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# Addressing Exercise Accessibility in Winter Conditions in Milton, Vermont

Liam du Preez

Family Medicine, January 2020

Mentors: Gordon Powers, Elizabeth Cote

# Problem Identification and Need

- Physical Inactivity Rates are quite low (rated 4<sup>th</sup> out of 50 states)<sup>7</sup>, but Vermont still has increasing all-associated mortality specifically in 4 chronic diseases listed below
- Obesity, Hypertension, Diabetes, Cardiovascular Disease<sup>12</sup>
  - Obesity: affects 28% of Vermont adults increasing as a reported contributor of mortality; 3-year associated prevalence in Chittenden County increased from 14% to 20%
  - Hypertension: affects 25% of Vermont adults, increasing as a reported contributor of mortality
  - Diabetes: affects 8% of all Vermont adults, increasing as a reported contributor of mortality
  - Cardiovascular Disease: affects 8% of all Vermont adults, one of the leading causes of death in Vermont, stroke mortality increasing yearly
- Vermont's 3-4-50 campaign is directly attempting to combat 3 key habits that contribute to 50% of deaths in Vermont, **1 of which is lack of physical activity**<sup>11</sup>
  - 2 of the 4 diseases being **diabetes and heart disease**
  - Physical Inactivity is estimated to contribute to 5.3 million deaths annually
  - 57% of Vermonters do not get the recommended amount of daily physical activity (150 min of Aerobic activity per week)
- Length of day has been associated with physical activity levels, especially in the Northeast United States
- Lower temperatures and less light during the day found with significant reduction in activity in older, functionally impaired individuals >65 years old in Scotland<sup>9</sup>

# Public Health Cost: National and Local

- Conditions in Focus associated with Physical Inactivity:
  - Obesity: \$143 million in Vermont (2004 Finkelstein study)<sup>5</sup>
  - Hypertension: \$55.9 billion for USA per year (most expensive contribution to heart disease overall cost)<sup>4</sup>
  - Diabetes: Cost \$543 million in Vermont<sup>9</sup>
  - Cardiovascular Disease: \$219 billion for USA per year<sup>4</sup>

# Community Perspective and Support

- Three Interviews
  - Amy Rainville, Community Health Team Member at Milton Family Practice
  - Louise George, LICSW, Clinical Social Worker at Milton Family Practice
  - Gordon Powers, MD, Attending Physician at Milton Family Practice
- Key points of Interviews
  - “...expectations change as we age, getting started again needs to reflect the new expectations. Also, many still believe there will be no gain without pain and justify **pushing themselves too hard.**” (AR)
  - “...motivation is the biggest resource, and building this in winter is challenging, when people are ready to change they generally start with things they are familiar with. If they are working to maintain a level of activity, they prioritize it and make time no matter, they are also usually versatile and able to change exercise goals depending on the situation.” (AR)
  - “Education needs to be done in a motivating and nonjudgmental way” (AR)
  - Most patients simply need to know what works or even “counts” as exercise; especially what is effective to help their conditions/functional status/symptoms
  - Most do not believe walking is appropriate exercise (AR, LG)
  - **Books and handouts** are effective means of motivating/informing patients (LG, GP)
  - **Almost all** patients cite the **ice and darkness** being the biggest barriers to exercising or starting exercise in the winter (GP)
  - Other common listed limitations being **time, space, cold** (All interviews)

# Intervention and Methodology

- Create a handout for patients with key information about the benefits of exercise, with goals of:
  - Specifically highlighting benefits **of walking as a possible means of gaining “sufficient” exercise**
  - Encouraging patients that even **15-30 minutes** can be beneficial to their health
  - Emphasizing the **various physical conditions** that are benefited by walking and exercise
  - Listing the **psychological as well as the physical benefits** of exercising during the winter
  - Provide specific set of instructions for **3 introductory/beginner exercises that have no equipment requirements**
- Gain approval from both Milton Family Practice Physicians and AHEC representatives
- Distribute handout at Milton Family Practice Front Desk as well as during individualized meetings with patients based on appropriateness
- Collaboration with AHEC with provision of complimentary headlamps (from previous promotional events) to encourage safe walking during the darker hours

