

Background

60% to 80% of people with Parkinson's Disease (PD) experience cognitive impairment (CI) impacting QoL.¹ Few evidence-based treatments exist for PD-related CI. Activating the locus coeruleus noradrenergic (LC-NA) system may improve cognitive function in PD.² Occipital Nerve Stimulation (ONS), a promising new intervention, activates the LC-NA through non-invasive transcranial electrical stimulation of the occipital nerve.² Understanding knowledge, attitudes and perspectives of people with PD-CI regarding non-drug interventions such as ONS is critical.

Design

A 32 item cross-sectional self-reported survey questionnaire adapted online on Microsoft Forms (GDPR compliant, Trinity Approved software) was shared with participants with lived experience of PD.

Settings and Participants

The study included members of charities Parkinson's Association Ireland (PAI) and Lewy Body Dementia Ireland (LBDI) (n=50).

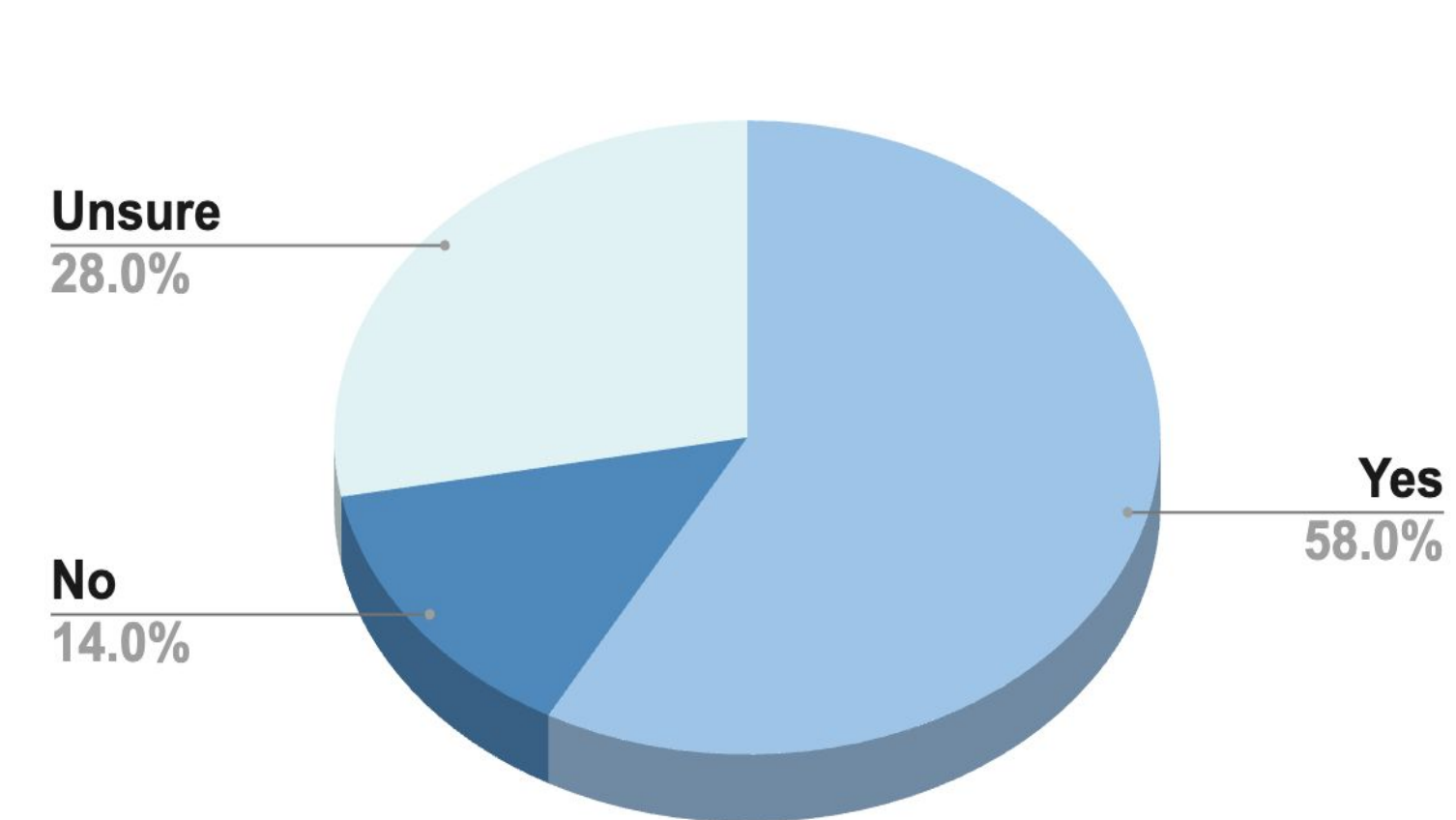
Method

Participants were surveyed using Likert-style questions to gather their opinions and preferences regarding non-drug treatments such as Occipital Nerve Stimulation (ONS). Information about ONS was provided through an informational poster and video attached to the survey. The survey consisted of five main sections:

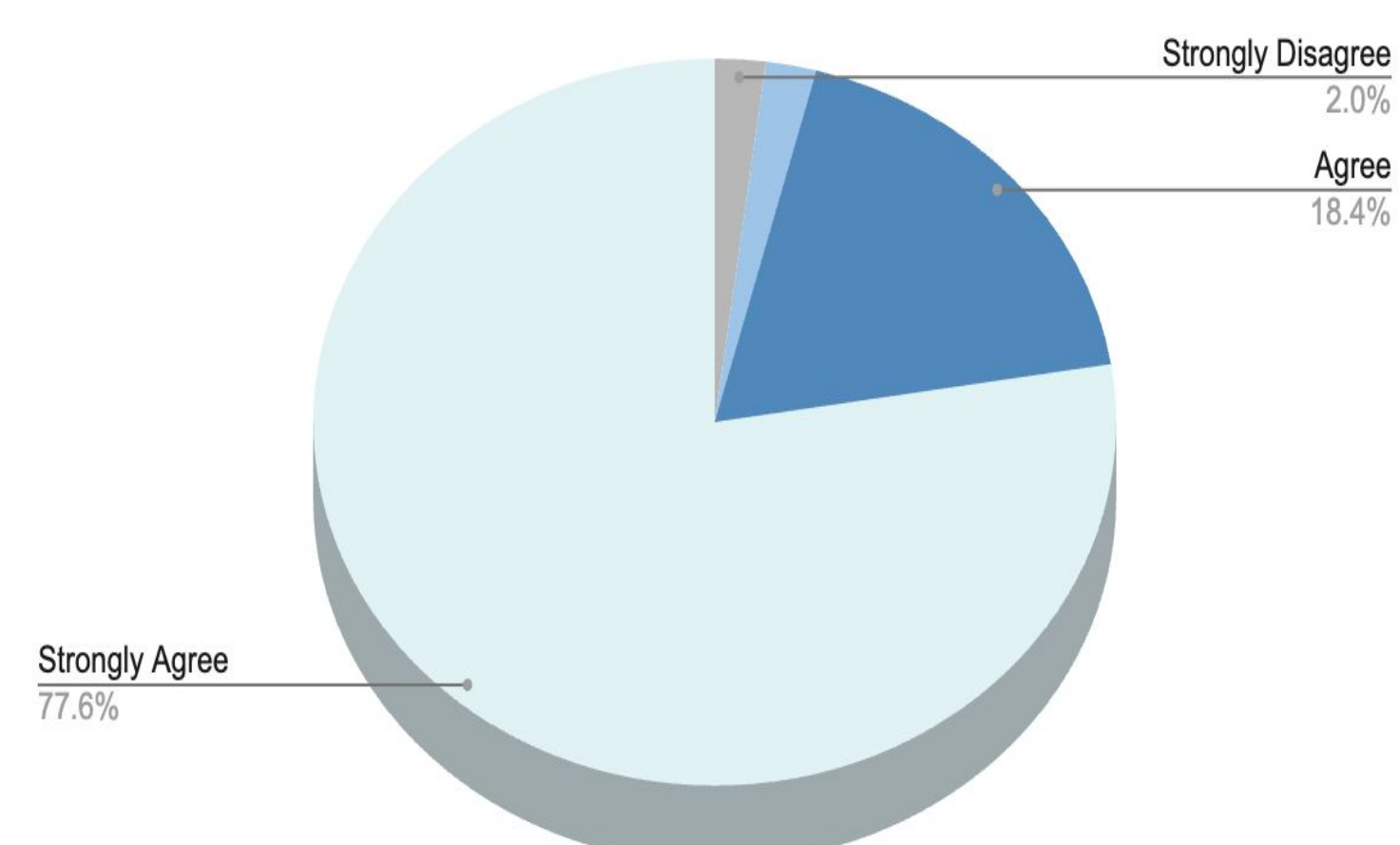
1. Demographic Details
2. Health Information
3. Views and Knowledge of Cognition
4. Views and Knowledge of Treatments for Cognition in Parkinson's
5. Views and Knowledge on Occipital Nerve Stimulation Device.

