

## Undergraduate Research Symposium May 19, 2017 Mary Gates Hall

### Online Proceedings

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#### POSTER SESSION 1

Commons West, Easel 34

11:00 AM to 1:00 PM

##### **Heart Smart in Renton: Evaluating a Multilevel Intervention Teaching Communities About Cardiovascular Health**

*Olivia Fox, Senior, Nursing*

*UW Honors Program*

*Kate Evered, Senior, Nursing*

*UW Honors Program*

*Mentor: Kerry Reding, Biobehavioral Nursing and Health Informatics*

The research question for this study is, “Is a multilevel intervention, spanning school, family, and individual levels, effective to promote awareness about cardiovascular health and disease prevention within the Renton community?” Within King County, an almost 10-year difference in life expectancy exists between low- and high-income areas, and the second-leading cause of death (after cancer) is cardiovascular (CV) disease. Because obesity is a major risk factor of CV disease, interventions to promote health must incorporate strategies for sustainable weight loss and obesity prevention. We hypothesize that a multilevel intervention incorporating students, families, and communities, will be more effective to promote CV health than previous single-level interventions, including Teen Take Heart (TTH) and Women Take Heart (WTH). This study will combine TTH and WTH, as well as adding a third level called the Healthy Heart Ambassador program (HHA), culminating in a community health fair led by the participants of HHA. We will assess the efficacy of components of this multilevel intervention through qualitative methods, including focus groups with the HHA participants, key informant interviews with staff at the Renton School District high schools, and surveys to be filled out by community members at the health fair. We anticipate that results of this study will show increased knowledge about CV health, increased feelings of empowerment over health, and increased motivation to lead a heart-healthy lifestyle among intervention participants. If this intervention is effective, this multilevel model could be instrumental in combatting the high rates of obesity and CV disease in low-income communities.

#### POSTER SESSION 1

Commons West, Easel 12

11:00 AM to 1:00 PM

##### **Evaluation of Fitness Zones in Seattle Parks**

*Catherine Minn (Catherine) Stockdale, Fifth Year, Nursing*

*Mary Gates Scholar, UW Honors Program*

*Mentor: Erin Blakeney, Biobehavioral Nursing & Health Informatics, UW School of Nursing*

There is clear evidence that regular physical activity is key to preventing obesity. However, 78% of adults in King County did not meet the Center for Disease Control’s recommended amount of physical activity in 2013. In 2015-2016, the Trust for Public Land (TPL) partnered with the Seattle Parks Department to pilot installation of outdoor fitness equipment (known as Fitness Zones (FZs)), in four parks (Delridge Community Center, Powell Barnett Park, Van Asselt Community Center and Playground, Hiawatha Playfield and Community Center). FZ’s were installed in these parks with the goal of increasing opportunities for community members to be more physically active. The primary aims of this study were to evaluate whether the installation of FZ’s increased park usage and whether physical activity levels increased in parks with FZ’s. Secondary aims were to describe FZ utilization patterns, user characteristics, and to evaluate park user’s perceptions of FZ’s. This study utilized a mixed-methods before and after design that included observations and interviews. Observations were carried out using both a running log of park users as well as a validated momentary time sampling observation method called SOPARC (System for Observing Play and Recreation in Communities). We also conducted brief (5-10 minute) semi-structured interviews with park users to learn more about park user demographics, activity levels, and perceptions of FZ equipment. Before FZ installation we carried out baseline data collection (two parks in fall 2015, two in spring 2016) with follow up data collection scheduled for one year later (fall 2016, spring 2017). We anticipate our spring 2017 research findings will help determine whether the installation of FZ equipment increased park usage and/or park user physical activity. Findings will provide useful information to stakeholders (TPL and Seattle Parks) who are deciding whether FZ’s are a beneficial intervention towards which to put scarce resources.

## POSTER SESSION 1

Commons West, Easel 33

11:00 AM to 1:00 PM

### **Irritable Bowel Syndrome Symptom Severity and Quality of Life in Men and Women**

*Keaton L (Keaton) Hambrecht, Fifth Year, Nursing  
UW Honors Program*

*Mentor: Margaret Heitkemper, Biobehavioral Nursing and Health Informatics*

The purpose of this project is to compare psychological distress, gastrointestinal symptom severity, and quality of life in men and women with irritable bowel syndrome (IBS). Understanding sex differences in symptom severity and quality of life is important for clinicians to successfully help patients manage their symptoms. This study is a secondary analysis of data from a clinical trial looking at an IBS intervention of symptom management. During the baseline period participants completed the IBS- Quality of Life Questionnaire (40 men, 143 women) and a daily symptom diary for four weeks (34 men, 138 women). Statistical analysis included descriptive data and t-test. My anticipated results are as follows: More women will state that abdominal pain, bloating, and urgency are the most severe symptoms. More men will have heartburn and diarrhea. Women will report lower quality of life compared to men. Men will report a greater impact of their IBS symptoms on work and physical roles whereas women will report a greater impact of IBS symptoms on their emotional and social roles. For both men and women the greater the severity of symptoms, the greater impact on quality of life. Clinicians can use this information to offer more focused, individualized care for symptom management. For example, if the results show women experience abdominal pain as the most severe symptom, providers can screen for and alleviate specific symptoms to increase quality of life. If no sex-related differences are found, this may indicate the health care seeking behaviors may be responsible for sex differences in IBS-related health care utilization.

## POSTER SESSION 1

Commons West, Easel 11

11:00 AM to 1:00 PM

### **Agreement of Blood Pressure Measurements – Cuff Position**

*Sara De Rosier, Fifth Year, Nursing  
UW Honors Program*

*Mentor: Elizabeth Bridges, Biobehavioral Nursing and Health Informatics*

The accurate performance and measurement of blood pressure (BP) measurement is vital in hospitalized patients in evaluating treatment effects and assessing clinical condition.

However, patients routinely return from the operating room with the BP cuff reversed in orientation so that the tubing is pointing up toward the patient's head, rather than down as is the manufacturer's recommendation. The purpose of this study was to determine whether orientation of the oscillometric BP cuff affects the accuracy of blood pressure measurements in healthy adults. A randomized controlled trial with repeated measures was conducted. Subjects served as their own control. Using an oscillometric cuff, the BP was measured with the tubing facing up and down (order randomized) on the right or left arm (arm randomized). Correct technique (arm position, cuff size and placement) was standardized. The tubing down was the standard for comparison. Thirty-eight healthy adults participated; one subject was excluded for a BP out of range. The mean difference and standard deviation between tubing down versus up was  $1.3 \pm 5.2$  mm Hg ( $p = .032$ ) for systolic blood pressure (SBP), for diastolic BP:  $0.3 \pm 3.1$  mm Hg (NS), and  $1.0 \pm 4.0$  mm Hg ( $p = .037$ ) for mean arterial pressure (MAP). While SBP and MAP were statistically significant different, the difference was not clinically significant compared to international standards. The European Society of Hypertension protocol for BP measurement devices requires 74% of differences in SBP to be 5 mm Hg or less, and 88% of differences to be 10 mm or less – our data exceed these guidelines at 75% and 93% respectively. The results of our study suggest that in the clinical setting, orientation of the BP cuff does not impact BP measurement in healthy adults.