Reimagining Support: Exploring Autistic Individuals' Visions for AI in Coping with Negative Self-Talk

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Negative self-talk (NST)

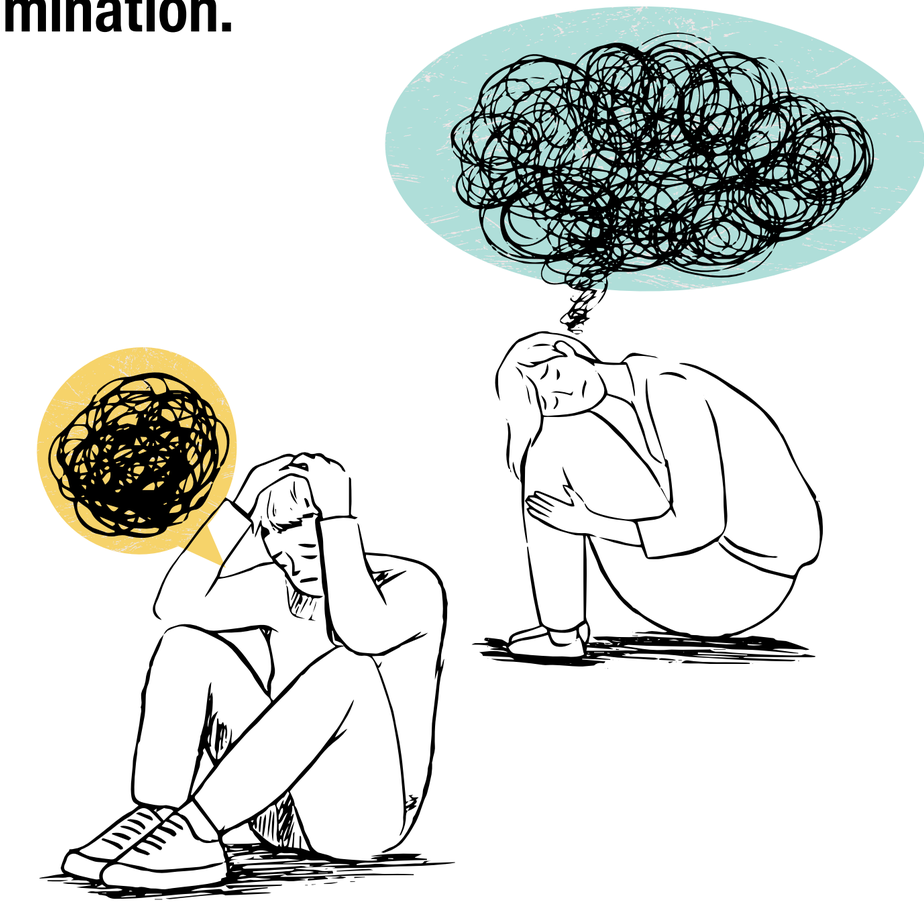
NST refers inner voice that often manifests as self-doubt, disappointment, or critical thoughts about oneself.

"I'm no good"

"I'm so disappointed in myself"

Negative self-talk (NST)

These thoughts are **repetitive, intrusive, and lead to rumination.**



Negative self-talk (NST)

Rumination or NST is a significant predictor of

- **anxiety**
- **depression**
- **physiological distress**

Compared to non-autistic peers, autistic individuals

- engage in **more negative repetitive thinking**
- are statistically **more likely to have co-occurring conditions**

Traditional therapy might not always be effective

Challenges in articulating feelings and thoughts

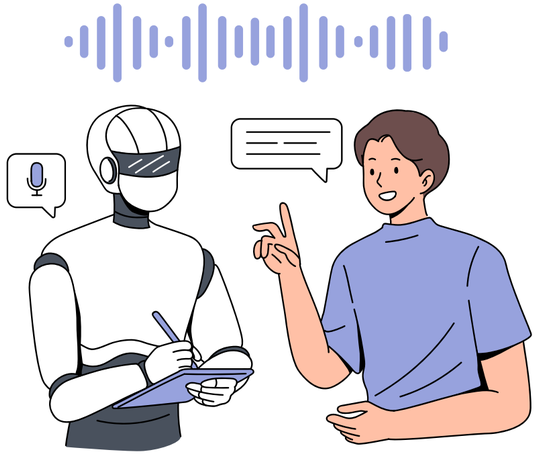
Cost

Limited number of practitioners specialized in autism

Many autistic individuals are using LLMs to receive support with day-to-day tasks.

Interpersonal communication

Talking buddy



Seeking mental health guidance

Research Goals

1. Understand autistic individuals' experiences with NST and their coping strategies

2. Explore how autistic individuals envision AI helping them cope with NST and evaluate practitioners' perspectives on these envisioned supports

3. Analyze how autistic individuals prompt LLMs about their NST and practitioners' evaluations of LLM responses

Survey study

With 200 autistic adults experiencing NST, who were recruited through SPARK (Simons Foundation Powering Autism Research for Knowledge).

