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Exercise prescriptions to improve patient adherence to lifestyle modifications

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Location: UVM Medical Center Family Medicine - Berlin
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Project Mentors: Dr. Kristopher Jensen
Problem Identification and Description of Need

- Exercise has been shown to have positive benefits in nearly all aspects of mental and physical health (5)

- Physical inactivity is one of the leading causes of chronic preventable diseases, which are the leading causes of death in the United States (1)
  - Vermont, specifically Washington County, is no exception: Heart disease, stroke and diabetes are 3 of the Top 6 causes of death (2)

- In Washington county, VT (2)
  - Approximately 60% of residents are overweight or obese
  - >40% do not meet recommended physical activity guidelines
  - Physical inactivity is highest among patients with obesity, diabetes, hypertension and heart disease

- Studies have shown that despite heightened awareness of the need for exercise many continue to have sedentary lifestyles (4,5)

- Recent reviews of exercise prescriptions have shown improved adherence and maintenance of exercise routines (4, 5)
As noted previously, physical exercise has positive benefits in all forms of health.

Obesity, T2DM, cardiovascular disease, hypertension, colon cancer and depression are among the diseases most highly associated with physical inactivity (6).

Studies from 2004-2010 estimated 11.1% of aggregate health care expenditures were directly associated with physical inactivity in the United States. (6)

Based on per capita health care costs and total population of Washington County VT, over $50 million annually can be attributed to physical inactivity. (7)

Physical inactivity has been estimated to be responsible for 10% of annual deaths in the United States, translating to approx. 525 deaths in Washington County, VT annually. (1, 8)
4-Community Perspective

- Interviews/discussion were conducted with the providers at Berlin Family Medicine to further assess: levels of patient exercise, barriers to patient exercise, and features that would allow providers to implement the use of exercise prescriptions

- Providers felt:
  - 50-75% of their patients needed to improve their exercise
  - Lack of ambition/motivation, lack of patient-specific goals, time excuses, inflexibility, and physical limitations were the most common reasons patients do not exercise
  - Most patients are generally aware of the health benefits of exercise
  - 50-75% of patients would benefit from an exercise prescription that provided them with a direct plan and explicit goals to motivate and create incentive
  - An exercise prescription that is provider-friendly would need to be:
    - Computerized
    - Easily accessed
    - Quick to fill out
    - Employ some method of tracking patient progress
5(1)-Intervention and Methodology

**Intervention**

1. Creation of an exercise prescription in form of a “dot-phrase” in PRISM for providers to directly fill out patient’s goal exercise, frequency and duration. Also included is a patient tracking sheet. *This “dot-phrase” (*Expr**escription*) is entered into the patient handout and given to patient at check-out.

2. Creation of a second “dot-phrase,” (*Exnote*), to document patient’s exercise prescription. This includes previous goals and level of achievement, as well as the patient’s new exercise goals.

3. Presentation to providers on how to implement an exercise prescription included:
   - Assessing patient need of exercise prescription
   - How to write patient’s initial exercise prescription
   - Methodology for using the exercise prescription to progress patient to goal of exercising 30min/day 5days/wk.
   - Logistics of documenting and providing patients with exercise prescription
     - How to use the “dot-phrases”
     - Options on documenting patient enrollment in exercise prescription
     - Tracking patient’s exercise progress

*See attached for dot-phrase contents and the PowerPoint for providers*
Exercise Prescription

Exercise prescription was made according to guidelines set by Gauer et al. and includes:

- Specifically identified exercise, frequency and duration goals
- Sheet for patients to track their exercises
- List of alternative exercises patients can substitute for their primary exercise

In the days following the presentation to providers, providers were queried about implementation of the exercise prescription in each of their patient populations.
6-Results

- Presentation was given to all but 1 provider

- Following the presentation providers commented:
  - “The use of dot-phrases and drop down boxes to fill out the prescriptions will make them very quick to complete”
  - “The prescription is simple and will be easy for patients to follow”
  - “Many patients will benefit from personally tracking their exercising”
  - “The prescription and documentation methods are flexible and very user-friendly”

- Early implementation
  - Exercise prescriptions were used by most providers in the days following the presentation
  - When using the prescription providers found:
    - It was fast and easy to use the dot-phrases, typically taking less than 1 minute to complete
    - Patients appeared to take more notice and ownership over their plan to exercise. It is too early to tell exactly what impact the prescription may have in changing their level of exercise long-term, but studies suggest it will increase their adherence to exercise long-term.

- Plan for long term patient follow-up
  - Assess exercise prescription ability to help patient achieve and maintain moderate exercise for ≥30min 5 days/week.
7-Evaluation of Effectiveness and Limitations

Effectiveness

- Exercise prescriptions have been shown to improve patient adherence to exercise long-term compared to counseling alone.
- Exercise prescriptions are now easily written and provided to patients through PRISM.
- Providers find them easy to complete and use.
  - Ease of use by providers was identified as a major barrier to implementing successful exercise prescriptions in recent review articles.
- Patients appear to be more receptive to exercising and take more notice of the need to exercise when being told they are getting a prescription specifically for exercising.

Limitations

- **Time frame**: It will take months to see the early effects of the exercise prescriptions, and many years to see if they change patient’s long-term lifestyle with regards to exercise.
- **Short duration of provider usage of exercise prescription**: While the prescriptions seem easily used now, it is difficult to predict how frequently they will be used by providers and if there will be any complications in using the prescriptions in the future.
- **No current computerized tracking flowsheet**: While the *Exnote* dot-phrase provides some documentation to track patient progress, it would be best to track progress in a similar manner to how blood pressure is tracked, but this requires PRISM administrator creation and could not be achieved in 5 weeks. However, providers were provided with information on how to do this if they decide it is something patients would benefit from.
8-Recommendations for Future Interventions

- Longitudinal, randomized controlled trial to assess effectiveness of exercise prescription to enhance patient adherence to exercise routine.
  - Include detailed analysis to identify subgroups who may fail to benefit, and revise exercise prescription and methodology accordingly

- Assessment of provider continuity of exercise prescription usage. Specifically, check for continued ease of use and identify areas for improvement from a systems perspective

- Creation of specific dot-phrases for specific disease populations

- Create flowsheet in PRISM to provide more user-friendly tracking of patient’s exercise and integrate this with patient health outcomes such as weight change, HbA1Cs, blood pressure etc., which would be expected to improve with increased patient exercise
9-References


7. Green Mountain Council Board. gmcboard.vermont.gov

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview. Yes ___X___ / No ___X___  (All Yes and 1 No)