

Project Title

Group speech treatment via telerehabilitation to improve the quality of community care for people with Parkinson Disease (PD)

Project Lead and Members

Project lead: Sarah Ko

Project members: Melissa Yong

Organisation(s) Involved

Tan Tock Seng Hospital; Parkinson Society Singapore

Healthcare Family Group Involved in this Project

Allied Health

Applicable Specialty or Discipline

Speech Therapy

Project Period

Start date: 01/01/2021

Completed date: 30/04/2023

Aims

To investigate if there are differences in outcomes for group speech treatment delivered via telerehabilitation and delivery via face to face, for people with Parkinson Disease.

Background

Hypokinetic dysarthria is commonly seen in IwPD (individuals with Parkinson Disease). This type of dysarthria has been shown to be effectively treated with speech therapy programmes such as LSVT (Lee Silverman Voice Treatment) LOUD and treatment gains can be maintained via group therapy such as LSVT LOUD for LIFE. IwPD receiving individual speech treatment during their acute admissions or in outpatient clinics often face difficulty generalising their trained communication skills to their everyday lives. With group speech treatment made available in the community, these communication

skills can then be used in a more naturalistic environment with other lwPD, thereby aiding the generalisation of these skills. Group speech treatment can also aid in increasing the motivation of lwPD in adhering to speech homework prescribed by their therapists by providing more opportunities to practise their speech with others and also promotes a sense of camaraderie among group members, knowing that they are able to have others to journey with to overcome these speech problems.

However, with face to face group speech treatment, there are still issues with mobility (which are also commonly experienced in lwPD) and timetabling clashes that can often impede even the setting up of a group treatment class. In a face to face group class, there is a need to coordinate not just the participants' timetables, but also their caregivers' availability to physically bring the participants to the clinic or the centre for treatment. It can also hinder therapy progress and the individual's willingness to access therapy services. Telerehabilitation can break down barriers to therapy as individuals can access these services from the comfort of their own homes and require less commitment or support from caregivers, who often may be feeling burnt out from intense caregiving and bringing their loved ones for multiple medical appointments. Moreover, the usage of video-conferencing/calling has gained greater acceptance now after the COVID-19 pandemic, and there is also a greater need to explore conducting group speech treatment virtually to keep lwPD safe at home.

Providing group speech treatment via telerehabilitation can improve the quality of care of lwPD in the community by increasing accessibility of speech therapy, with the hopes of achieving the ideal state where every lwPD who experiences speech difficulties can easily access support for this, even from the comfort of their own homes.

Methods

Eligible English-speaking participants diagnosed with idiopathic Parkinson Disease were prospectively recruited into 2 groups; first group of participants recruited between April 2021 to December 2021 received speech treatment via telerehabilitation (TR) at their homes, and then subsequently next group of participants recruited between April 2022 to December 2022 received the treatment face to face (FTF) at Parkinson Society Singapore. Treatment lasted for 8 weeks in both groups. Trained clinician conducted the TR session via Zoom.

Participants' speech and voice functions were assessed in-person before and after the 8 weeks of treatment.

Participants also filled in:

- Voice Handicap Index (VHI) pre and post treatment (how they perceived their own voice).
- Questionnaires post treatment – participants' perception on the treatment they received, including questions on ease of access to the treatment, effectiveness of the treatment, as well as aspects of the treatment that they liked or disliked.

Results

A total of 17 participants, with a mean age of 70.9 years (SD 5.6, range 62 – 82 years) were recruited. Eight were females. Distributions of age and gender were similar between two groups.

Six and eleven participants received FTF and TR, respectively. The clinical endpoints significantly improved after the treatment from baseline in both groups (p value < 0.05), but there was no evidence of a significant between-group difference in the magnitude of improvement (table 1).