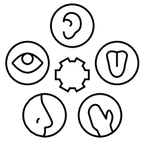
Survey study

We asked autistic participants (n= 200) about

1. Experiences with NST and their coping mechanisms
2. Envisioned support from AI for coping with NST
3. Interaction preferences (conversation structure, tone, and modality)
4. Concerns about using AI in the mental health context
5. Participants' prompts to LLM about their NST

Practitioner Evaluation

Interviews with practitioners who work closely with autistic individuals



Occupational therapist (OT)

Cognitive Behavioral Therapist (CBT), specialized in Acceptance and Commitment Therapy (ACT)

Community-Based Support Services Provider (CSS)

Practitioner Evaluation

Interview sessions focused on evaluating:

- Participants' envisions and preferences for AI for support in coping with NST
- Practitioners' perspectives on AI's potential to support their current therapeutic practices
- Responses of LLMs (ChatGPT and Claude) to participants' prompts

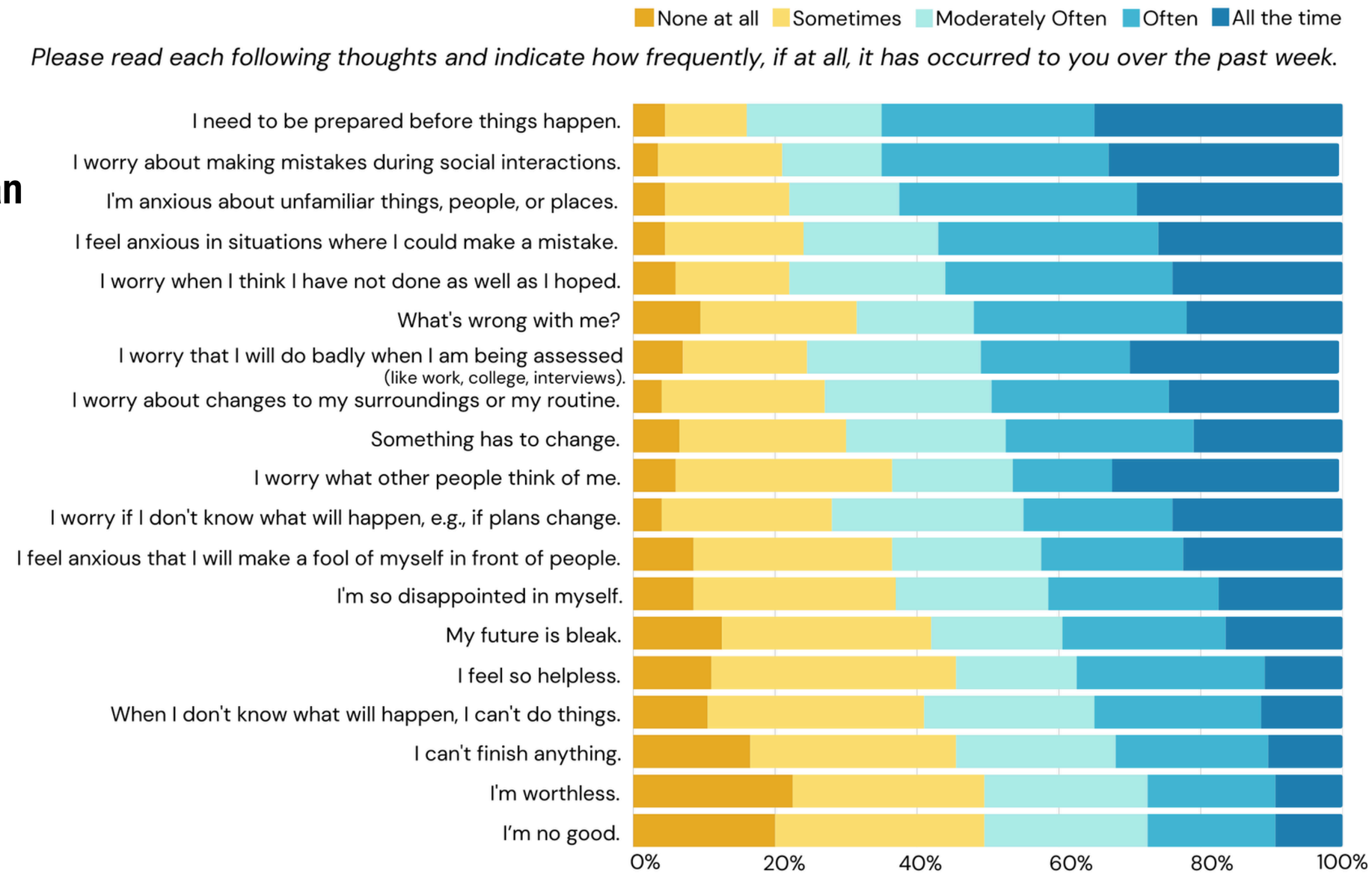
Experiences with NST

We measured how often participants experience NST using two validated psychological scales:

- Negative Automatic Thought Questionnaire (ATQ-N)
- Anxiety Scale for Autism-Adults (ASA-A)

