

Perceptions of chatbot therapists

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Chatbots may help us scale provision of Cognitive Behavioural Therapy

Approximately one third of people experience mental health problems in their lifetime [1]. Cognitive Behavioural Therapy (CBT) is an often effective treatment option. However, access to treatment often entails long wait lists, high cost, and logistical difficulties (e.g., time and transport requirements). To provide scalable treatment, several promising studies have demonstrated clinical efficacy of internet-based CBT [2]. Recent research [3] suggests chatbots may yield positive clinical outcomes.

But what do therapy users think?

While clinical efficacy is critical, there are other factors, such as enjoyment and conversational smoothness [4], that contribute to a good therapy session. We piloted a comparative study of therapy sessions following the interaction of 10 participants with human therapists versus a chatbot (simulated using a Wizard of Oz protocol), explicitly focusing on session perception.

Study design

10 participants with self-identified sub-clinical stress symptoms were assigned either a human or a “chatbot” therapist for internet-based CBT with a text-only chat interface. The chatbot is a Wizard of Oz setup: both groups interact with a trained therapist, but the chatbot group are informed they’re talking with an experimental chatbot. Participants take part in two 30-minute sessions, 1 week apart. We assess perception of the therapy sessions using a standardised structured questionnaire [4] and through open-ended interview.

Wizard of Oz design

Due to the highly structured nature of CBT, our “chatbot” is a script outlining a standard CBT session, with template variables are inserted at key points. During a chatbot therapy session, the chatbot is “driven” by a trained psychotherapist and a researcher, co-selecting the most appropriate answer from the script at a given time. The freedom of the chatbot ‘wizard’ is carefully limited. Several catch-all responses can be used when a participant cannot be answered with a response from the script.

CHATBOT

Do you think that there is a place where we can change your behaviour?

