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Stroke-specific Virtual Assistant as a Companion in Recovery

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Background

- Due to their disabilities, stroke survivors often feel isolated, and struggle to find information on their specific stroke-related questions, when clinicians may not always be available.
- Tracking changes in stroke outcomes, daily living, physical and psychological state can guide rehabilitation and a personalised treatment plan.

Aim

- This EU-funded collaborative project (RES-Q+) aims to develop a **virtual assistant (VA)** capable of robust assessment of stroke recovery, providing information, motivational support and companionship to stroke survivors.

Method

 **40 participants** including stroke survivors and caregivers across **35 sessions** (16 interviews, 16 VA testing sessions, and 3 group workshops)

Materials

- VA by **ALANA AI**: app on a smartphone device / browser
- Stroke-specific modified Rankin Scale (mRS), short-form Nottingham Extended Activities of Daily Living (sfNeADL), short-form Stroke Impact Scale (sfSIS),
- Patient Health Questionnaire (PHQ9) to capture mood
- Audio recording equipment

Procedure

Stage 1: In **workshops**, participants roleplayed as the VA and user, discussing features of a potential stroke VA.

Stage 2: We administered PROMs in **interviews** with stroke survivors one on one. Participants also engaged in unstructured conversation with a clinician to ask questions about stroke.

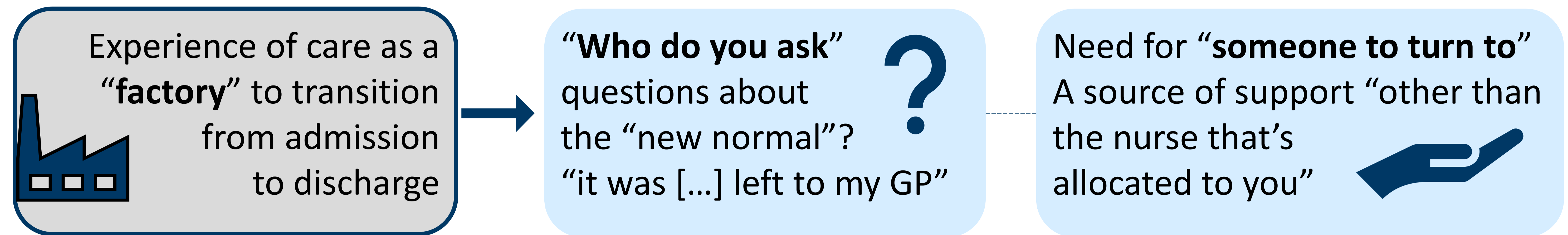
Stage 3: Human-led interviews including interactions with the VA and semi-structured debrief. The same PROMs were presented to all participants but in different question formats. Input for the VA was via typing or using the microphone feature.

Stage 4: Verbatim transcripts were checked and coded, capturing **themes** describing perceptions of the VA.