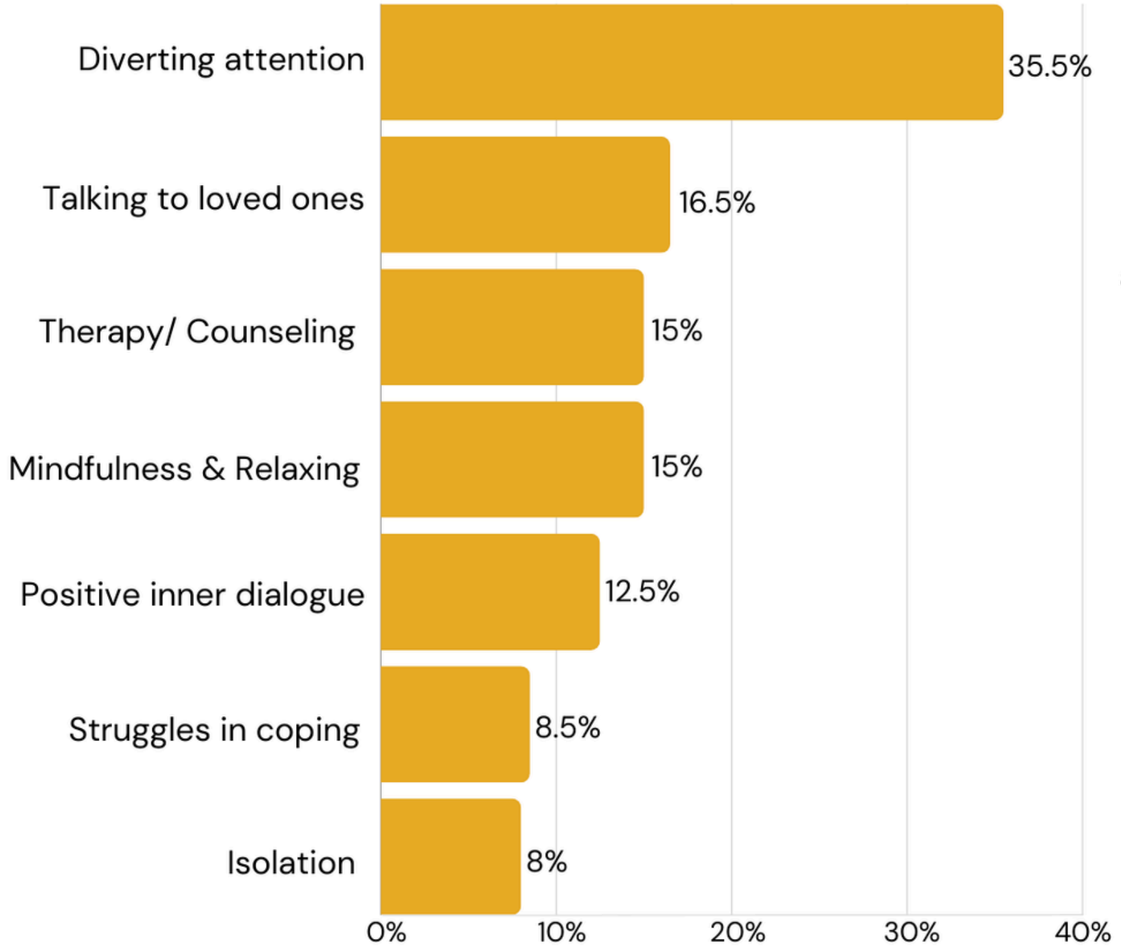
Experiences with NST

On average, participants experience NST **more than moderately often** (Mean: 3.25/5).



ATQ-N: Netemeyer, 2002; Anxiety Scale for Autism-Adults (ASA-A): Rodgers et al., 2020