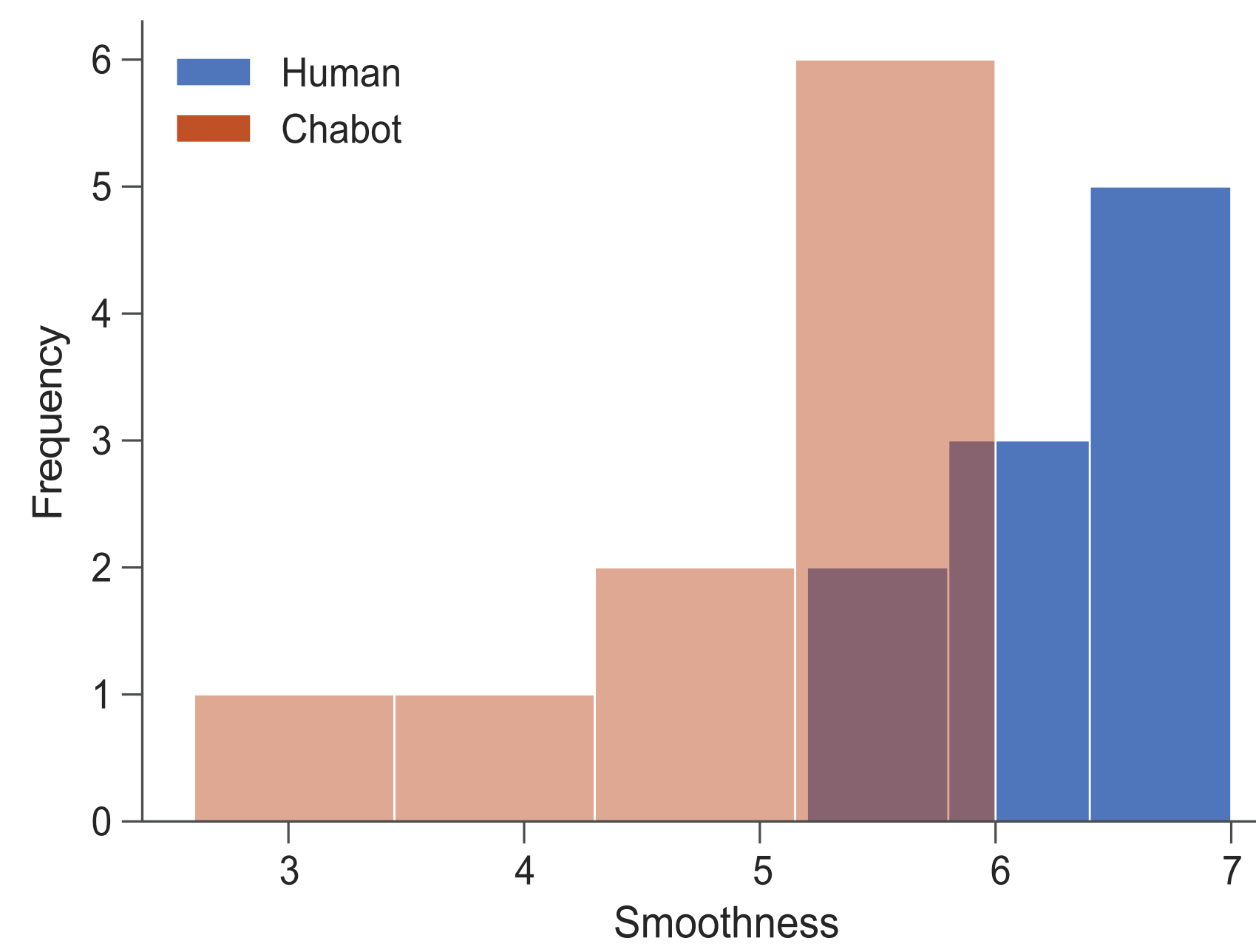
USER

I could try **going to bed at a fixed time each night.**

CHATBOT

That’s a great aim, **Jimmy. Going to bed at a fixed time each night** would be a great way to try to reach this goal.

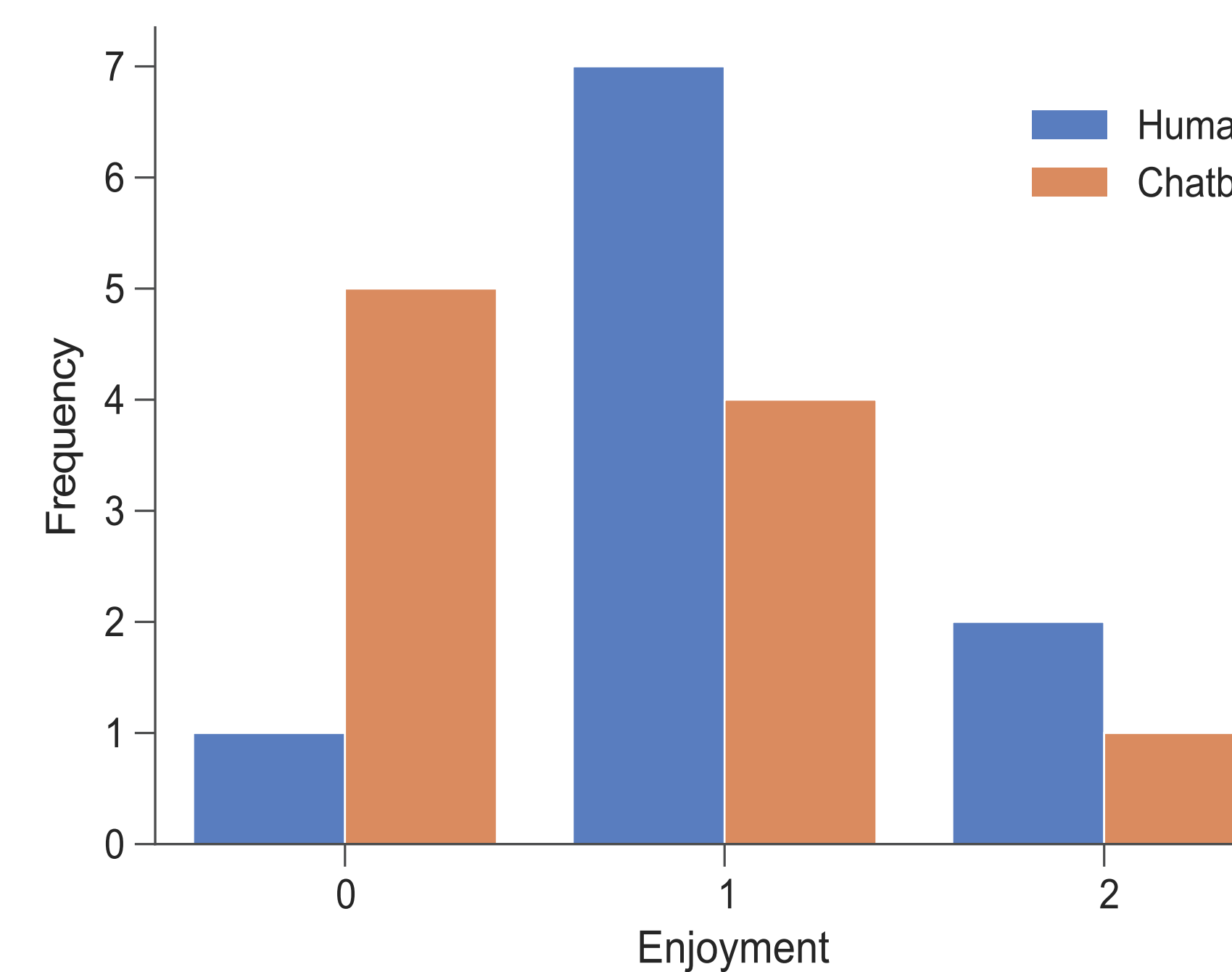
Chatbot conversations are less smooth



“It was **repetition** of what I said, not an **expansion** of what I said”

