Exercise Self-Efficacy and Pulmonary Hypertension
Audrey Ferguson¹·², Josh Woolstenhulme¹, Michelle Kennedy¹, Randall E. Keyser¹·³
¹Rehabilitation Medicine Department, National Institutes of Health, Bethesda MD, ²School of Nursing, College of Health and Human Services, George Mason University, Fairfax VA, ³Center for Chronic Illness and Disability, George Mason University, Fairfax VA.

Introduction
Background:
Exercise self-efficacy is a person’s confidence in their ability to exercise when faced with obstacles. Exercise self-efficacy is often used as a predictor of adherence to an exercise program. Self-efficacy is influenced by performance accomplishments and may be influenced by experiences of patients in an exercise intervention program.

Objectives:
• Investigate the relationship between exercise self-efficacy and fitness outcome measures.
• Compare measures of exercise self-efficacy, six-minute walk distance and anaerobic threshold between a 10-week exercise intervention group and a 10-week education only group.

Hypothesis:
There is no relationship between exercise self-efficacy and six-minute walk distance or anaerobic threshold.

Methods
Setting and Participants:
14 participants (12 females, 2 males) with primary pulmonary arterial hypertension diagnosed by right heart catheterization (resting mean pulmonary arterial pressure ≥ 25 mmHg). Participants were between 21 and 82 years old, sedentary, and with no other medical conditions that would impair exercise ability. Interventions were conducted at NIH and Inova Fairfax Hospital.

Interventions:
Subjects were randomized to either a 10 week education only control group or a 10 week intervention group that receives education plus walking intervention 3 times a week for 30-45 minutes at 70-80% of peak VO2.

Outcome Measures:
• Six-minute walk test (6MWT)
• Anaerobic threshold (AT)- Respiratory gas exchange data were collected and analyzed using a Medgraphics Ultima™ system.
• Exercise self-efficacy (ESE)- The questionnaire used is similar to that developed by Marcus et al.

Statistical Analysis:
Data were analyzed using Microsoft® Excel 2007. Within group comparisons were made with paired student t-tests. Regression analysis was done to examine relationships between ESE and 6MWT or AT. *P values ≤ 0.05 were considered statistically significant.

Results

Comparison between baseline AT and ESE

Comparison between baseline 6MWT and ESE

Conclusions
In patients with pulmonary hypertension, participation in an exercise intervention was associated with an increase in ESE.

Limitations
The small sample size limits the results.

Future Directions
Follow up investigation of participants with pulmonary hypertension in an exercise program is needed to determine the effects of exercise intervention on the fitness habits of participants.

Acknowledgements
I would like to thank Dr. Lisa Chin for her advice on poster design and clear explanations of the research process. I would like to thank Dr. Lynn Gerber for her expert guidance throughout the research process.

References