2020

Emphasizing Year-Round Physical Activity of Seniors in Vergennes, Vermont

Carley R. Mulligan

Emphasizing Year-round Physical Activity of Seniors in Vergennes, Vermont

Carley Mulligan

Family Medicine, October 2020

Mentors: Dr. Tim Bicknell & Dr. Cate Ayers

Problem Identification & Need: Global

- Physical inactivity is one of the greatest risks of developing CVD. (1)
- “A global examination of PI (physical inactivity) and noncommunicable disease prevalence estimated that 6% of coronary artery disease, 7% of type 2 diabetes mellitus (T2DM), 10% of breast cancer, and 10% of colon cancer cases were caused by PI.” (1)
- 45% of people 60+ do not meet recommended physical activity level
  - Increases to 75% of people 75+ (2)
- Levels of physical activity higher in the summer than winter, specifically in young, elderly individuals. Pattern can be attributed to ambient temperature and sunlight hours. (3)

Problem Identification & Need: Vermont

- In 2019, 238.7 cardiovascular deaths/100,000 people, ranking Vermont 19th overall
- In 2019, diabetes increased 12% from 8.2% to 9.2%, ranking Vermont 8th overall
  - 18% of Vermonters 65+ have diabetes
- 18.9% of Vermonters are physically inactive and 27.5% are obese, ranking Vermont 4th and 8th overall
  - Physical inactivity in Vermont: age stratification
    - 13% individuals aged 13-44
    - 19.7% individuals aged 45-64
    - 28.1%individuals aged 65+
- 56% of Vermonters 65+ report having been told they have high blood pressure

*all data obtained from americashealthrankings.org

Public Health Cost

- Physical inactivity cost $53.8 billion worldwide in 2013 (5)
- Responsible for 13.4 million DALYs worldwide (5)
- Vermont estimated economic burden of obesity: $615.2 million (6)

Community Perspective & Support

- Interviews with KB, manager of Vergennes Parks & Recreation, TB, well-known active community member, and M, employee at Vergennes senior center housing and Age Well
- “Schools put together activities for school-age children, the Boys & Girls Club puts together activities for teenagers, and AgeWell works with the senior population, but there is a loss of communication with the older population”
- “There are not a lot of options right in Vergennes. Kettlebell class closed due to Covid, there were about 15 people in their 70s that attended. Water aerobics occurred in the summer. But now, there is nothing formal.”
- “Faith-based organizations are really popular with the older community. There are 3 church organizations in Vergennes and the average age is probably around 65.” – *a good target for reaching this population*

Intervention & Methodology

- Develop a handout to provide patients with encouragement and ideas to maintain physical activity during the winter
  - Benefits of physical activity
  - Local & online resources for activity ideas
  - Local walking map
  - At home exercises
    - 2019 study showed one of the biggest barriers of elderly individuals exercising at home was “uncertainty about what drills to perform and how to perform them.” (7)
- Plan to distribute handout to patients in the clinic and via MyChart when appropriate
- Work with Vergennes Parks & Recreation to post at-home exercises online to social media accounts

Results and Response

- Handout created (see next slide)
  - Promotes benefits of physical activity and identifies poor outcomes of physical inactivity
  - Provides local and online resources as suggestions of where to begin looking for activity opportunities
    - Online resources and Zoom fitness classes **especially** important during the pandemic
  - Provides examples of low impact and at home exercises
    - Exercises from a 2018 study titled “Effects of low-intensity bodyweight training with slow movement on motor function in frail elderly patients: a prospective observational study” (8)
- Created a “dot-phrase” in Epic to access handout and forward to patients
- Provided handout to Vergennes Parks & Recreation to post on social media accounts and web-page
- Distribute handout with Age Well activities (lunches for elderly), Meals on Wheels, and to the Senior Center Housing in Vergennes

6B

Is your physical activity limited in the winter?

You are not alone! Winter conditions make maintaining physical activity difficult for many. There are many local and online resources that can help you stay active and healthy all year.

Benefits of Physical Activity

Even 15 minutes of physical activity can promote health!

- Improved sleep, mood, strength, and stamina
- Help reduce risk of high blood pressure, cardiovascular disease, and arthritis

(1) For thigh exercises, participants held a bar with both hands while in a standing position and performed squats while sitting on a chair.