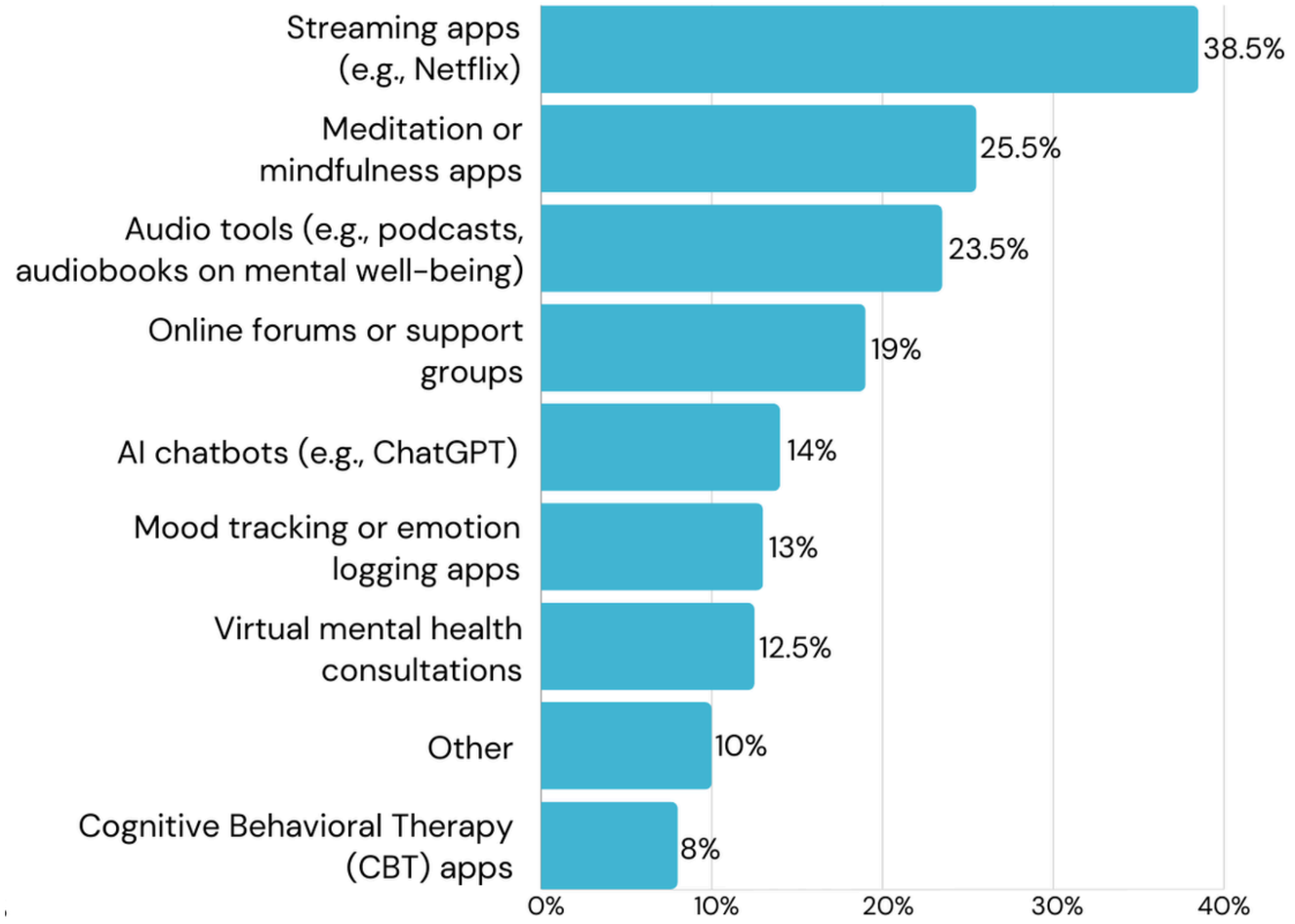
Coping strategies



The most common coping strategies among participants are **distractions**, **talking to friends/ family or therapists**, and **mindfulness practices**.

Coping strategies

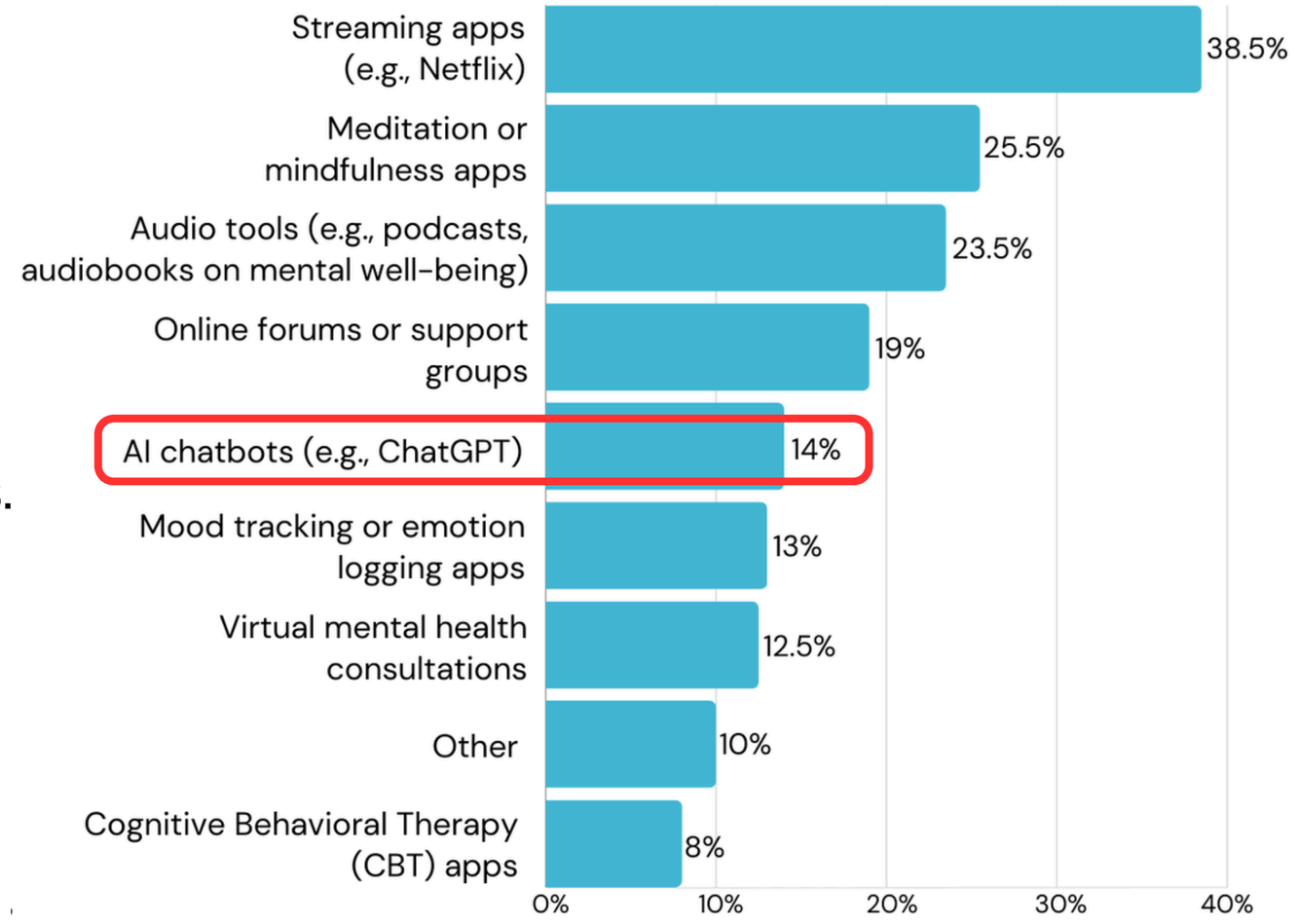
Participants use technologies like **streaming services**, **meditation/mindfulness apps**, and **audio tools** to help cope with NST.