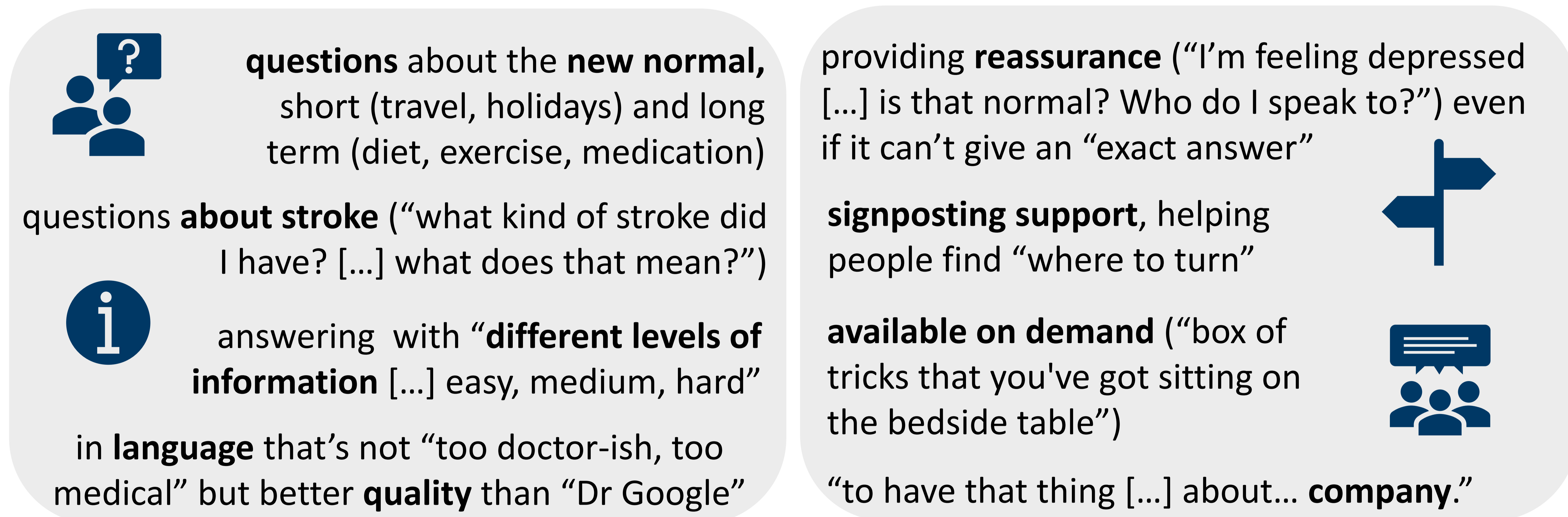
Thematic Analysis Results

Theme 1: Lack of support post discharge

The resource strain placed on emergency health services led to experiences of lack of support after discharge.

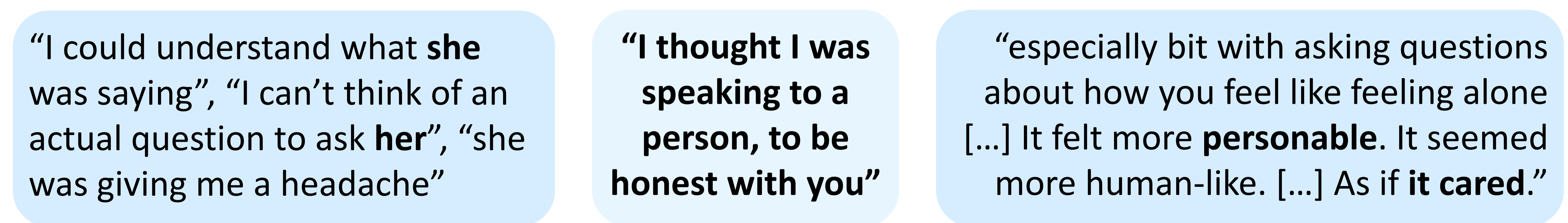


Theme 2: the VA as a source of immediate information & companionship

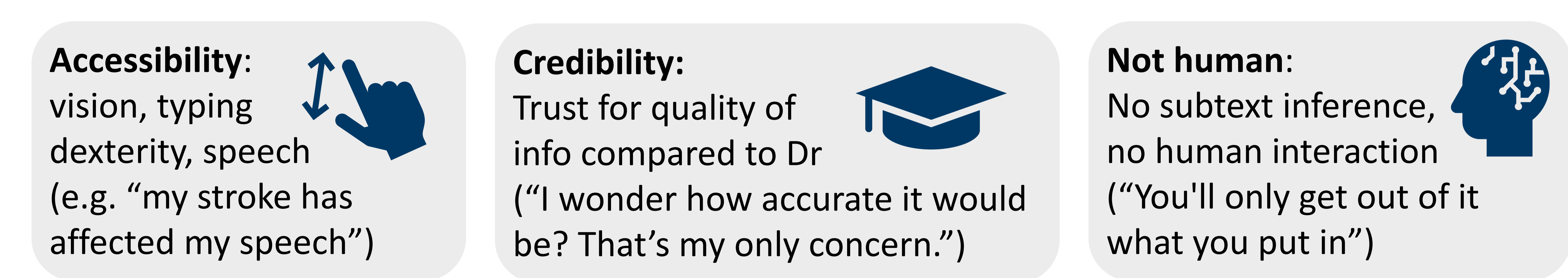


Theme 3: Perception of the VA as animate

Participants who interacted with the VA prototype either personified the VA or attributed to it sentient actions.