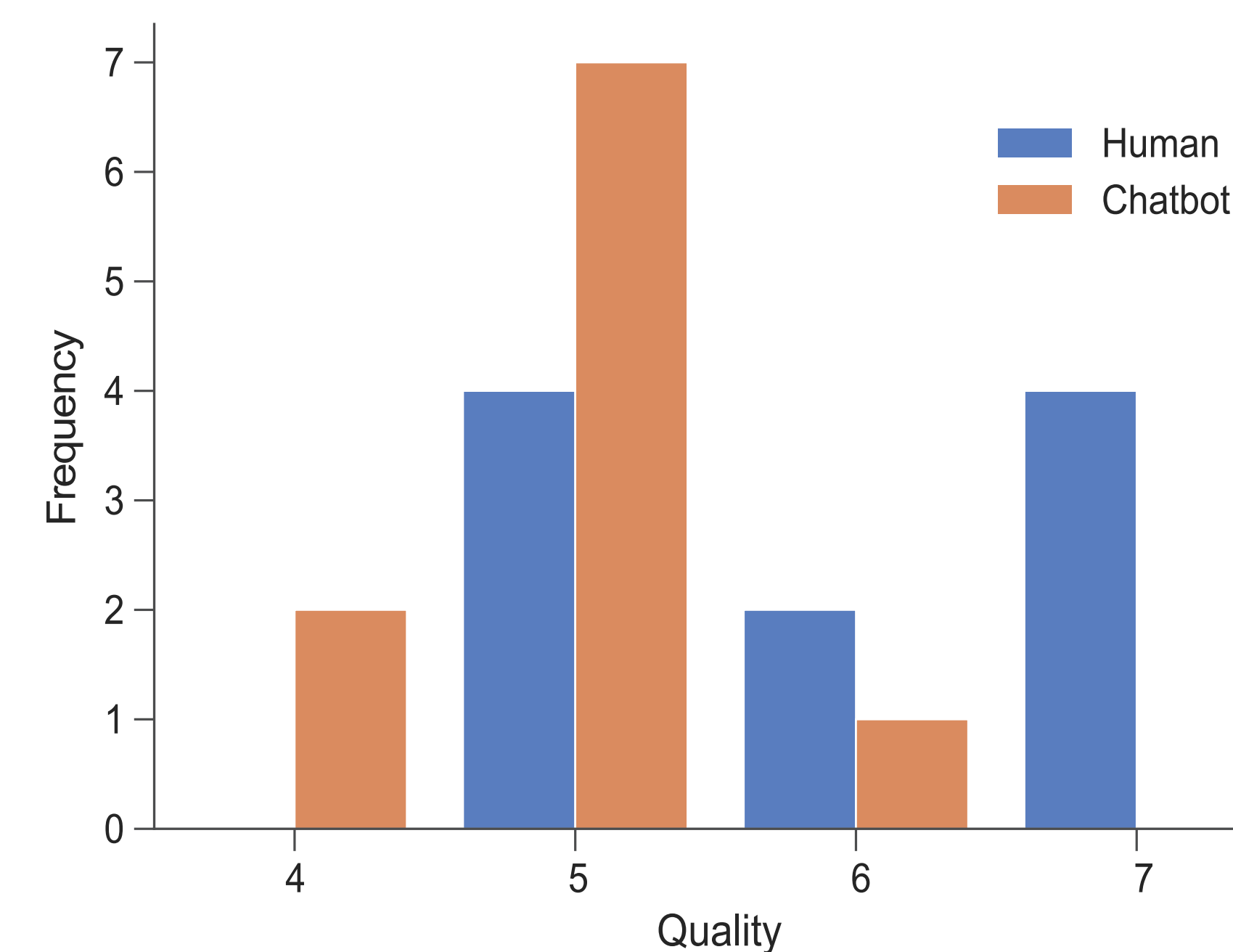
“It suggested keeping a thought journal, but then it **didn’t really expand on what it meant.**”

Chatbot sessions are less enjoyable



“I felt **standard answers** come back... anybody could say that”

Chatbot sessions are less useful



“When you tell something to someone, it’s better, because **they might have gone through something similar...** there’s no sense that the robot **cares or understands or empathises**”

Conclusions

We find evidence to suggest that when compared against a human therapist control, participants find chatbot-provided therapy less useful, less enjoyable, and their conversations less smooth (a key dimension of a positively-regarded therapy session). Our findings suggest that research into chatbots for cognitive behavioural therapy would be more effective when directly addressing these drawbacks.

Further reading: Bell, S., Wood, C., & Sarkar, A. (2019). Perceptions of Chatbot Therapists. *CHI’19 Extended Abstracts*.

References

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