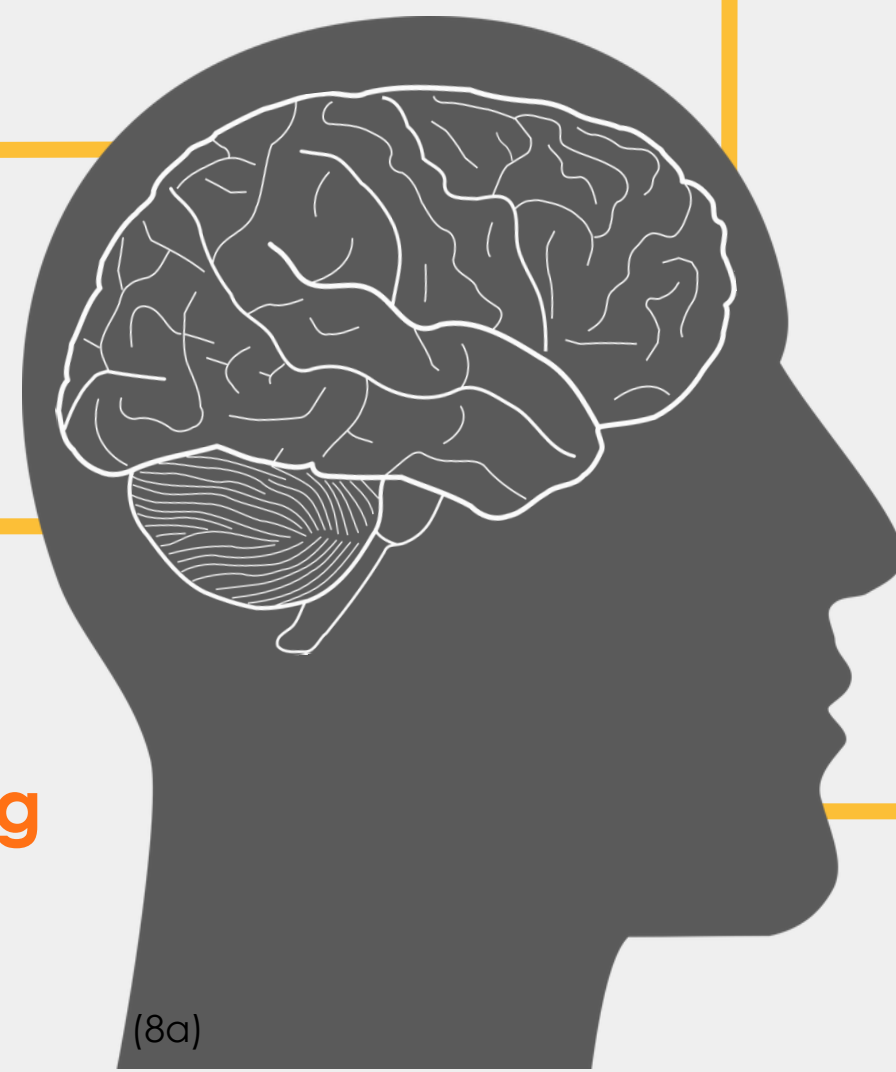


COMMUNITY-BASED EXERCISE & WELLNESS PROGRAM FOR CHRONIC STROKE - A PILOT STUDY

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BACKGROUND

800,000 new cases
of stroke reported
annually in United States



Post-stroke impairments
including hemiparesis,
aphasia, endurance,
depression, visual and
perceptual deficits
contribute to reductions in
community participation

Over 50% of community-dwelling
individuals with stroke lack any
social, recreational, or meaningful
activity outside of the home⁵

Community involvement
(socializing) has been linked
to improved psychological
well-being²

PURPOSE

The overall goal of this pilot study was to determine the feasibility and effectiveness of an 8 week university-based community exercise and wellness program designed to provide an opportunity for exercise, social interaction, and education on stroke-related health and wellness topics.