# Results and Response

- Developed a written pamphlet (Figure 1) detailing benefits of walking and set of basic exercises intended for elderly/frail patients indoors
  - Instructions and Exercises from Silver Sneakers, a foundation dedicated to exercise accessibility for elderly
  - Distributed 150 copies of handout alongside 50 complimentary headlamps provided by AHEC office, following review of handout for 1 week during rotation; Advertised as “Winter Exercise Promotional Week”
- Discussed and Reviewed with Milton Family Practice Attending Physicians, Resident Physicians, and AHEC Chittenden Representatives
- Overall viewed with positivity as a means of directly giving a starting point for exercise in patients during the winter, and many requesting future use of the handouts after the promotional week
  - “This is something I’m going to keep many copies of; it’s exactly what we need right now”

Figure 1

**Is your physical activity and exercise limited by winter conditions?**

You aren't alone. Many Americans suffer from less activity and loss of exercise in the winter time, due to colder weather, less sunlight, and hazardous conditions.

This leads to many poor outcomes in health, including increased rates of depression, longer recovery times, and worsening of many conditions related to activity levels (such as Diabetes, Hypertension, Obesity, Arthritis, and more).

Recent studies have shown that exercising *even 15 minutes per day* can have **profound positive impact** on your health. Activities like walking, and various home-based exercises are options that are needed for the colder and darker months.

**The Benefits of Walking**

- ❖ Reduced Anxiety
- ❖ Decreased Mortality
- ❖ Lowered Heart Disease Risk
- ❖ Improved Sleep
- ❖ Elevated Mood
- ❖ Public Areas like malls offer **well lit areas with no obstacles**

**Hip and Back Pain: Glute Bridge.**

- 1) Start lying down, knees bent.
- 2) Push with heels and glutes to lift, making your body a straight line from shoulders to hips.
- 3) Bring back down slowly.

Repeat 8-12 times, 2-3 sets

**Posture, Daily Activity Booster: Modified Push-up**

- 1) Face a table, dresser, or wall. Place hands 1-2 inches wider than shoulders
- 2) Walk feet back until at a comfortable angle
- 3) Bend your elbows as much as possible, then return gently

Repeat 8-12 times, 2-3 sets

**Osteoarthritis, Balance Booster: Step-Up**

- 1) Start facing a step or small, stable platform
- 2) Step onto the platform with one foot, and stand on the platform until your leg is straight
- 3) Return to starting position, repeat with other foot

Repeat 6-8 times per foot, 2-3 sets

# Evaluation of Effectiveness and Limitations

## Evaluation of Effectiveness

- Survey patients that collected handout
  - Specifically on appropriateness of exercises, amount of exercise, and symptom changes reported for those that DID exercise
  - Specifically on what didn't work or stopped those that DIDN'T start exercising
- Discuss with Social Work and Community Health Team the impact/usefulness of the handouts
- Poll Social Work, Community Health Team, and Physicians about patients' referring to the handout and headlamps and their effectiveness
- Monitor how many handouts are taken before and after initial week, after headlamps run out

## Limitations

- Effectiveness Limited by only being in English
- Primarily available while supplies last, including headlamps
- Some patients in a hurry, cannot have time to access or read the handouts in the waiting room
- Unable to poll and record patient data/register those that picked up the handout (so far).
- Only 3 exercises listed; these may not be able to be performed by patients
  - Never screened to see if these are viable exercises for the patient population of Milton VT, specifically
- Mostly available to routine visitors to clinic, not those that are infrequent visitors
- Information limited by size of 1 page document

# Recommendations for Future Projects

- Distribute handouts across VT/Chittenden County, not just in Milton Family Practice
- Development of other popular forms of media (online webpage, instructional video); that are more permanent/easier accessible by patients
- Development of poster for waiting rooms; that are easier to read and view by patients
- Explore various other exercises for patients to try, possibly in different seasons
- Perhaps listing ideal walking paths/areas in local areas/Chittenden county that are covered/safe/regularly salted to prevent ice
- Regular monthly/annual exercise promotion weeks focused on increasing variety and accessibility of exercise
- Coordinating groups of patients together for exercise; as patient groups was listed as a great motivator by multiple interviewees
- Include link on future health project handouts for automatic recording of online survey responses about effectiveness of handouts/direct patient feedback (enable anonymous reporting/feedback)

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