The final section focused on obtaining informed consent from the participants. Data collection ran from November 2022 to March 2023, and IBM SPSS Statistics Version 27 was used for statistical analysis.

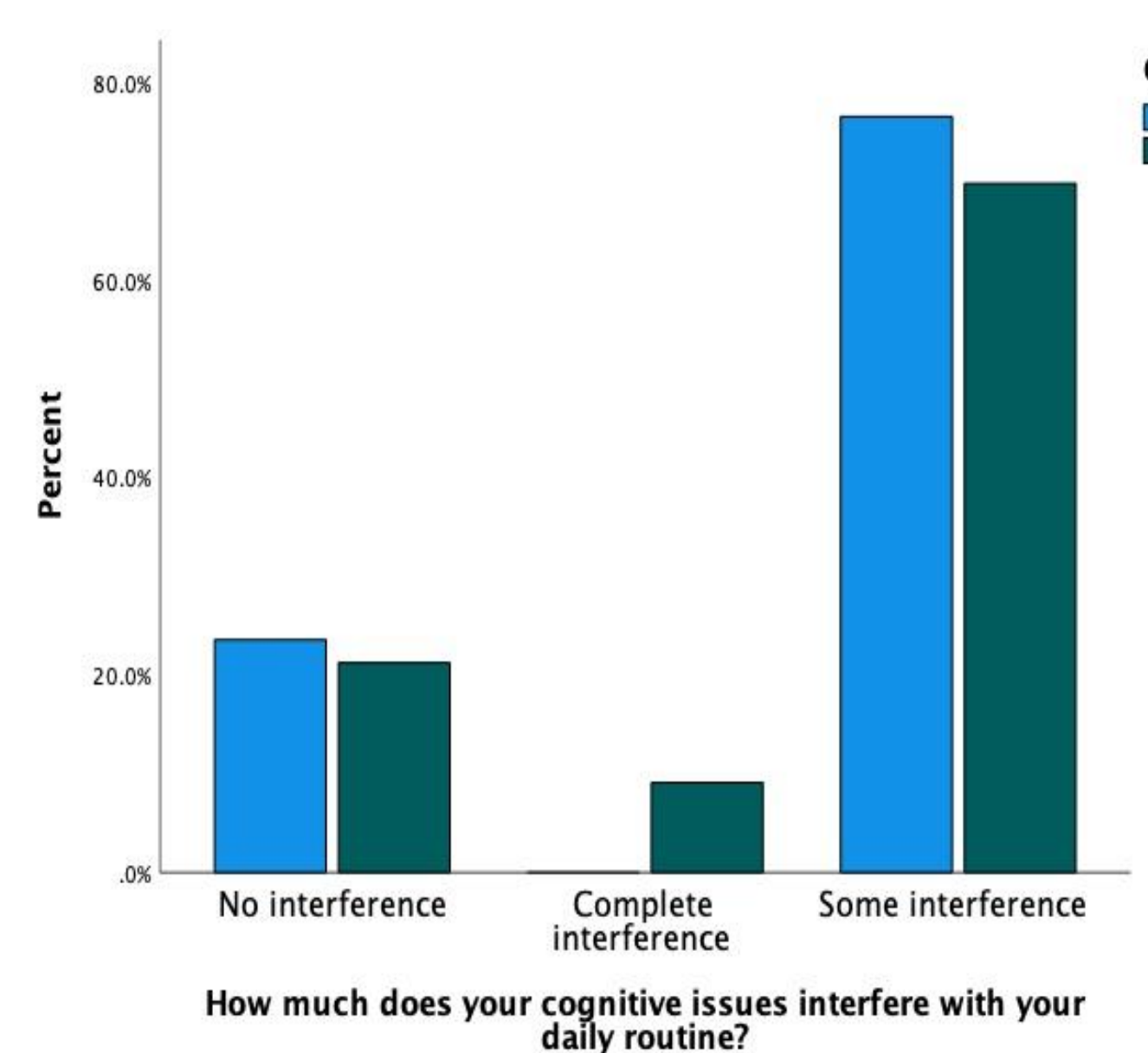
Results



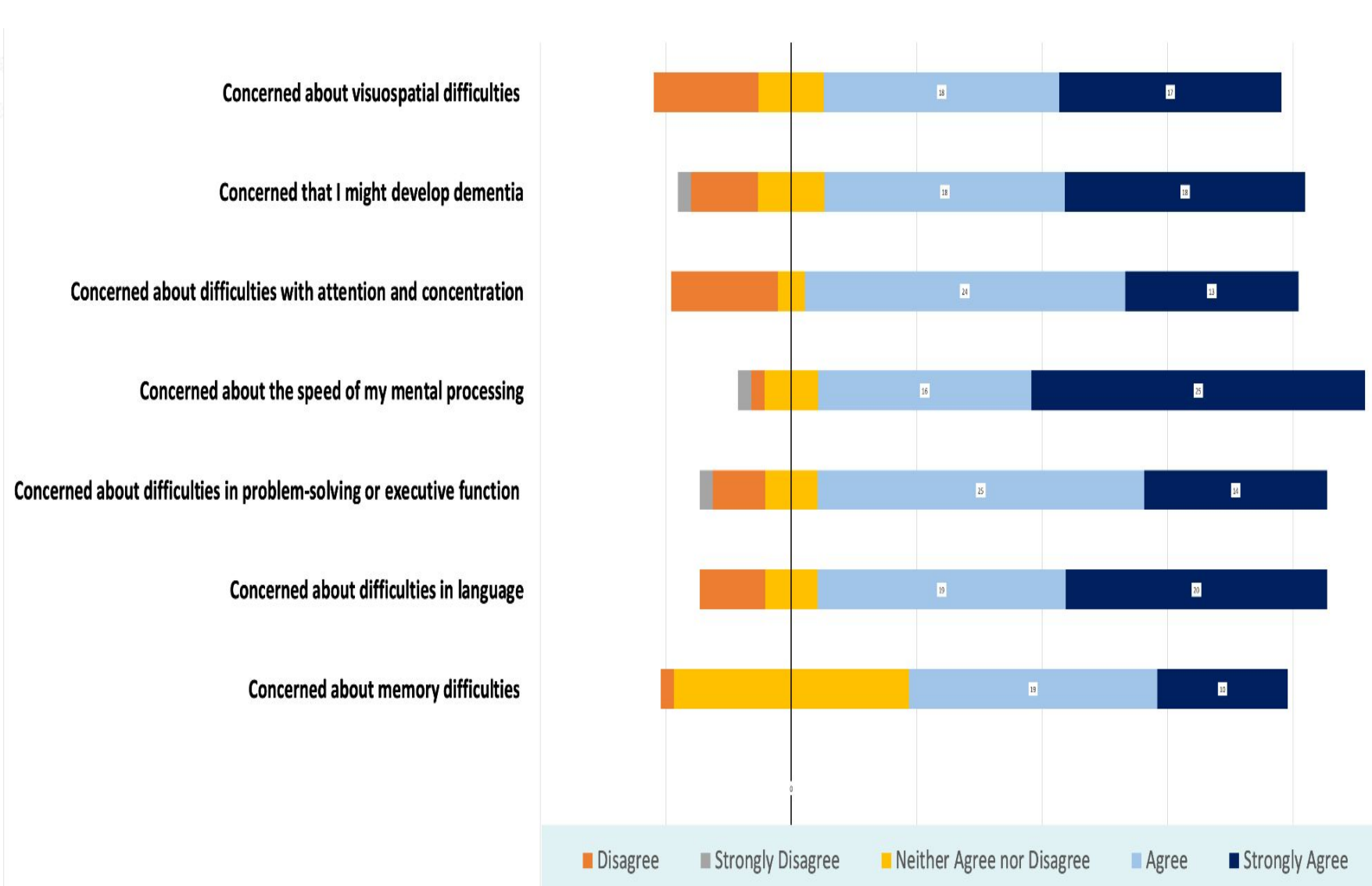
Graph 1. % of Participants Who have Experienced Cognitive Changes since Diagnosis of PD