Theme 4: Potential Limitations



Future Directions

- VA validated and launched in **other languages** than English
- Connect with the **RES-Q registry** to record wellbeing check-in results and retrieve clinical information to provide personalised advice
- Develop more **emotionally intelligent** conversational features to promote potential for companionship

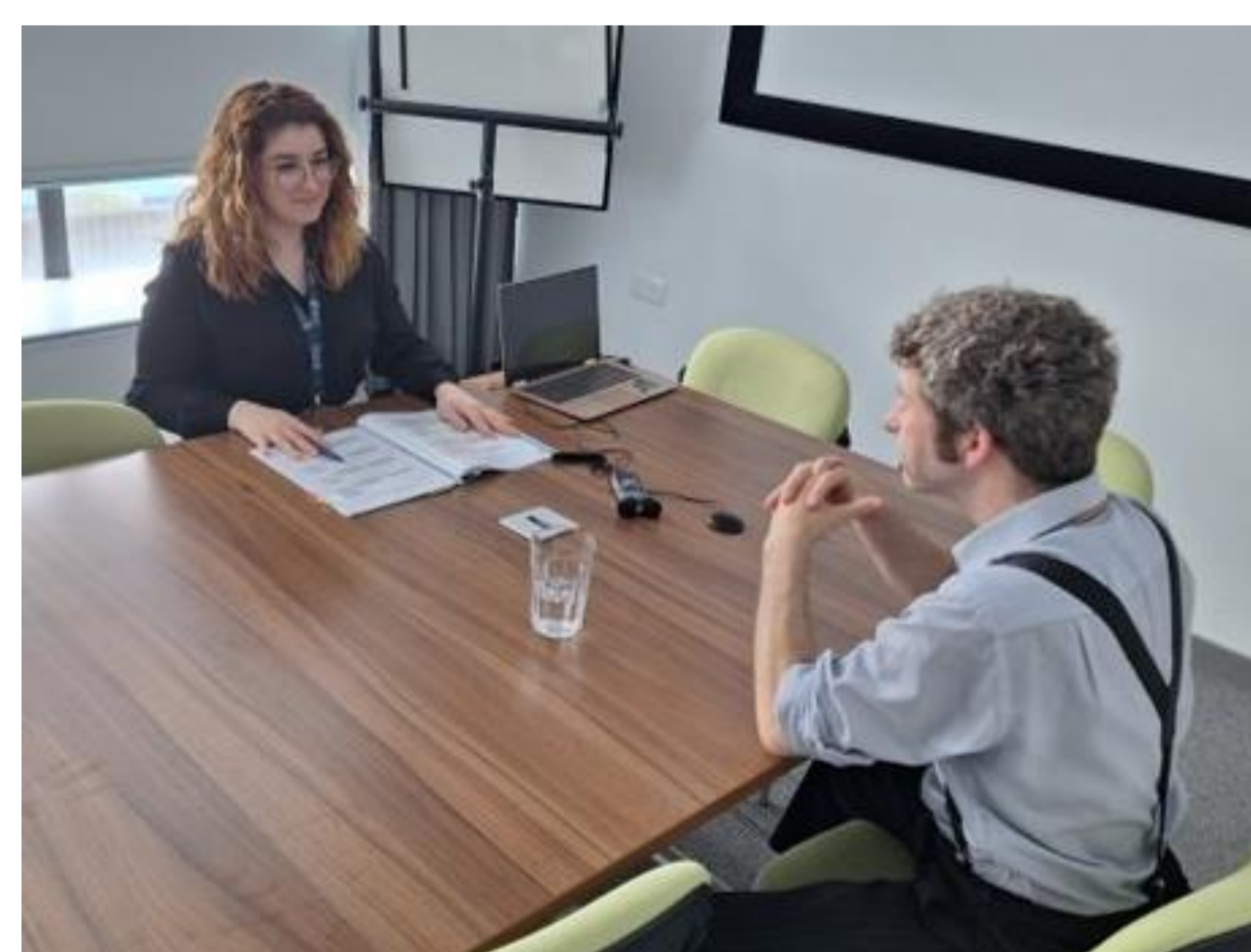


Figure 2. Human interview setup.