Coping strategies

Participants use technologies like **streaming services**, **meditation/mindfulness apps**, and **audio tools** to help cope with NST.

14% of participants mentioned using AI chatbots.

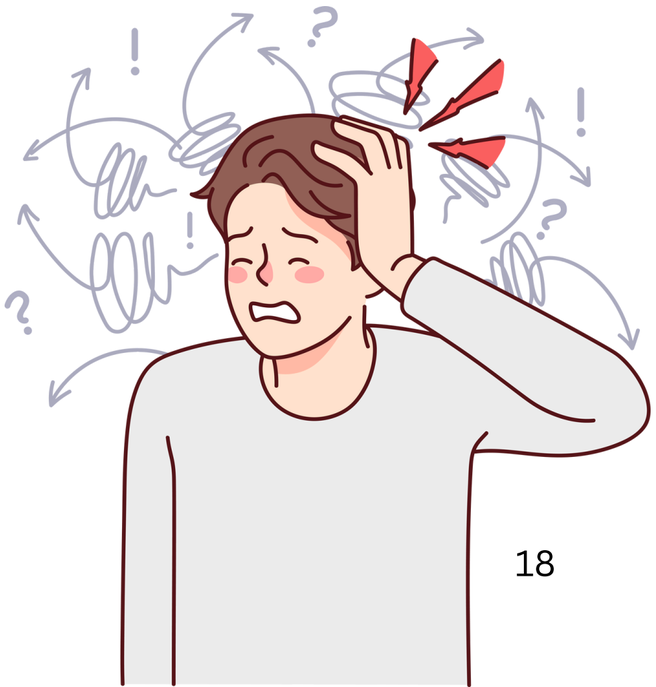


Coping strategies

Many participants do not have coping mechanisms that actually work.

“Nothing works”

“I don't know how to cope”