METHODOLOGY

Participant selection	<ul style="list-style-type: none"> Inclusion criteria: > 3 months post-stroke, community-dwelling, ability to follow 3 step commands and provide informed consent
Quantitative Data	<ul style="list-style-type: none"> Mini-BESTest, 10 Meter Walk Test (10MWT), 30 second Sit to Stand (30 sec STS), 2 minute walk test (2MWT), Stroke Impact Scale (SIS) measured at Pre-, Mid- (4 weeks), and Post- (8 weeks) intervention
Qualitative Data	<ul style="list-style-type: none"> Subjects rated overall outcomes of group exercise and wellness program using Global Rate of Change Scale (GRCS) GRCS customized to meet each person's self-identified participation goals Scripted phone interviews 4 weeks after final stroke class
Intervention Design	<ul style="list-style-type: none"> Classes 2x/week for 8 weeks included general strengthening, balance training, functional activities, and education on stroke wellness Exercises were individualized and progressed to meet participants' abilities Vitals (BP, RPE, HR, SpO2) measured pre-, mid-, and post- exercise class
Data Analysis	<ul style="list-style-type: none"> Within-Subjects paired t-tests Alpha level of .05

RESULTS

- The participants' performance across the SIS, 10MWT, Mini-BESTest, and 30sec STS improved but failed to show statistical significant differences, Table 1.
- From pre to post test the 2MWT showed a significant improvement with an average increase in 60 ft, $p < 0.05$, Figure 1.
- Qualitatively all participants responded favorably regarding the program

