications, like Tinder, all that, Fruits, it's already full algo, it's not you who decides, who you see. The algorithm decides, and then there were the scandals about the fact that these algorithms were biased, that they chose partners with certain profiles, according to your social class, things like that. So there are already biases, in fact, in all this. And we already use them every day, we're not mega-shocked, but we use them very willingly. And I don't think a chatbot therapist is all that shocking compared to what's already in use and accepted today.

One participant also talked about how humanlike Snapchat's AI was and how talking to it could be comforting and helpful, especially when used in moderation:

Personally, I've already used Snapchat, there's an IA that's available to us. And I've already used it for some requests, either for courses or even for staff. And I

was quite surprised by the responses, which seemed really human, which seemed really... Well, actually, it was a comfort. And personally, I found it quite good. After all, use in moderation, because it's still...an AI.

Discussion

Participants' attitudes toward chatbots were categorized into five main themes: Accessible first line treatment, artificial advice for human connection, internet archive, privacy vs. openness, and are we in a Black Mirror episode? Overall, the majority of the attitudes toward chatbots were negative across the five focus groups. However, participants who had had prior exposure to chatbots or acknowledged them as being just an extension of what came before were more likely to see their potential and be less afraid of them. This is in line with previous research (Apolinário-Hagen et al., 2018; Casey et al., 2013; Eichenberg et al., 2013; Vowels & Sever, 2023; Wallin et al., 2016; Weaver et al., 2010) finding that familiarity and exposure lead to more positive attitudes.

Additionally, participants were divided in whether they believed chatbots could be empathic. The question of empathy in machines is not new and is highly debated as a topic. Modern chatbots such as ChatGPT are rated more empathic than relationship experts (Vowels, 2023) and doctors (Ayers et al., 2023) by users and experts. However, it raises a question of whether it is ethical for a machine to display empathy when it does not feel it, at least not in a way that humans do (Brown & Halpern, 2021; Montemayor et al., 2022). It also raises an interesting question about the impact of empathy: Is it possible for empathy to have the same effect on the recipient when it is artificial? It also questions whether therapists have to feel empathy toward their clients in order to display empathy and for clients to feel it.

There are several limitations of the present study. The participants in the study were mostly new to chatbots. While this allowed us to understand the experiences of people who are not already convinced by chatbots, it was sometimes difficult for the participants to

imagine what relationship advice from a chatbot could be like. Because of the difficulty in understanding chatbots' capabilities, we showed three of the five focus groups examples of responses from a chatbot and human expert to help elicit discussion. Participants could not overall tell the difference between the two responses and were sometimes critiquing the human expert response thinking it was the chatbot. This also highlights the potential bias against chatbots which is in line with Vowels' (2023) results which showed that when participants thought responses were written by a chatbot, they rated these responses lower in empathy and helpfulness than when they thought the responses were written by a human expert. It is also important to specify that a significant portion of the participants were studying psychology and digital tools for therapy may represent competition for this discipline. Indeed, psychologists tend to show rather negative attitudes towards AI (Sebri et al., 2021). Additionally, it is important to consider the Swiss cultural context. The Swiss people have shown to have a relatively low intention of using technology (Yang Meier et al., 2020). Indeed, thus our participants may have been more resistant to chatbot interventions than perhaps participants in other societies.

Study 2: Interaction

To address some of the limitations of Study 1, we conducted an additional study in which participants were asked to interact with GPT-4 chatbot and were interviewed about their experiences and attitudes toward chatbots after this experience. Specifically, we asked participants to engage with the chatbot for 20-30 minutes in a single session intervention about a specific relationship issue. The interaction helped address the issue of participants not having much to go on if they had had no prior experience with chatbots. We also wanted to see whether participants would have more positive attitudes following an interaction with a chatbot or if they would report changing their attitudes as a result of the intervention. We also

used a convenience, non-student sample who would not experience chatbots as a threat to their potential future careers.

Method

Participants

Twenty-five participants completed the screening questionnaire but five opted out of the study due to scheduling conflicts or no longer wanting to participate. Therefore, 20 participants (8 [40%] men and 12 [60%] women) were included in the study. The participants were between 25 - 62 years old ($M = 41.8$, $SD = 11.2$) with the majority identifying as heterosexual ($n = 16$ [80%]; bisexual, $n = 3$ [15%]). Most participants were White ($n = 17$ [85%]; Asian, $n = 2$ [10%], mixed, $n = 1$ [5%]), and married ($n = 9$ [45%]; committed relationship, $n = 6$ [30%]; cohabiting, $n = 5$ [25%]). The participants reported various relationship issues including communicating, support with mental health diagnoses, child rearing, absence of sex, prioritizing time, drinking, and household chores.