2) For lower leg exercises, participants held a bar with both hands while in a standing position and performed a calf raise.

(3) For gluteal exercises, participants held a bar with one hand while in a standing position and performed a knee-up using one leg at a time.

Resources

- Virtual and in-person classes at Vermont Sun Fitness in Vergennes & Middlebury
- Recreation calendar & events online at Vergennes Recreation Department

These at-home exercises are simple and low impact but still provide a healthy benefit

- A local 1.5 mile walking trail along the water in Vergennes
- Parking at Falls Park

Handout

*images on handout from Kanda, K., Yoda, T., Suzuki, H. et al. Effects of low-intensity bodyweight training with slow movement on motor function in frail elderly patients: a prospective observational study. Environ Health Prev Med 23, 4 (2018). https://doi-org.ezproxy.uvm.edu/10.1186/s12199-018-0693-4

**map from Vergennes Parks & Recreation website

Evaluation of Effectiveness & Limitations

- Effectiveness
  - Have providers check in with patients during winter visits about their exercise habits
  - If patients received a handout (in person or on MyChart), ask if they made any changes to their exercise
  - Contact Vergennes Recreation Department and Age Well to inquire about community posting/distribution of handout
- Limitations
  - Exercises may be too easy or difficult for some patients
  - Some patients do not live in Vergennes
  - Patients may not have access to online resources
  - Greatest need is something formal, organized, and probably in person for these patients

Recommendations for Future Projects

- Possible integration with iPad distribution at Porter affiliate sites
  - 283 telephone visits in September at Porter (Vergennes, Middlebury, Brandon Primary Care Offices)
  - VPQHC applied for 150 iPads & Wifi boosters to address this issue
- Create a more formalized exercise regimen for this population
  - Can work with Vergennes Parks & Recreation and other community organizations to host/organize classes or walks around time
- Develop similar handouts for other primary care offices
- Develop town-specific handouts (walking trails, local resources) for patients coming to Vergennes Primary Care from surrounding towns
- Develop handouts for different levels of exercise

References

1. Lavie, C., Ozemek, C., Carbone, S., Katzmarzyk, P., & Blair, S. (2019). Sedentary Behavior, Exercise, and Cardiovascular Health. *Circulation Research, 124*(5), 799-815. https://doi-org.ezproxy.uvm.edu/10.1161/CIRCRESAHA.118.312669 Circulation Research. 2019;124:799–815.

2. Franco MR, Tong A, Howard K, et alOlder people's perspectives on participation in physical activity: a systematic review and thematic synthesis of qualitative literatureBritish Journal of Sports Medicine 2015;49:1268-1276.

3. Cepeda M, Koolhaas CM, van Rooij FJA, Tiemeier H, Guxens M, Franco OH, Schoufour JD. Seasonality of physical activity, sedentary behavior, and sleep in a middle-aged and elderly population: The Rotterdam study. Maturitas. 2018 Apr;110:41-50. doi: 10.1016/j.maturitas.2018.01.016. Epub 2018 Jan 27. PMID: 29563034.

4. Americashealthrankings.org

5. Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W, Pratt M; Lancet Physical Activity Series 2 Executive Committee. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. Lancet. 2016 Sep 24;388(10051):1311-24. doi: 10.1016/S0140-6736(16)30383-X. Epub 2016 Jul 28. PMID: 27475266.

6. Jeffords, James, Vermont Legislative Research Service. University of Vermont. The Overall Costs of Obesity. November 16, 2010. https://www.uvm.edu/~vlrs/Health/Overall%20costs%20of%20obesity.pdf

7. Tina-Thea Nielsen, Trine K. Møller, Lars L. Andersen, Mette K. Zebis, Peter R. Hansen, Peter Krustrup, "Feasibility and Health Effects of a 15-Week Combined Exercise Programme for Sedentary Elderly: A Randomised Controlled Trial", BioMed Research International, vol. 2019, Article ID 3081029, 12 pages, 2019. https://doi.org/10.1155/2019/3081029

8. Kanda, K., Yoda, T., Suzuki, H. et al. Effects of low-intensity bodyweight training with slow movement on motor function in frail elderly patients: a prospective observational study. Environ Health Prev Med 23, 4 (2018). https://doi-org.ezproxy.uvm.edu/10.1186/s12199-018-0693-4