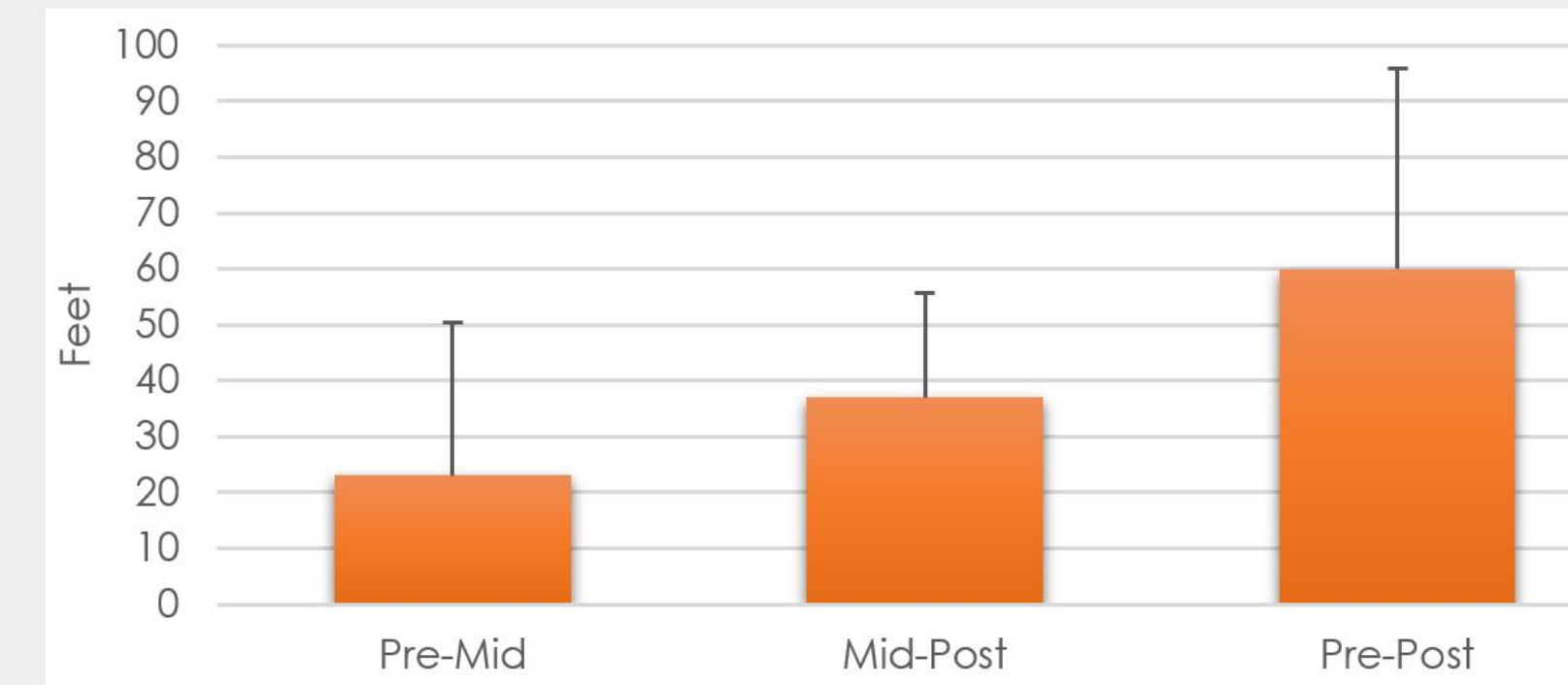


Figure 1. The average difference in 2 minute walk test with 1 SD, n=4. Tests were performed at baseline, 4-weeks, and 8-weeks. Pre to Post tests showed significant difference, $p < 0.05$ with an average increase of 60 feet. Pre to Mid and Mid to Post tests showed no statistical difference.

Table 1. Average Change Across Standardized Tests

Test Type	Pre-Mid ^a	Mid-Post ^a	Pre-Post ^a
S.I.S. (%)	DNT	DNT	13.75
10MWT (m/s)	0.12	-0.02	0.10
2MWT (feet)	23.03	36.98	*60.00
Mini-BESTest	2.00	1.50	3.50
30 sec STS	1.00	1.00	3.00

^a probability of change α -level $p < 0.05$
* denotes a significant difference
DNT = Did Not Test

DISCUSSION

Quantitative Data

- The only statistical difference seen was pre-post 2MWT
- No established MCID established for the 2MWT within this population
- Studies have shown the 2MWT to strongly correlate with the 6 MWT, $r > .993$; while values correlate well they are also exaggerated due to fatigue⁹
- Participants may meet the MCID for the 6MWT for people with chronic stroke

Clinical Implications

- Feasibility: Program is in its 3rd iteration
- Noted camaraderie between participants and caretakers.
- Low intensity; 2 days/week, 8-weeks may have impacted results
- Increase in intensity and duration may lead to increased improvements
- Cost of program minimal due to availability of university resources
- Number of students as facilitators

Qualitative Data

- Question 5.** Since attending the classes, do you feel different about yourself? This question was consistently answered with words that denote an increase in self-efficacy, "confidence, capable, goal, motivated, and positive."
- Average S.I.S improvement was 13.75%
- One participant reported improvement on management of stroke with an increase of 30% on the S.I.S.

CONCLUSION

- Program successful and feasible within the university setting.
- Participants reported benefits for physical and mental health.
- Continued classes over summer and fall with increased number of participants

- Unsuccessful in showing significant improvement with outcome measures for balance, strength, and fall risk
- Low cost in university setting, but may be higher in community setting

"My primary goal was to be able to get off the floor without climbing up a chair or with assistance from anyone, and I was able to achieve that. Definitely a little stronger and a lot more confident."

Participants all agreed that the class helped their ability to manage at home.



CHALLENGES

- Cognition** may affect ability to follow instructions or describe limitations
- Comorbidities** can affect ability to exercise safely
- High instructor to participant ratio for **safety** (vitals and guarding)
- Participation** affected by transportation and support structure
- Low cost** with university-based program, but may be more costly in community setting

THE FUTURE

- Summer 2017
2nd exercise class
8 weeks
8 participants
- Fall 2017
3rd exercise class
8 weeks
10 participants
- Participants Report Encouragement from each other's stories & accountability to exercise
- Looking Forward
Expanding to include individuals with other neurologic issues

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