Procedure

The study was approved by the first author's institutional ethics review board. Participants were recruited through Prolific; they had to be from the United Kingdom and willing to discuss a relationship issue with a chatbot and subsequently discuss this interaction in an interview. All participants provided informed consent and completed a questionnaire to outline their demographic characteristics, a relationship issue, and to select their availability to take part.

Participants were contacted through Prolific to arrange a 1-hour audio only Zoom meeting. During this meeting they were instructed to use study-specific login details for ChatGPT which eliminated the need to provide any identifying details to OpenAI. Participants were told not to disclose any identifying details with the chatbot and were assured the researcher would oversee the conversation for safety and confidentiality.

Participants were also told to initiate the conversation with “hi” or directly describe their relationship issue, the chatbot would then guide the discussion naturally.

The chatbot was given custom instructions (see the full instructions on the OSF project page: https://osf.io/5mh2j/?view_only=1e39c079d35d43fe81a34c26175fc2a6) to respond as a relationship therapist by reflecting and validating participants’ statements while posing open-ended questions to help the client explore the issue. The chatbot was instructed to maintain a conversational tone, limit responses to around 25 prompts, and offer personalized suggestions toward the end of the interaction. The conversations with the chatbot were between 11-34 prompts ($M = 19.67$, $SD = 5.53$).

Following the chatbot interaction, the researcher had recorded interactions with the participant lasting between 6 - 35 minutes ($M = 14$, $SD = 8.05$). Participants were asked a number of questions including: how they felt during the interaction, how using the chatbot compared to their expectations; what they would improve; and how the chatbot compared to seeking advice from other sources. Participants were also asked if they thought the interaction was impacted by the researcher: three participants were aware of the researcher but did not feel it significantly impacted the conversation.

All participants were paid £10 for the study. To maintain confidentiality, the password to access the account was changed after each participant and conversations were downloaded and then deleted to prevent data being used for chatbot training.

Data analysis

In this paper we focus on participants’ attitudes expressed within the interviews rather than analyzing the interactions themselves. The interviews were analyzed with NVivo software, using the reflexive thematic analysis method (Braun & Clarke, 2019). We applied both an inductive and deductive approach as we utilized codes from Study 1 as well as codes directly generated from the interview transcripts. Generating, developing, and refining

themes was an iterative process to ensure each theme suitably contextualized the participants' experiences and showed a shared pattern of meaning. All identifying information and filler words such as 'like' were removed for confidentiality and to aid the readability of the quotes. The full transcripts have not been made available due to sensitivity of the data but can be requested from the authors.

Results

The interviews generated five themes. Three of the themes were similar to those of Study 1: accessible first line treatment, artificial advice for human connection, and internet archive. Two themes were inductively generated and were named exceeding expectations and supporting neurodivergence.

Accessible first line treatment

Accessible first line treatment emerged as a theme as participants noted the chatbot was "always available" to offer advice and relationship support. This was a strength of the chatbot as participants argued they could access support whenever they were in need, stressed, or wanted advice. The chatbot was therefore a convenient source of support as they could receive instant responses without a fear of bothering family members or waiting for an appointment with a professional. Nonetheless, some participants noted that "maybe some people could be a bit over reliant on a chatbot because it'd always be there". As such, the accessibility of the chatbot, while offering immediate support, also raised concerns about potential overreliance and dependence.

Artificial Advice for Human Connection

Participants discussed the advantages and disadvantages of asking a chatbot for relationship advice. Many participants noted the chatbot to be less biased than asking friends or family. Friends and family were argued to "have their own particular motive" whereas the chatbot was "quite similar to talking to a professional". Friends and family were noted to

typically side with the participant; hence, they could not obtain neutral or impartial advice from their peers. As such, objectivity and expertise were advantageous characteristics attributed to the chatbot compared to friends and family who may give advice based on their own experiences.