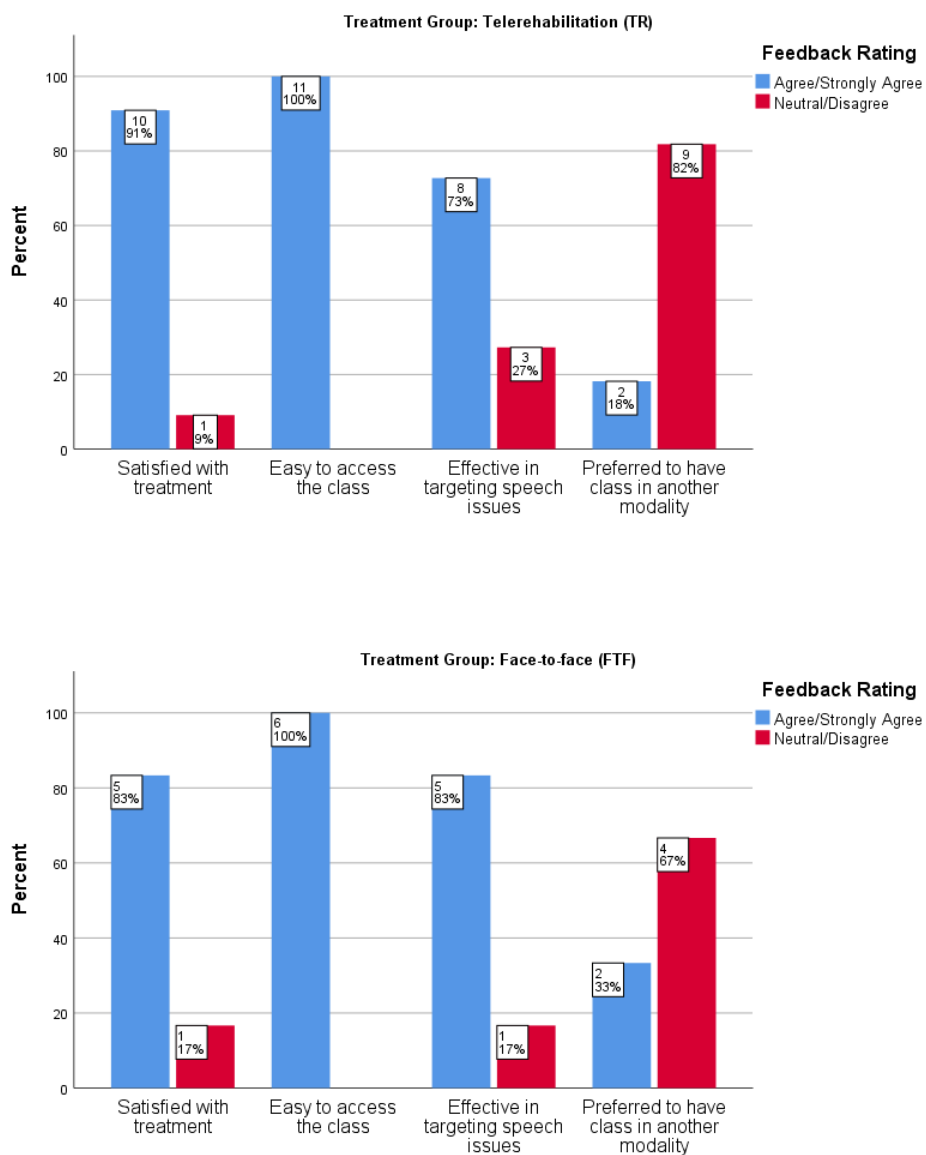
Participants receiving FTF reportedly enjoyed the interactions and sharing of experiences during class time. No challenges were cited pertaining to attending these face to face sessions. Participants receiving TR reported enjoyment in the interactions during class time too, and found it encouraging to have others working on the same issues as them. Challenges cited by 3 participants revolved around unfamiliarity with using the Zoom platform (figure 1).

Table 1: Distribution of participants demographics and outcomes

	Face to face group (n = 6)	Telerehabilitation group (n = 11)	P value*
Age, mean (SD)	71.1 (5.2)	70.8 (6.0)	0.907
Females, n (%)	2 (33.3)	6 (54.5)	0.402
Prolong phonation (decibels), mean (SD)			
Before treatment	75.5 (7.8)	72.8 (6.3)	0.455
Magnitude of improvement after treatment	7.3 (6.5)	4.8 (6.8)	0.486
Prolong phonation (seconds), mean (SD)			
Before treatment	10.6 (5.0)	11.2 (5.2)	0.809
Magnitude of improvement after treatment	3.8 (2.8)	1.8 (2.6)	0.172
Reading (decibels), mean (SD)			
Before treatment	69.9 (3.2)	66.9 (3.8)	0.121
Magnitude of improvement after treatment	5.7 (2.4)	3.6 (3.5)	0.221
Monologue (decibels), mean (SD)			
Before treatment	68.2 (3.9)	63.7 (5.9)	0.121
Magnitude of improvement after treatment	3.2 (3.1)	3.9 (3.9)	0.680
VHI scores, n (%)			0.489
- Improved	2 (33.3)	4 (36.4)	
- Remained same	4 (66.7)	5 (45.5)	
- Declined	0	2 (18.2)	