Graph 2. % of Participants Who Believe Cognitive Impairment is an Important Issue to Address in PD.



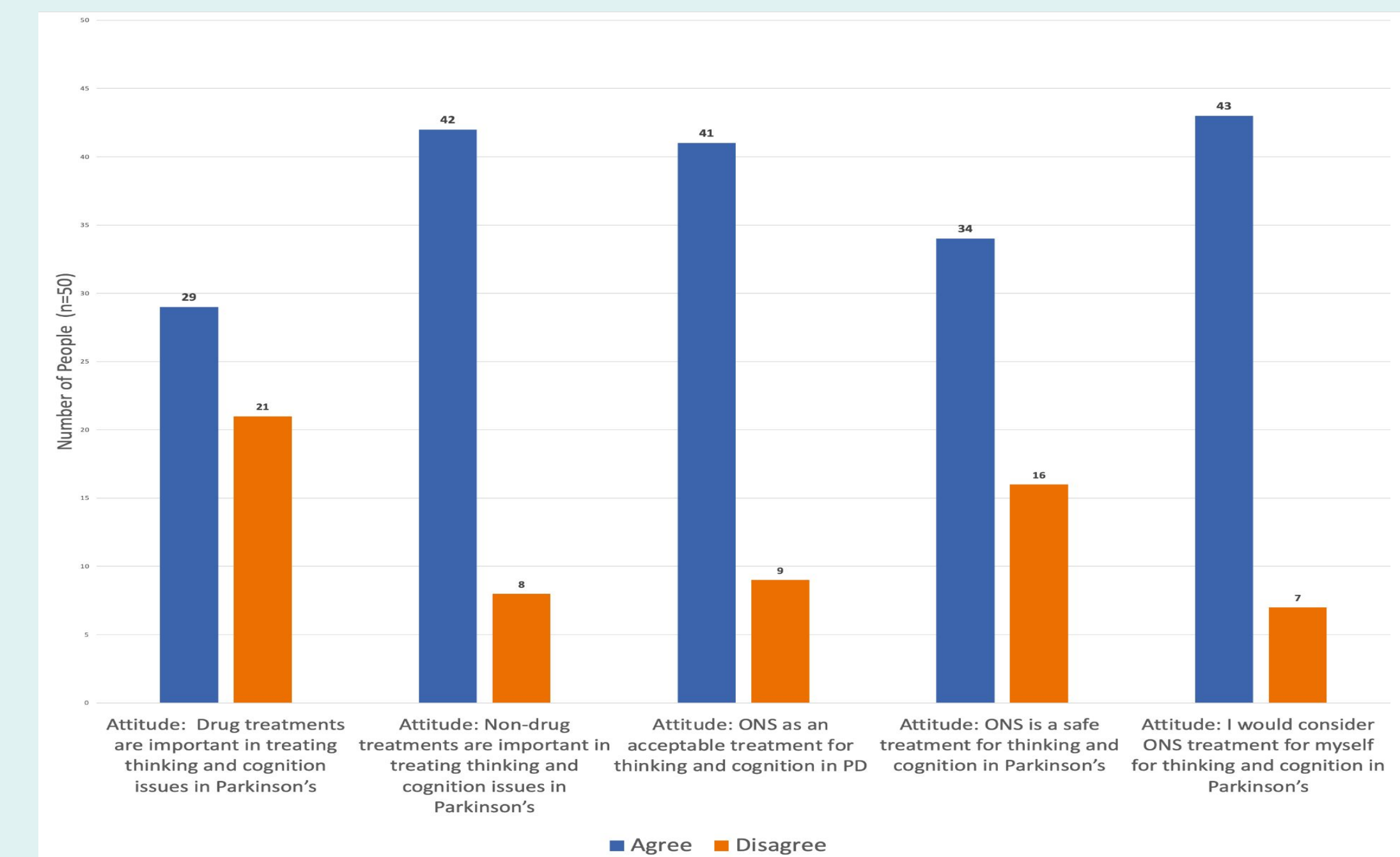