Furthermore, the impartiality enabled participants to open up and more freely discuss their relationship issues. For example, one participant stated: “I feel more open to talk about stuff that I normally wouldn’t”. Participants therefore would prefer to discuss personal issues with a chatbot and found this to be easier as it is “words on the screen” rather than a face-to-face or voice conversation with a friend or family member. This preference was often due to a fear of judgment. Indeed, one participant who had previously engaged with couples therapy noted they would have rather gone to a chatbot as telling a professional personal information was an uncomfortable experience. As such, the chatbot provided a form of anonymity and safety so they could express themselves and their feelings without fear of judgment.

This neutrality was however noted to be both an advantage and disadvantage. One participant was apprehensive that AI cannot fully understand human emotions so may give advice that is too “black and white, and not taking human nuances into account”. As such, while AI can reach logical solutions based on algorithms, it was argued to run the risk of advice being disconnected from participants' real human emotional context. This contrasts with human advice, whether provided through friends and family, professionals, or even online forums, where there is an emotional understanding or empathy with those seeking support.

Internet Archive

Additionally, participants explored the use of chatbots compared to other online sources such as forums or websites. Chatbots were strongly preferred to websites or forums when seeking relationship advice as they could provide more “personalized” or “tailored”

advice. This personalization allowed participants to feel understood and supported in a way that generic advice from websites or forums could not replicate. Thus although both websites and chatbots can provide somewhat instant responses, it was the personalized response of the chatbot that made it more advantageous. A chatbot was therefore deemed to be “somewhere in between” the impersonal nature of online sources and tailored support offered by professionals.

The technological capabilities of the chatbot were also discussed in comparison with other online forums, talking with friends and family, and a professional therapy session. One suggestion to improve the therapy session was visual rather than text-based information. For example, one participant noted that they would have liked visual representations and explanations. The use of visual aids were argued to enhance comprehension and provide an additional level of support in navigating their relationship issue. Nonetheless, participants typically preferred having text-based information over other modalities. Having text-based information allowed participants “time to stop and contemplate” compared to a verbal conversation. The asynchronous nature of text-based interactions therefore allows participants to engage with the chatbot at their own pace, enabling a deeper exploration of their thoughts and emotions. As such, although the chatbot cannot provide nor understand non-verbal cues, compared to a human therapist, it does allow users to pause, reflect, and engage without the time pressure inherent to typical human-human interactions.

Exceeding Expectations

Many participants noted they were surprised with the chatbot: this fell into two subthemes: *surprise and positive discrepancy*; and *human-likeness*. *Surprise and positive discrepancy* emerged as a theme from the data as many participants found the chatbot provided useful and therapeutic responses in contrast with their expectations. Participants' surprise was noted directly when they were asked to describe their overall experience: “It was

really good, it was much better than I expected”. Additionally the language used by participants highlighted the chatbot positively differed from their expectations, such as saying “actually”: for example, “Yeah it was really good actually”.

One element where the chatbot had exceeded expectations concerned the *human-likeness* of the chatbot. This was often noted by participants who had previous experiences of using, rule-based, chatbots such as online customer service webchats. For example “normally chatbots can be really frustrating” whereas the interactions with ChatGPT “actually felt like I was having a conversation with a real human as opposed to the chatbot”. Additionally, the surprising human-likeness of the chatbot was also noted by those who had used generative AI chatbots such as GPT 3.5. These participants had used chatbots as part of information gathering, or for work as opposed to having a conversation. Thus, some participants were surprised by the therapeutic capabilities and human-likeness of the chatbot, despite prior use, as they had never used it to have a conversation, let alone shared personal thoughts and feelings.

Supporting Neurodivergence

The utility of chatbots for neurodiverse people was discussed both by a participant with autism, and someone who works with neurodiverse people. This theme has been divided into three subthemes: *therapeutic role and confidence building*; *empowerment*; and *misalignment with communication needs*. The relevance of the chatbot for neurodivergence overlaps with the subtheme human-likeness; however, as it also provides unique insights beyond the scope of that subtheme, has been included as a separate theme. The *therapeutic role* and human-like conversational capabilities of ChatGPT was noted by one participant to be particularly useful for neurodiverse people and those who have speech or language disabilities. This participant believed it would enable people to “practice conversations with humans without kind of having to practice it on a human. If they can have practice then it

helps their confidence and helps them to assess certain social situations”. As such, the use of chatbots was believed to provide a platform for neurodiverse individuals to role play and practice conversations in a safe and controlled environment, without the pressure of engaging directly with another person.