*p values are obtained from two sample t-test for continuous variables, and Chi squared test for categorical variables. SD is standard deviation.

Figure 1: Distribution of participant feedback ratings



Lessons Learnt

As the project started during the COVID-19 pandemic, we had to adjust the timeline and the plan according to the prevailing restrictions at that time. It was also more challenging recruiting participants for this project as people were understandably concerned about the risks of exposure to COVID-19 when coming for the assessment sessions or face to face group treatment sessions.

However, I have also learnt that there are two sides to every coin. Because of the pandemic, clinicians and some of our patients were more accepting to give this new mode of delivery of therapy - telerehabilitation a chance. Some of our telerehabilitation group participants found it challenging to use the Zoom platform at first, but with caregiver support and regular usage of the platform weekly, the participants persisted and learnt, and were able to complete the full 8 treatment sessions via Zoom.

Conclusion

Telerehabilitation is a viable way of conducting group speech treatment for lwpd. In our project, it yielded comparable outcomes to treatment conducted face to face. Unfamiliarity with using technology for telerehabilitation can be overcome by caregiver support or training done by the clinician during the pre-treatment assessment session.

Additional Information

This project is funded by the Centre for Allied Health & Pharmacy Excellence (CAPE).

Project Category

Care Continuum, Outpatient Care, Care & Process Redesign, Quality Improvement

Keywords

Group Speech Therapy, Parkinson Disease, Telerehabilitation

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Speech Therapist conducting telerehabilitation session.



Speech Therapist conducting face to face group session.



Group Speech Treatment For Parkinson Disease Delivered Via Telerehabilitation Versus Face To Face

Ko, S., Acharyya, S.

INTRODUCTION

Individuals with Parkinson Disease (IwPD) traditionally receive speech therapy face-to-face in hospitals or clinics in Singapore. Upon completion of hospital-based treatment, there are limited community speech therapy services. Alternative modes of service delivery, increasing accessibility and addressing needs of IwPD, need to be investigated in the local context. We examined the feasibility and effectiveness of group-based speech telerehabilitation for IwPD.

METHODOLOGIES

Eligible participants diagnosed with idiopathic Parkinson Disease were prospectively recruited into 2 groups; first group of participants recruited between April-December 2021 received treatment via telerehabilitation (TR) at home using Zoom. Subsequently, next group of participants recruited between April-December 2022 received treatment face to face (FTF) at Parkinson Society Singapore. Treatment lasted for 8 weeks in both groups.

Participants' speech and voice functions were assessed in-person pre and post treatment.

Participants filled in:

- Voice Handicap Index pre and post treatment (perception of own voice).
- Questionnaires post treatment – perception of the treatment received, including ease of access and effectiveness.

RESULTS

17 participants (mean age = 70.9 years, SD 5.6, range 62 – 82 years) were recruited. Eight were females. Distributions of age and gender were similar between two groups.

Six and eleven participants received FTF and TR, respectively. Clinical endpoints significantly improved after treatment in both groups (p value < 0.05). There was no evidence of significant between-group difference in the magnitude of improvement (table 1).

FTF participants enjoyed interactions and sharing of experiences during treatment, and cited no challenges. TR participants enjoyed interactions too, and found it encouraging to work on the same goals. Challenges cited revolved around unfamiliarity with Zoom (figure 1).

CONCLUSION

Telerehabilitation is a viable way of conducting group speech treatment for IwPD. In our project, it yielded comparable outcomes to FTF treatment. Unfamiliarity with using technology for telerehabilitation can be overcome by caregiver support or training done by clinician pre-treatment.

FIGURES/ DIAGRAMS

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