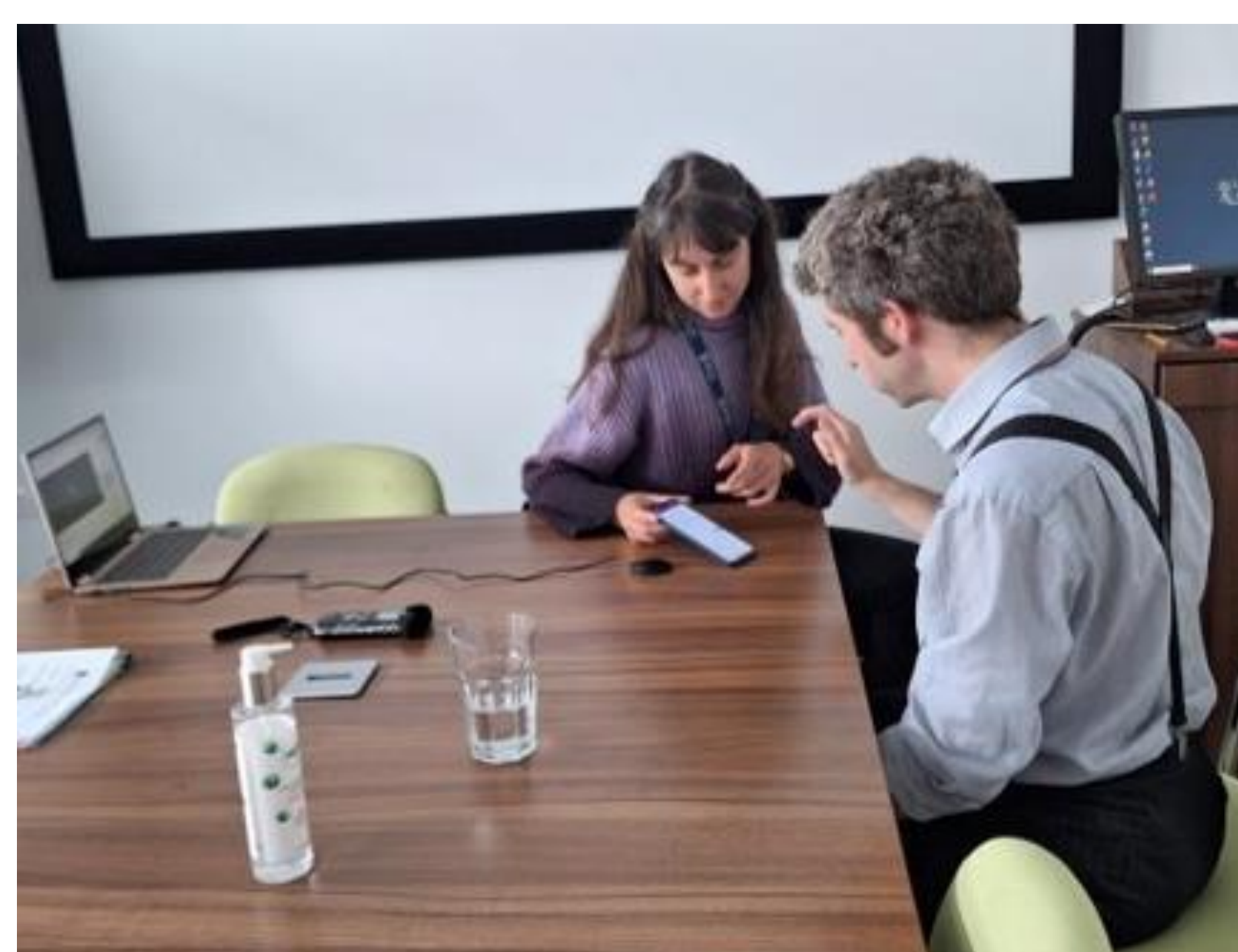


Figure 3. VA test session setup.

