



INTRODUCTION

➤ Stroke is considered one of the leading causes of death in America. Of those who survive, approximately 40% are left with a language deficit called aphasia (Lam & Wodchis, 2010).

➤ Intensive treatment is considered to be an important treatment variable (Brady et al., 2016) but it is logistically difficult to achieve in a real-life setting.

➤ Due to the global pandemic, in-person treatment has been suspended for many, but technology offers a potential solution.

➤ With SLP support, PWA are able to use devices and app based treatment for about 20 minutes per day for language rehabilitation purposes but generalization to untrained tasks are limited (Palmer et al, 2020).

AIMS

➤ Determine whether a person with moderate aphasia severity can *independently* set up and complete treatment activities on a treatment app.

➤ Determine whether a mass practice schedule (two hours/day for two weeks) is reasonable and achievable.

➤ Assess whether this sort of independent treatment results in improved language and can generalize to untrained tasks such as discourse.

METHODS

PARTICIPANTS:

- Chronic (>1 year post stroke), moderate-severe non-fluent aphasia.
- In possession of a tablet (IOS/Android).
- Exclusion criteria include any degenerative neurological disorder such as dementia or Parkinson's Disease and vision and auditory impairments.

MATERIALS: Participants provided with written and video instructions on how to install and use the app (Tactus Therapy). Each participant will complete a daily log to track time used on the app. At the end of the study, participants will completely a survey to note their overall experience with the app.

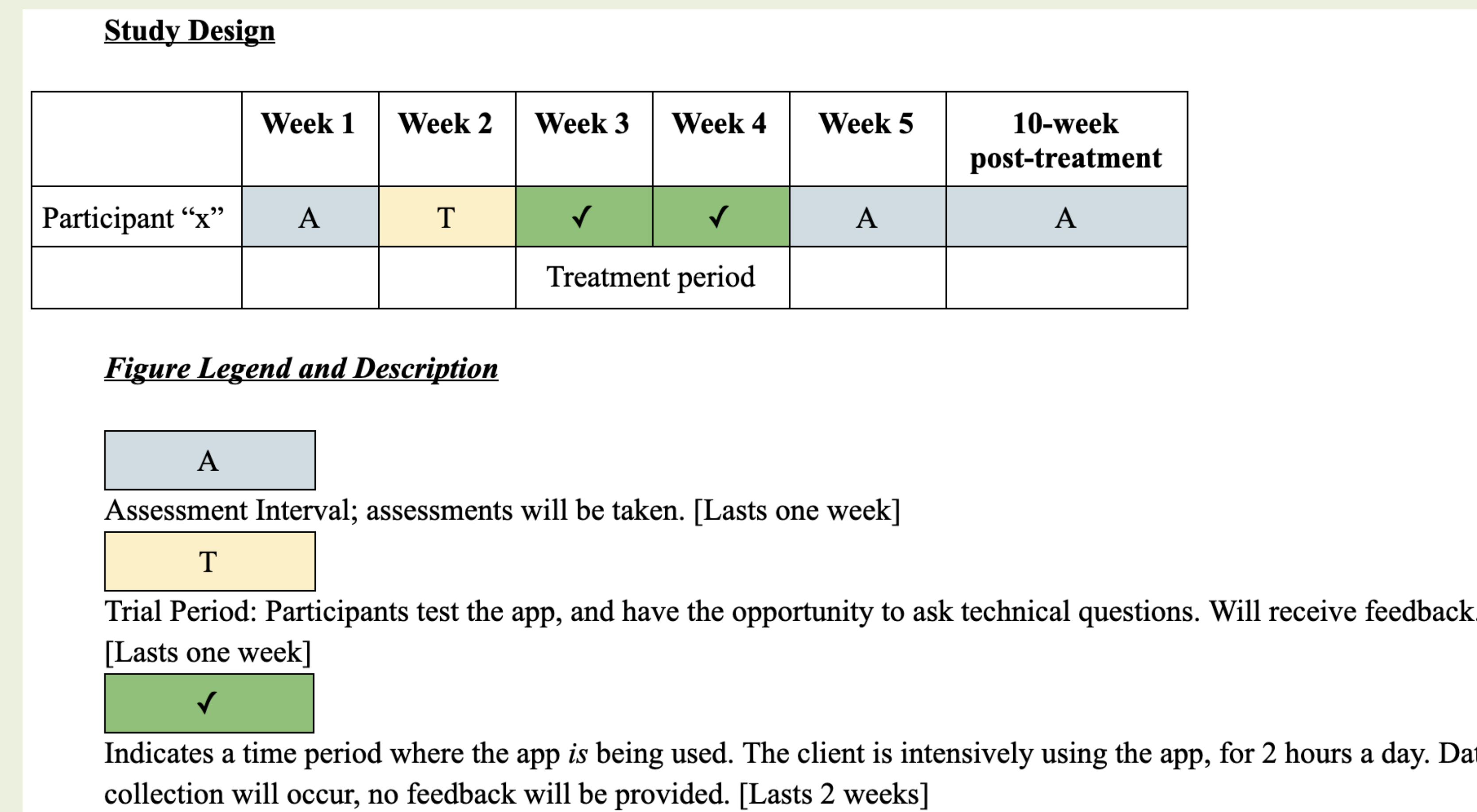
EXPERIMENTAL DESIGN: Within-subject, multiple baseline design

ASSESSMENT: 3 assessment periods conducted via WebEx: pre-treatment, immediately post-treatment and 10 week post-treatment. Assessments include Quick Aphasia Battery (QAB), picture description, Stroke and Aphasia Quality of Life Scale. Baseline naming will be taken prior to beginning treatment.