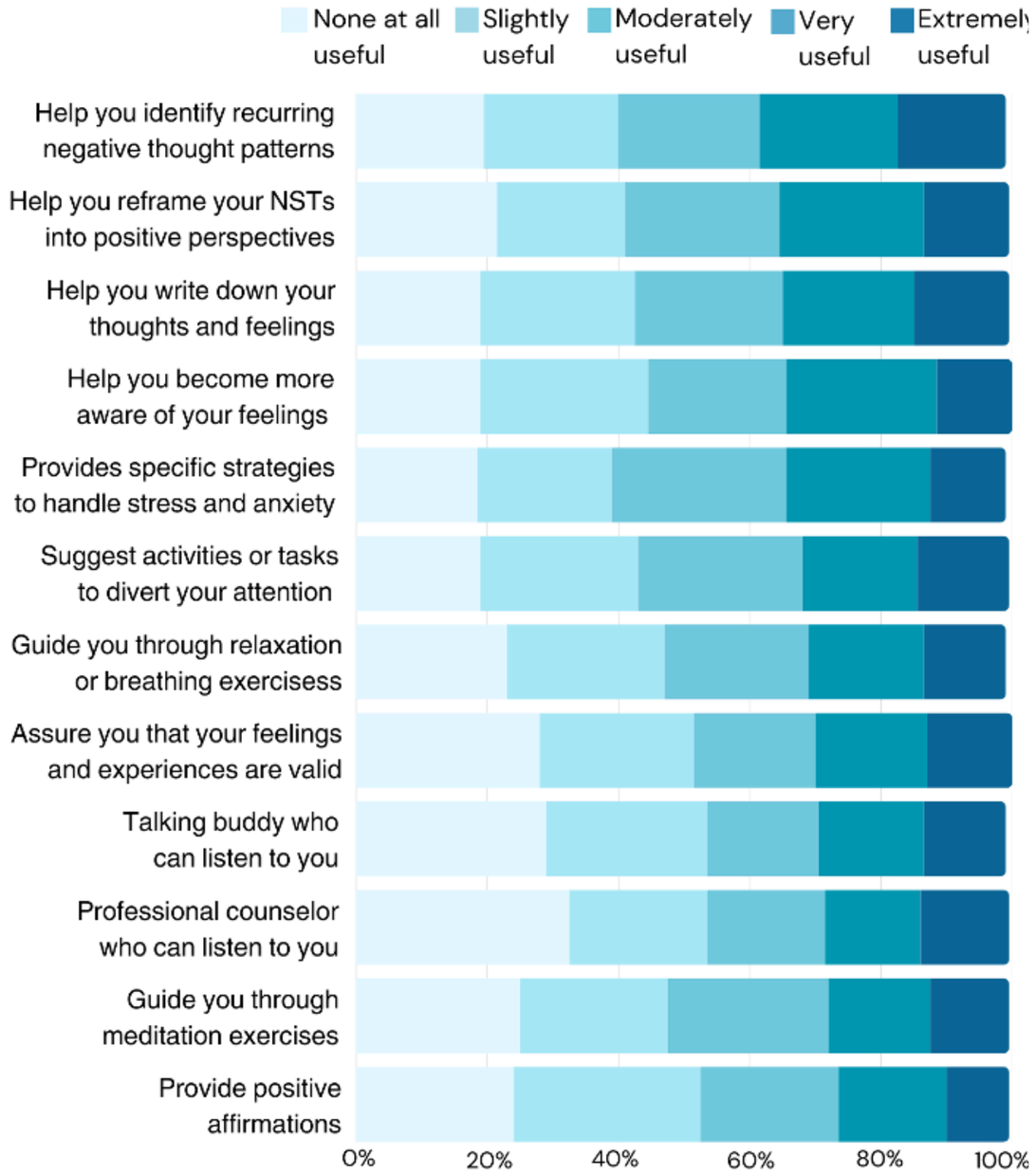
Envisioned support from AI

We asked participants

> **If AI could provide the following support mechanisms regarding the thought that affects you the most, how useful would you find each type of support?**

Envisioned support from AI

Participants find AI useful for **identifying and reframing NSTs**, **assisting with journaling**, and providing **strategies to manage stress and anxiety**.



Envisioned support from AI

AI as a **conversational partner** to better understand & express their thoughts and feelings.

“Helping figure out what emotion it is. It may help to bring it up and talk about it with others easily if I know what to call it.”

Envisioned support from AI

AI as an **additional support system during and between therapy sessions**

“Send a note to my therapist about when or how often something is happening.”

“Attaching a name to those feelings would help to express them effectively to my therapist.”

“It can guide through some techniques learned in therapy like CBT practices or color therapy.”

Envisioned support from AI

AI provides **personalized positive affirmations** and **reassurances**

“Telling me that everything will be ok, this storm shall pass and the sun will shine again.”

“It is going to get better; these challenges are temporary.
You have got this!”