This potential utility was also noted by a participant with autism who believed the chatbot would be useful in social situations in the workplace. For example:

I'm struggling to convey to my boss that I feel undervalued, for example. What have you thought? I think that would be a real benefit to people with autism. [The Chatbot] would act as an advocate, if you see what I mean.

For this participant, the use of the chatbot would therefore go beyond conversational skills and therapy to *empower* individuals to navigate complex social dynamics effectively.

Nonetheless, a theme emerged coined *misalignment with communication needs*. This theme highlights that the communication style of the chatbot was at times not perceived as adequately tailored to the participant's communication needs as language used was “very neurotypical in its [the chatbots'] responses rather than tailored to someone with ASD [Autism Spectrum Disorder]”. The participant felt at times within the session the chatbot needed to have a “much more sort of structured and blunt way of putting it [the advice and solutions] forward”. As such the current therapeutic capabilities of the chatbot did not appear to appropriately accommodate and meet the needs of this participant, they noted it would not be suitable for a discussion of romantic or other close interpersonal relationships but rather the workplace interaction previously mentioned.

Discussion

The interviews generated five themes. Three were deductively coded based on results from Study 2: accessible first line treatment; artificial advice for human connection; and internet archive. Another two themes were coded inductively and were not present in Study

1: exceeding expectations and supporting neurodivergence. Overall, many participants noted a change in their appraisal of chatbots, from negative to positive as the chatbot was deemed to be unexpectedly useful and provide therapeutic support. The initial acceptability of the chatbot was influenced by prior use. Those who had prior experience of chatbots appeared to be the most surprised by its therapeutic capabilities as prior, typically rule-based, chatbots had been more generic, less powerful, and had less utility. Therefore, due to these negative prior experiences, participants had been unlikely to use a chatbot with this appraisal only shifting after the interaction. This positive change in attitude highlights potential clinical implications of integrating AI into therapeutic interventions. Our results suggest that despite skepticism, suitable clients could try sessions with AI, prior to having a human therapist if further support is needed. This could have clinical utility in services with long waiting lists or for low risk clients (Gual-Montolio et al., 2022).

There are several strengths and limitations to this research that should be kept in mind. The participant demographics reflect a wide age range and various relationship statuses; however, the ethnic backgrounds and sexual orientations of the participants were not as diverse highlighting the need for further exploration of chatbot attitudes among diverse backgrounds. Furthermore, we did not explicitly collect demographic information on neurodivergence; hence, cannot identify which participants may fall within this category limiting our insights into their attitude and experiences with chatbots. Additionally, although most participants noted they would use chatbots again for advice and support, we have not formally investigated this.

General Discussion

The purpose of the present research was to better understand people's attitudes toward chatbots as a potential avenue for providing relationship support and interventions. In Study 1, we interviewed focus groups of young people with little prior experience of using chatbots

and in Study 2 we interviewed people following a single session relationship intervention with GPT-4. Three main themes overlapped across the two studies: *accessible first line treatment*, *artificial advice for human connection*, and *internet archive*. These themes had a somewhat different flavor across the two studies given the attitudes in Study 1 were more negative compared to attitudes in Study 2. For example, while the focus group participants primarily saw the chatbot as potentially helpful in providing help for simple things or as a first line treatment before seeking professional help, some participants following the interactions also saw the potential of chatbots providing more than that, even being able to stand alone as a treatment option. Participants in Study 2 were also more likely to say the chatbot was empathic and human-like and some participants even said they preferred talking to a chatbot over talking to a therapist. In contrast, participants in Study 1 were more ambivalent about the potential for chatbots to be human-like and empathic and did not see them as being able to replace a human. One potential reason for this may be that Study 1 participants were recruited to a study to discuss healthy relationships and not chatbots specifically whereas Study 2 participants were specifically recruited to a study in which they were asked to discuss a specific relationship issue with a chatbot. However, our results mirror previous studies which have found that attitudes toward chatbot interventions were more positive with increased familiarity and use of the technology (Apolinário-Hagen et al., 2018; Casey et al., 2013; Eichenberg et al., 2013; Vowels & Sever, 2023; Wallin et al., 2016; Weaver et al., 2010).