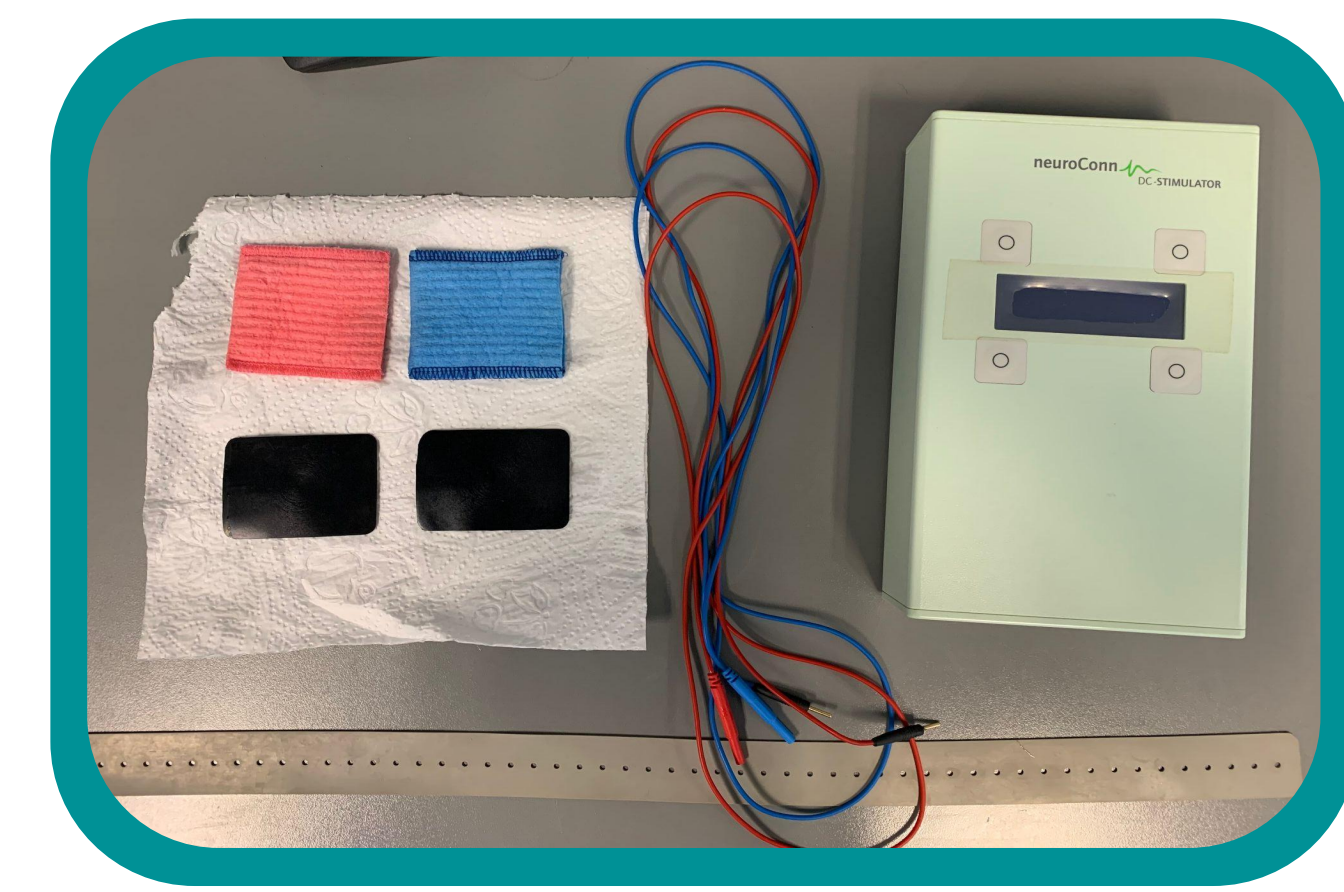
Graph 3. Self-reported Impact of Cognitive Issues on Daily Routine of Participants (%)



