

## Background

### Previous Research

- Over **half of all individuals with Parkinson's disease (PD)** will develop **hypophonia**, a speech symptom characterized by low speech intensity that negatively impacts speech intelligibility (S. G. Adams & Dykstra, 2009; Logemann et al., 1978).
- While behavioral treatments such as LSVT/Speak Out, which target speech loudness, are **effective for many people with PD** (e.g., Ramig et al., 2004), many others have **difficulty integrating improvements** to everyday life (S. G. Adams & Dykstra, 2009; Olson et al., 2019; Scott & Caid, 1983).
- Previous research indicates the **importance of SLP education on the amplification devices\*** available today as well as how to **tailor device selections** to patient needs (Bertrand, 2009; Greene et al. 1972).
- Evidence suggests that amplification devices can improve **acoustic and perceptual outcomes** for patients with PD (Knowles et al. 2020, Andreatta et al. 2016, Gaballah et al. 2016) as well as **speech intelligibility and communicative effectiveness** (Page et al. 2022).
- There is a **lack of evidence of key persons** that are involved in **decision-making** (ex: the individual with PD, family members, SLPs).
- It is not clear **what drives the choice of using an amplification device** for individuals with PD (Knowles et al. 2020) as well as what the **current attitudes/knowledge** of SLPs are around amplification devices (Mostcroft et al. 2019).
- Research is needed to determine **why/when SLPs recommend devices** to clients with PD.

\*An amplification device is usually a portable device that amplifies the natural speech of a person who is wearing it.

### Purpose

Identify influential factors in SLPs' clinical decisions regarding speech amplification device usage for people with Parkinson's Disease and parkinsonism

## Methods

### Participants

Inclusion criteria: SLPs in the United States/Canada with at least 2 years of experience working with clients with PD.

- 273 SLPs met inclusion criteria
- 111 SLPs were included in our analysis\*

\*97 submissions excluded due to a bot interference; 65 submissions excluded due to participants not completing the survey

### Data Collection & Analysis

The survey data was collected via an anonymous Qualtrics survey during the three-month span that the survey was open (January-March 2022). The survey took approximately 15-20 minutes to complete

#### Example Questions:

Q13. In the last 2 to 5 years, how many clients have you PRESCRIBED or CONSIDERED PRESCRIBING a speech amplification device to?

0    1 to 5    6 to 10    11 to 25    More than 25

Prescribed

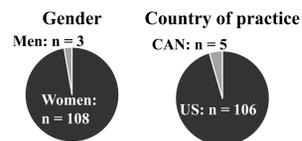
Considered prescribing (but did not prescribe)

Q17. Overall, how knowledgeable do you consider yourself to be regarding speech amplification device use?

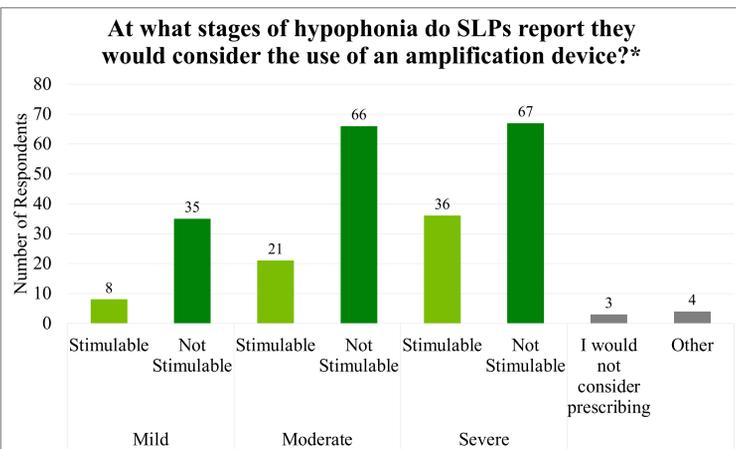
Not knowledgeable at all    Somewhat knowledgeable    Very knowledgeable

Knowledge

#### Participant Demographics



## Amplification Device Considerations for Speech Treatment in Parkinson's Disease & Parkinsonism

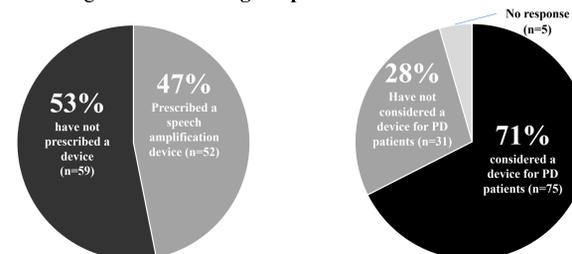


\*n=111 total responses  
Note – respondents chose as many symptoms as they deemed relevant.

## Results & Discussion

### Takeaways from the data

- SLPs most often consider prescribing a device for a patient with PD when they are **not stimulable for louder speech** as well as when **hypophonia is moderate to severe**.
- Hypophonia severity** and **stimulability** for louder speech are **important factors** along with **considering the patient's needs**.