There were also similarities within the two groups across these themes. First, both groups acknowledged the increased accessibility of treatments using a chatbot. Thus, chatbots may present a viable alternative to face-to-face and traditional online interventions in combining the human-likeness of an AI chatbot with the increased accessibility of online interventions. Second, in both studies, some participants likened the chatbot to already

existing sources of online support such as Google, other websites, and forums. These participants saw the chatbot as an improved form of existing technology that can provide the empathy and understanding which is not accessible through more traditional and less interactive forms of online support. One previous study asked experts to compare chatbots to Google and found that only 15% of experts rated ChatGPT response as less valuable than Google with 40% rating them as more valuable (Van Bulck & Moons, 2023). This shows that, at the very least, chatbots can provide a more improved technology in providing information to the user.

In addition to the shared themes, there were also some differences in themes across the two studies partly due to the differences in the study designs. Participants in Study 1 were much more concerned about the potential issues around privacy and data sharing whereas participants in Study 2 rarely brought this issue up as they were able to interact with the chatbot without providing any identifying details. Privacy and data sharing are a potential issue when using proprietary chatbots where the data are sent to companies and are used for further training of the chatbot (Peris et al., 2023). Furthermore, while in Study 1 the participants reflected their fears and ambivalence about using chatbots in the theme “*are we in a Black Mirror episode?*”, participants in Study 2 overwhelmingly talked about their surprise at how human-like and helpful the chatbot was and often said they would use a chatbot again for similar or other issues (see theme *exceeding expectations*). Finally, some participants in Study 2 also talked about how chatbots could be particularly useful for certain types of support for neurodivergent individuals.

Overall, the results of the two studies suggest that exposure to chatbots can improve people’s attitudes toward them although there were also participants who maintained their negative attitudes toward the chatbot even after the interaction. Our results join previous researchers who have shown that chatbots can provide a promising avenue for mental health

interventions (Abd-Alrazaq et al., 2020; Boucher et al., 2021; Elyoseph & Levkovich, 2023; He et al., 2022; Huq et al., 2022; Jabir et al., 2022; Laranjo et al., 2018; Vaidyam et al., 2019) as well as for relationship support (Troitskaya & Batkhina, 2022; Vowels, 2023; Vowels et al., 2023; Yuksel & Kocaballi, 2022). We extend previous research first by asking young people directly about their attitudes toward using chatbots for relationship support and second by interviewing participants about their attitudes toward chatbots after an actual interaction with a chatbot.

Theoretical and Clinical Implications

Our results provide support for the AIDUA framework (Gursoy et al., 2019). First, we found that when participants perceived the chatbot as more human-like and when they reported having enjoyed the experience with the chatbot, they also reported more positive attitudes toward the chatbot and some reported being willing to, and even intending to, use a chatbot again in the future. In contrast, participants who did not see the chatbot as being able to achieve human-like interactions were less likely to want to engage with a chatbot in the future. We also found that participants engaged in secondary appraisal where they evaluated the costs and benefits of using a chatbot in terms of increased accessibility, perceived usefulness, and sometimes the effort it would take to get the chatbot to provide the results they wanted to. It was also clear that emotions played a large role in the participants' appraisal of the chatbot. For example, the emotional responses from focus group participants were overwhelmingly that of fear, ambivalence, and even disgust as reflected in statements such as "it's stupid", "it's pathetic", and "it's a disaster" when reflecting on people using chatbots for relationship interventions. However, the emotions following the intervention with the chatbot were that of positive surprise, enjoyment, and awe of how human-like the chatbot could be. Overall, these appraisals were reflected in the participants' willingness to use an AI chatbot versus objecting to its use for themselves but also for others. The results

also suggest that it is possible to change people's attitudes by an increased exposure to chatbots. It was, however, not enough to simply show example responses of a chatbot as in the focus groups but it required engaging in an actual session with a chatbot.

The study also has several practical and clinical implications. First, participants who had already used the technology in the focus groups as well as participants in the intervention group who had an interaction reported more positive attitudes. Participants who had prior experience of chatbots appeared to be the most surprised by its therapeutic capabilities as prior, typically rule-based, chatbots had been more generic, less powerful, and had less utility. Therefore, these participants had been unlikely to use a chatbot with this appraisal only shifting after the interaction. This positive change in attitude highlights potential clinical implications of integrating AI into therapeutic interventions. Our results suggest that despite skepticism, suitable clients could try sessions with AI, prior to having a human therapist if further support is needed. For example, clinics could offer access to a chatbot for clients on their waiting list or as the first-line treatment for clients presenting no risk and relatively mild symptoms. This could have clinical utility in services with long waiting lists or for low-risk clients (Gual-Montolio et al., 2022).

