

## End of Summer Report

My name is McKenna Shearer, and over the eight weeks of my FURSCA project I examined and recorded the effect of exercise on sleep quality, motivation, muscle size and composition, and muscle performance in a group of sedentary middle-aged adults. The study included 8 women who were all placed in the intervention group. Interest in the study was low, therefore there were not enough participants to create a control group. One participant did drop out during week 3 of the study. The other seven participants were all regular in class which was held Monday, Wednesday, and Friday. The class was exercise based and every two weeks the focus of the exercise changed. The first two weeks focused on corrective movements, then stability, and finally strength building. Participants were encouraged to push themselves with their chosen weight and level of band resistance.

Because of the shorter period of time, I was not able to see any change in muscle size and composition. However, I was able to learn the ultrasound technique that allows us to see the muscles of interest. I practiced this technique on multiple volunteers, and was able to analyze the participants images using Image J. This application calculated how much fat was in each muscle as well as the size of the muscle.

During the fall, I will analyze the other data that I collected and determine its statistical significance. However, without a control group the research cannot be published. I will however present at Elkin Isaac in the spring. I completed literature reviews on sedentary behavior and mental health, exercise and mental health, ultrasounds and aging, handgrip and aging, countermovement vertical jump and aging, and balance and aging.

Thanks to FURSCA, I was able to get great research experience in the field of kinesiology. I was able to share my love for exercise with many women and all of them expressed their desire to continue to workout after the conclusion of the study! I was able to reimagine my project after receiving less interest than I had anticipated. This project provided

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me with valuable knowledge about the human body, aging, and mental health which will all be very useful as I pursue a career in medicine. Eventually, I would like to run a larger study for my senior thesis, and I feel that this was a great introduction to what it will be like. It was an honor to be able to work with Dr. Ahalee Farrow, she was a fabulous mentor and guide throughout the whole project! I would like to thank all of FURSCA's donors who made this project a possibility!