Interaction Preferences

Conversation structure

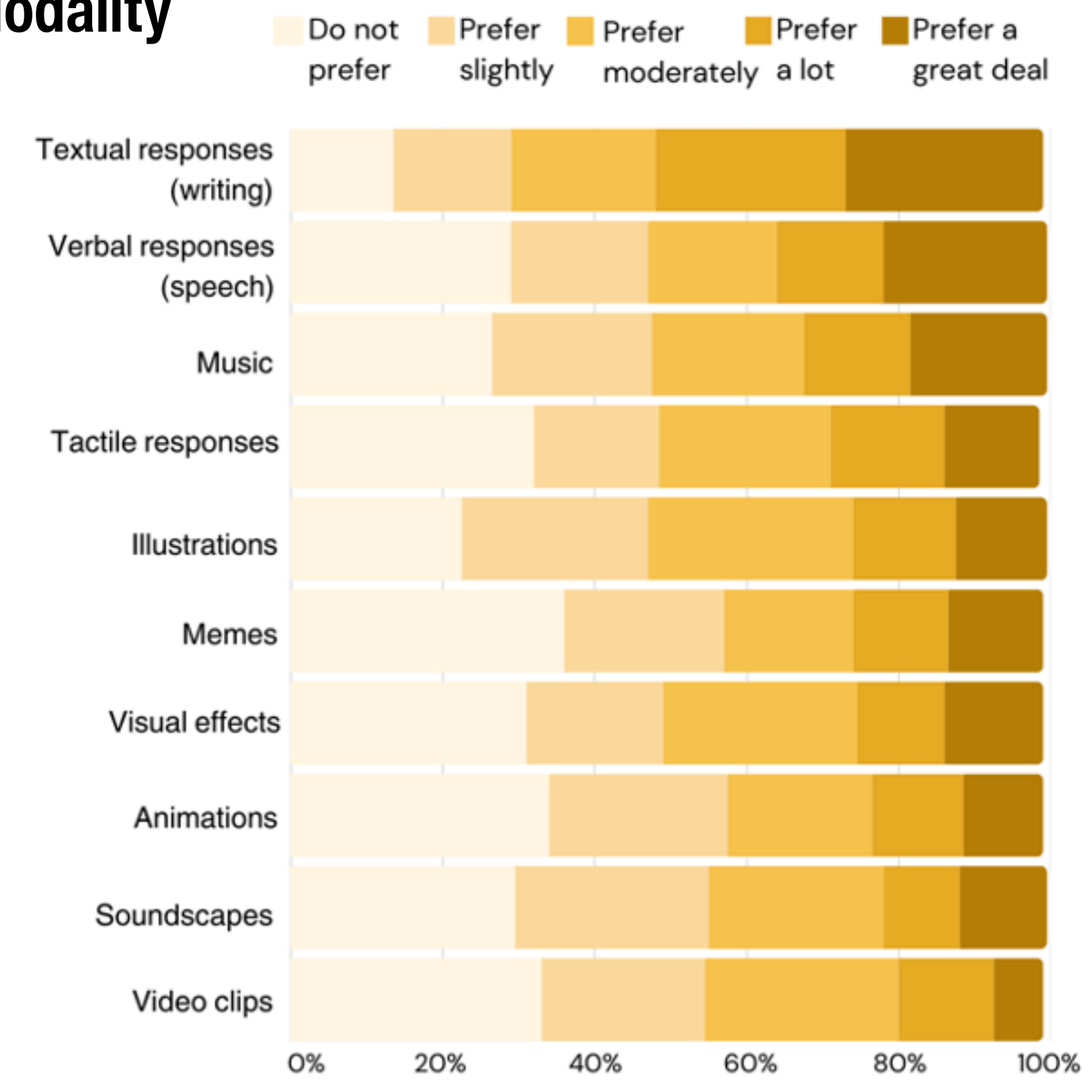
Participants prefer AI to engage using **lists of suggestions**, **continuous dialogue**, and **targeted questions**.

Tone

Participants prefer **factual**, **empathetic**, and **friendly** tones from AI but not funny.