OUTCOME MEASURES:

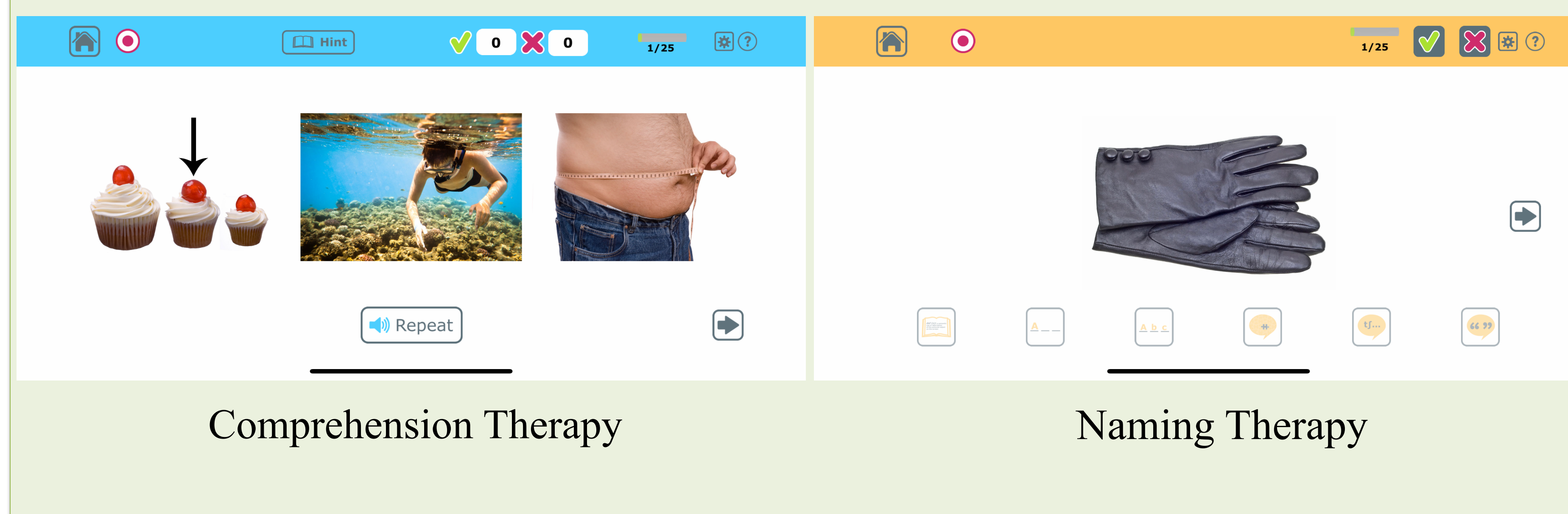
- 1) Accuracy on treatment tasks
- 2) Aphasia severity as measured by the QAB
- 3) Discourse outcomes from picture description and at-home recordings
 - 1) Informativeness
 - 2) Efficiency
 - 3) Social components of discourse

STUDY DESIGN



TREATMENT

- The pilot study will take place over 5 weeks (see table above).
- Participants will be trained on a comprehension-based and production based app and on how to record and email all productions within the app (see below).
- One week of practice provided.
- Two weeks of self-administered treatment for 2 hours/day for 10 days (20 hours total treatment).



DISCOURSE COLLECTION AND ANALYSIS

- Home discourse samples will be collected pre-treatment and 10 week post treatment.
- Samples will be collected through small recording devices worn around the neck
- Participants will be instructed to record a day's worth of recording, in their home environments.
- Recording segments will be transcribed and analyzed to determine the total number of correct informational units (CIUs) according to procedures outlined by Nicholas and Brookshire (1993) and these will be used to determine the informativeness (%CIUs), and the efficiency of language (CIUs/min) and whether there is a change over time.

OTHER ANALYSES

- Effect sizes for each individual to determine whether there were clinically significant changes from pre to post treatment on each measure, will be calculated.
- Inter and intra rater reliability will be performed for all discourse measures by having the trained assistants independently score the transcripts for 20% of all the representative discourse samples.

PREDICTIONS

- After 20 hours of self delivered therapy on the Tactus Therapy app, we predict:
 - A higher dropout rate compared to that seen in studies requiring only 20 minutes per day.
 - Non compliance by some of those who do remain in the study as two hours per day may be too boring or rigorous for some without someone to help push this process.
 - A clinically significant effect size on at least one measure of language for those who do remain in the program and are able to adhere to the recommended dosage and maintenance of gains for those who made them.
- Clients to be independent, and see treatment effects generalize to discourse.

- Tactus Therapy has agreed to donate a limited number of subscriptions to facilitate this project.



SCAN ME

For references and more information, contact
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