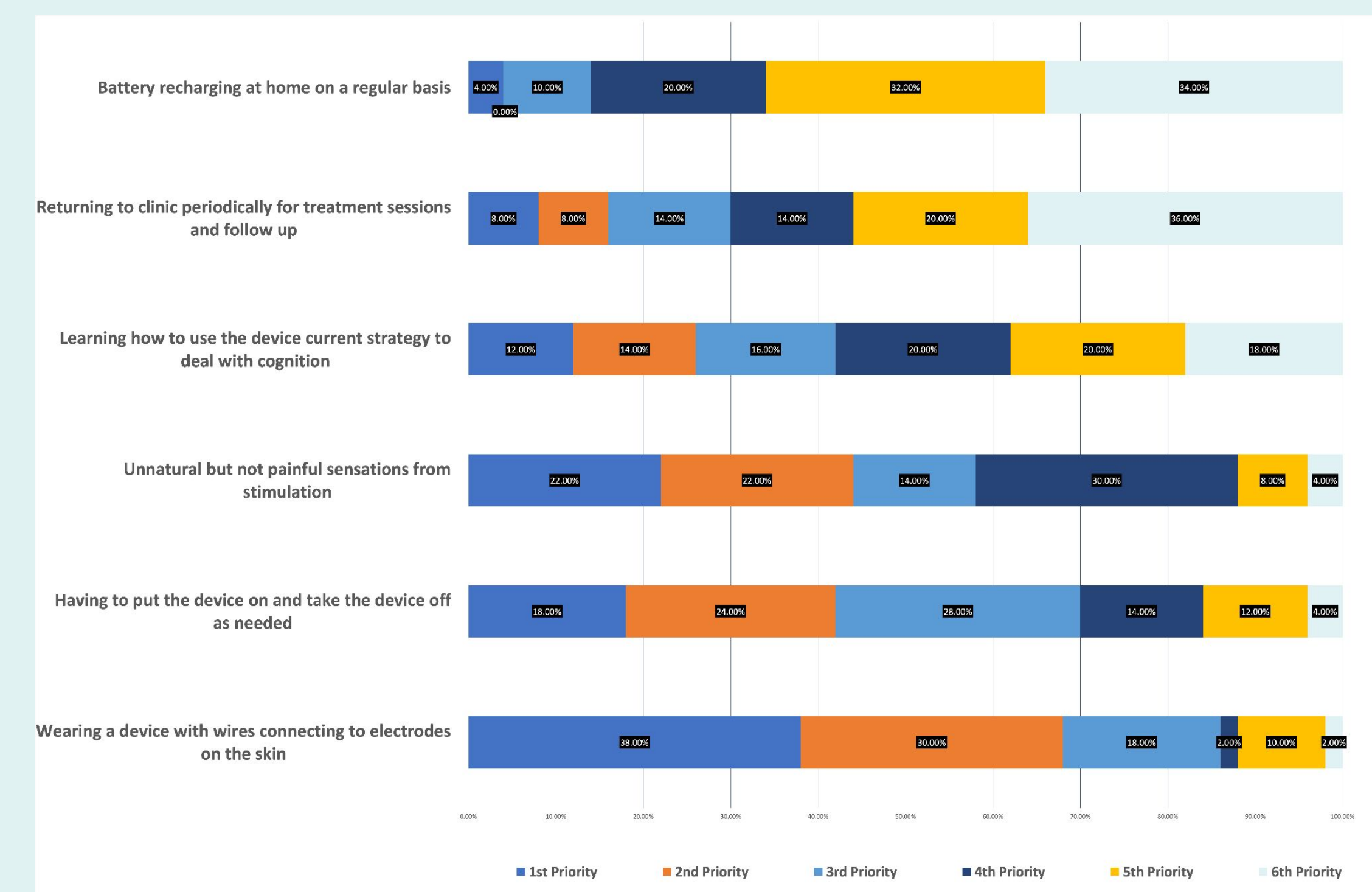
Graph 4. Ranking Cognitive Domains based on Level of Concern Among Participants