Interaction Preferences

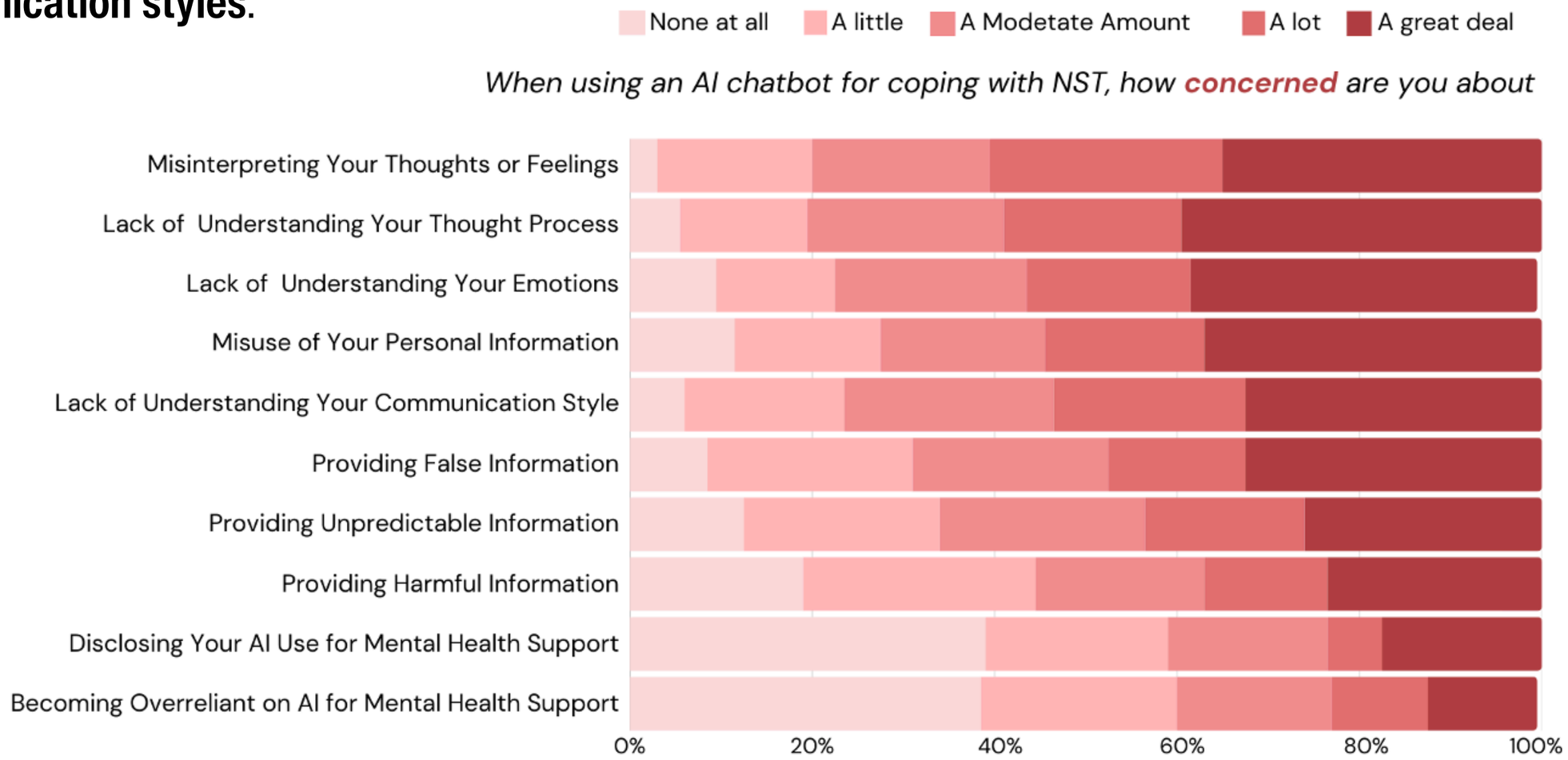
Modality



While textual interaction was most preferred, many participants expressed interest in **speech**, **music**, **tactile responses**, and **visual effects**.

Concerns

Participants are concerned that AI might **misunderstand or fail to understand their thoughts, emotions, and communication styles**.



Practitioners' view on participants' visions

Participants' preferences are aligned with practitioners' current therapeutic practices.

CBT/ACT Practitioner

"Tracking thoughts and linking them to behaviors is a core component of CBT. AI can help with this process by automating the identification and thought patterns."

Practitioners' view on participants' visions

AI has a potential as a **complementary tool for therapeutic progress.**

OT Practitioner

"AI can act as a built-in support system to help continue to support throughout the week whether through positive self-talk or reminders of what was covered in sessions. It might even act like a cheat sheet, helping clients continue practicing what they learned before the next session."

CBT/ACT Practitioner

For the challenges with completing homeworks,

"Technology could significantly increase engagement, whether it is by monitoring or practicing new skills."

Practitioner's evaluation of LLM responses

Practitioners feedback on LLM responses revealed key issues.

- Vague and Abstract Expressions
- Long List of Choices and Jargon-Heavy Expressions
- Lack of Actionable Guidance

Practitioner's evaluation of LLM responses

Vague and Abstract Expressions

P18

Hey, I am struggling with hope. I don't see a way out of my problems.

ChatGPT

I'm really sorry to hear that you're feeling this way, but I'm glad you're reaching out. Sometimes, when problems seem overwhelming, it can be hard to see a way out. If you're comfortable sharing more, I'm here to listen and help in any way I can. Even in the darkest moments, small steps forward are possible, and you don't have to face it alone.

Practitioner's evaluation of LLM responses

Long List of Choices and Jargon-Heavy Expressions

P57

Can you please help me with being anxious about unfamiliar things?

Claude

I understand that feeling anxious about unfamiliar things can be challenging. Here are some strategies that may help you manage this anxiety:

- **Gradual exposure:** Start with small, manageable steps to expose yourself to new experiences. This can help build confidence over time.
- **Reframe your thoughts:** Try to view unfamiliar situations as opportunities for growth rather than threats.
- **Practice relaxation techniques:** Deep breathing, meditation, or progressive muscle relaxation can help calm your nerves.
- **Educate yourself:** Learning more about the unfamiliar situation can help reduce uncertainty and anxiety.
- **Develop a support system:** Share your feelings with trusted friends or family members who can offer encouragement.
- **Visualize Success:** Imagine yourself successfully navigating the unfamiliar situation.
- ...

Practitioner's evaluation of LLM responses

Lack of Actionable Guidance

P101

I am struggling and need help

ChatGPT

I'm sorry to hear that you're struggling. How can I support you right now? Whether it's something specific or just needing to talk things through, I'm here for you.

AI has the potential to support autistic individuals in coping with negative self-talk, but **it should complement, not replace, human support.**

Participants raised concerns that these tools **fail to capture their unique thought processes**, **emotions**, and **communication styles**.

Practitioners noted the lack of clarity and precision in LLM responses.

LLMs predominantly reflect neurotypical perspectives

Addressing neurotypical biases requires **systemic change**, not just customized tools.

- **Neurotypical assumptions remain embedded** in data selection, training, and response generation.

Addressing these biases requires collaboration

- **Actively involving neurodivergent individuals at every stage** —data selection, training, and response design.

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