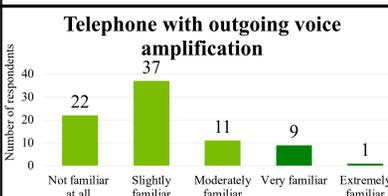
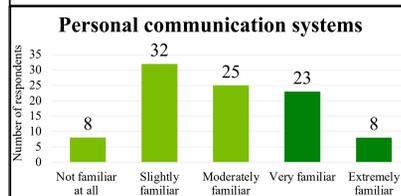
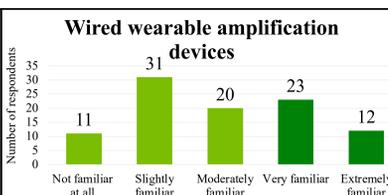
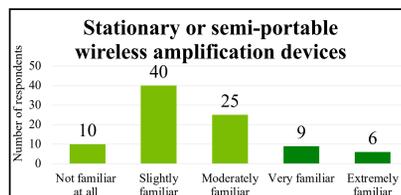
### Familiarity with Device Types

Q19 (a). Please rate your familiarity with the following device type:

**Wired wearable amplification devices**

Description: Portable, wearable amplifier (e.g., belt-pack, clip, or lanyard) wired to a microphone worn by the talker.

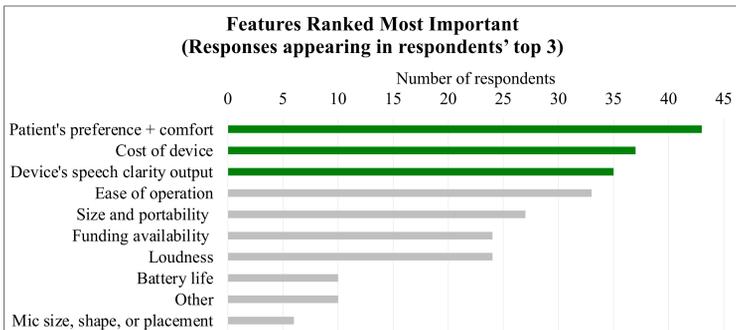
Examples: Chattervox (Regular, Mini Amplo, Supersize), ALDS MiniBuddy or Voicebuddy, ADDvox, Spokeman, Griffin Sonivox, Voiceette, Simeon Sprek

The type of device SLPs were most familiar with was **wired amplification devices**. (n = 35 – ranked very familiar/extremely familiar)  
The most prescribed device was the **Chattervox**, which is a wired amplification device.



### Perception of Device Features



Q23. Please rank each of the following aspects according to their importance from 1 = MOST to 10 = LEAST important, in terms how you decided which amplification device to use for your clients with Parkinson's disease. Please rank AT LEAST 3 choices and up to as many as you consider to be relevant to your practice. Leave blank the ones you don't wish to rank.

If you have never prescribed or considered prescribing an amplification device, leave this question blank.

Cost of device

Funding availability

Size and portability of device

Across all respondents, SLPs reported that the **most important overall factors** to consider when **selecting device features** were:

- Client's preferences & comfort
- Cost of the device
- Speech clarity output.

### Example statements from SLPs

#### SLPs that would consider prescribing a device

- I think the patient's **interest or lack of interest** in direct treatment would place a role, as well as **cognitive status** and **care partner interest/availability** in cueing/supporting patient in using louder speech."
- "Patients with **intelligible speech but hypophonia** might be candidates for amplification **IF they have reduced cognition and cannot reliably self-monitor** speech production."
- "Need for amplification seems to be both a factor of hypophonia **severity/ stimulability AND communication demands.**"
- "I've had the best outcomes with **earlier prescription** as cognitive deficits for use of a new device are not as impactful"
- "Circumstances are **always variable** all may benefit"

#### SLPs that would not consider prescribing a device

- "In my experience, if a patient's vocal intensity weak enough that they need an amplification device then they **most likely have speech deficits that also impact their communication** and an amplification device **would not be beneficial** to the patient's ability to effectively communicate
- "I have had **poor outcomes** with speech amplifiers. **Better response to LSVT**. That is my preferred treatment at this time."

## Summary

- SLPs most often **begin talking** about amplification devices as a treatment option when the client has **moderate to severe hypophonia**.
- Overall, SLPs should take **all personal and disease-specific factors** into account when determining if an amplification device is right for a patient.
- SLPs preferred to **choose device features** based on the **client's overall preferences/needs**.

## Future Directions

- A research study is **currently interviewing SLPs** to answer the following questions **about amplification device use for individuals with PD**:
  - How do SLPs approach trailing devices & evaluating success/lack of success?
  - What are the common barriers SLPs face when recommending a device as a treatment option?
- A **NEW** research study is **launching soon** and will interview patients with Parkinson's Disease that have experience using amplification devices. **Participants are needed for this study (Scan QR code)**

Scan the QR code to get information about future studies or email Thea Knowles at: [thea@msu.edu](mailto:thea@msu.edu)



REFERENCES AVAILABLE UPON REQUEST