Objectives

1. Ascertain attitudes, awareness and perceived needs for non-pharmacological interventions using a self-report survey of people with lived experience of PD & Lewy Body Disease (LBD)
2. Explore the acceptability and feasibility of occipital nerve stimulation as a potential therapeutic modality for individuals with PD, as determined by their opinions and preferences.



Graph 5. Attitudes of Participants towards Non-Drug Treatments and ONS for Cognition in PD



Graph 6. Risks or Inconveniences of ONS Rated by Level of Concern (priority) to Participants

Respondents were curious about the the following domains pertaining to Occipital Nerve Stimulation

1. **Timing of treatment:** "How long would the device be left on for each day?"
2. **Electrical Impulse:** "What is the size of the currents and voltages involved in my care?"
3. **Interaction between current treatment and potential therapies:** "What is the interaction like between the ONS procedure and my current medicine regime?"
4. **Adverse effects:** "Is there any risk of overstimulation?"
5. **Effect on treatment on activities of daily living:** "How much time is involved and do you need to stay still during the treatment or after the treatment or could you get on with chores eg housework or cooking?"

Figure 1. Next Steps: Qualitative Overview of Participants' Queries when Opting for ONS

Conclusion

- 96% of participants in the study are concerned about cognitive decline linked to Parkinson's disease (PD), especially related to memory problems and dementia.
- 87.5% of participants recognize the importance of addressing cognitive impairment in PD and are open to non-pharmacological interventions, with 86% willing to try ONS as treatment for cognition.
- Factors influencing the decision to opt for non-pharmacological interventions like ONS include concerns about electrode usage, the perception of an 'unnatural' sensory experience, and the need for consistent device application and removal.
- There is a notable interest among PD patients in exploring non-pharmacological and emerging non-invasive neuromodulatory treatments like ONS.
- The study identifies areas where participants are seeking further information and guidance.
- This data will be useful in shaping the design of future studies aimed at investigating the therapeutic potential of ONS for individuals with PD.