# The impact of repeated participation in the Stay Strong, Stay Healthy exercise program to improve physical function in older adults

Mikala Cessac <sup>(1)</sup>, Betsy Embree <sup>(2)</sup>, Kelsey Weitzel <sup>(1)</sup>, Kristin Miller <sup>(1)</sup> & Dr. Steve Ball <sup>(1)</sup> 1 Nutrition and Exercise Physiology, 2 Sinclair School of Nursing

## INTRODUCTION

As individuals age, it becomes increasingly important to maintain balance, physical strength, and overall health. There is ample research that supports the correlation between continued physical activity and maintained or improved health outcomes in older adults. However, there are a variety of physical and social barriers that limit older adults from continuing to exercise, including a comfortable location to exercise or a lack of knowledge on how to exercise safely or effectively. Stay Strong, Stay Healthy (SSSH) is a community exercise program for older adults. Trained instructors lead strength, flexibility, and balance exercises throughout the 8 week program. The purpose of this study was to examine the impact of single-course participation in SSSH Level 1 on physical health compared to repeated course participation in both Levels 1 and 2. We hypothesized that there would be significant improvements in four measured areas indicative of physical fitness, including Chair Stand, a Sit and Reach, Timed-Up-And-Go, and Back Scratch tests.

A two-tailed, t-test was performed to evaluate the significance (*p*<0.05) of each variable. Average percent of change between the pre and post variables was calculated and compared between single-course participation and repeated participation.









Figure 4. Example exercises performed during SSSH

## RESULTS

Analysis showed a significant improvement in the Chair Stand (p<0.001), Sit and Reach (p<0.001), Back Scratch (*p*=0.002), and Timed Up and Go variables (p<0.001). When participants were stratified by age group (younger=<68yrs; older=>68yrs) no group differences were found in the levels of improvement (all p>0.159).

Average of Percent Change in Chair Stand



Figure 3. Average of percent change in Back Scratch distance in single-class and repeated participants

#### Average of Percent Change in Timed Up and Go



Figure 4. Average of percent change in Timed Up and Go time in singleclass and repeated participants

## CONCLUSIONS

# **MATERIALS AND METHODS**

Participants (n=100) ranged from 48 to 85 years of age and had all participated in either a single SSSH Level I class or had repeated participation in multiple classes.

Participants completed a progressive balance assessment and physical function assessments, obtained from the Senior Fitness Test, prior to beginning the class and upon completion.

- A Chair Stand (CS) test: participants start seated and aim to complete as many stands as possible in 30 seconds.
- A Sit and Reach (SR) test: participants sit in a chair and reach toward their toes, the distance between hand and toe or overlap is measured
- A Timed-Up-And-Go (TUG) test: participants start in a chair then walk at a pace that is comfortable for



Figure 1. Average of percent change in chair stand repetitions for single-class and repeated participants



This data suggests that both single-course and repeated participation in the SSSH program positively impacts physical health. Participants significantly improved in the Chair Stands, Sit and Reach, Back Scratch, and Timed Up and Go tests. Although participants improved at a greater rate throughout their first class, they continued improving at significant rate as they continued attending the program. These improvements suggest that the overall physical fitness of the participants was bettered from participation in the course. Clinical significance should also be considered when examining the variables, as improvements in agility, flexibility, and balance are all important in maintaining independence in older adults. SSSH is ultimately an effective option for older adults looking to participate in a community based exercise program. An increase in community interaction and socialization may be an

### them for 8-feet, circle a cone, and return to the chair.

• A Back Scratch (BS) test: participants place one hand behind their head and one underneath the shoulder blade and reach to touch their hands together.

Figure 2. Average of percent change in sit and reach distance for single-class and repeated participants

#### area of future SSSH research.

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