Second, an interesting theme arose from the interviews where some participants talked about the potential utility of chatbots for neurodivergent individuals. For example, one participant who stated that he was autistic said that he would find it very useful to have access to a chatbot in social situations that could help him respond in a socially appropriate manner for example at work or at funerals. One participant working with neurodivergent individuals also felt that chatbots could provide a platform to practice conversations in a safe and controlled environment, without the pressure of engaging directly with another person. However, our study did not specifically focus on neurodivergent individuals and thus further

research is needed to better understand how neurodivergent individuals would view using AI-enhanced technology to support them in social situations or in preparing for social situations.

Strengths, Limitations, and Future Directions

Our research had several strengths including the use of qualitative data that allowed for rich and nuanced information on participants' attitudes and allowed us to further prompt participants when we wanted to better understand their attitudes toward chatbots. We also had a sample of participants who had a real session with a chatbot and were thus better able to describe their experiences and their attitudes were informed by actual usage.

However, the study also had several limitations that should be considered when interpreting the findings. First, while the qualitative data can provide more detail in responses, we cannot speak to the overall numbers of people who are open to using chatbots and who are not. Thus, future quantitative research is needed to establish overall intentions to use chatbots for relationship interventions. This research exists for other types of chatbot interventions such as for mental health (Gbollie et al., 2023; Koulouri et al., 2022; Sweeney et al., 2021) but we are not aware of other studies that have quantitatively examined attitudes toward relationship intervention chatbots.

Second, participants in the focus groups found it difficult to discuss chatbots' utility in relationship interventions because of the lack of prior experience with chatbots. Because of this, we provided the last three focus groups with some real example responses and in Study 2 we had participants engage with a chatbot but we may have had richer data in the focus groups if we had provided more examples or had participants interact with a chatbot before the focus group.

Third, in Study 2, we did not ask participants' attitudes toward chatbots prior to having them engage with a chatbot. Although anecdotally many participants said that after trying the chatbot they would be open to using it again and some said the chatbot did much

better than they would have expected, we do not know whether they already held more positive attitudes as they had already self-selected into a study in which they interacted with a chatbot and were thus likely to be at least more curious than an average participants might be. Additionally, the two studies were conducted in two different populations in two different countries and thus the attitudes toward chatbots could have reflected cultural or sample level differences rather than being due to the exposure of the chatbot. However, young people would be expected to have more positive attitudes toward technology, not less, and the young people with more prior experience of using the technology did report more positive attitudes toward it. In contrast, participants in the second study often expressed their surprise at how good the chatbot was in its interactions. This leads us to believe that the exposure to the chatbot was at least in part responsible for the more positive attitudes in the second study but without a direct comparison in the same kind of sample we cannot know for sure. Future research could examine attitudes before and after an interaction with a chatbot comparing the participants to a group without an interaction to understand whether an interaction does indeed change people's attitudes toward a chatbot. Additionally, we live in a time where chatbots are just becoming more commonplace but are still rarely used for conversations. It would be interesting to follow-up participants over time to see how people's attitudes might change as the technology becomes more common and they will have more exposure to it. Based on the AIDUA framework, social influence should improve willingness to engage with the technology (Gursoy et al., 2019) and thus as people become more accustomed to the technology and have others around them use the technology, this may lead them to have more positive attitudes and intent toward the use of AI technologies.

Finally, we did not explicitly ask participants about potential neurodivergence but some participants spoke about the potential utility of chatbots for neurodivergent individuals. We were unable to investigate this possibility in more detail due to the small self-identified

sample of neurodivergent individuals but given its potential clinical utility for this population, it would be interesting to interview this population to better understand their potential needs and how AI technologies could provide support.

Conclusion

Our findings add to the current literature by examining people's attitudes toward receiving relationship support and interventions from a chatbot across two studies. Participants' attitudes ranged from very negative including fear and disgust to very positive including perceiving the chatbot as equivalent to a human. This research not only underscores the evolving role of AI like ChatGPT in augmenting therapeutic practices but also opens new avenues for integrating advanced chatbot technologies in relationship support, paving the way for more personalized, accessible, and effective relationship interventions in the digital age.

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