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Ramya Ghantasala

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Improving Diabetes with an Exercise Log

RAMYA GHANTASALA

LARNER COLLEGE OF MEDICINE, CLASS OF 2019

FAMILY MEDICINE, OCTOBER - NOVEMBER 2017

NEWTOWN PRIMARY CARE

PROJECT MENTOR: DR. CATHERINE SHANAHAN

Problem Identification: Diabetes and Exercise

- The prevalence of diabetes has been increasing worldwide, and its prevention and management is an important concern of primary health care⁵
- Exercise has been shown to improve blood glucose control and prevent and delay the progression of diabetes, but many people with diabetes do not regularly exercise¹
- There are many barriers to regular exercise, some of which may be lack of motivation or perceived lack of time

****How can we improve motivation and adherence to exercise in patients who have diabetes?****

Public Health Burden

- Similar to the rest of the United States and the rest of the world, diabetes is a problem in Connecticut
- In the *Connecticut Diabetes Statistical Report, 2016*²
 - 8.9% of the Connecticut population has been diagnosed with diabetes (about 250,000 adults)
 - “Estimated 22.6% of Connecticut adults participate in no leisure time physical activity”
- In the *Burden of Diabetes in Connecticut – 2010*⁴
 - “The total cost of diabetes for people in Connecticut was estimated at \$2.43 billion in 2006”
 - Includes direct (medical) and indirect costs
 - Cost has likely increased in 2006, considering the increasing prevalence of diabetes

Community Perspective

Interview with Hannah Fischetto, medical assistant:

“People don’t take it seriously. They eat junk food and don’t worry about it... I worked in a diabetic wound care center... would see wounds that could not heal properly. Even oxygen treatments didn’t work...People are working, producing money and not worrying enough about their health.”

Interview with Tia Fazliu, medical assistant:

“People aren’t conscious about what they eat... lots of fast food... I used to work at an endocrine clinic... Some patients were able to come completely off of medications just with diet and exercise.”

Intervention and Methodology

- Many fitness websites endorse the use of exercise logs to motivate people to exercise regularly
- There are few randomized-control studies on the use of monitoring in order to increase motivation in exercise, but one has shown that it can increase adherence to exercise³

****Improving motivation via an exercise log may increase the amount of exercise in patients with diabetes and help them achieve better health outcomes****

Intervention:

- Assess how much the patient currently exercises and barriers to exercise that they may be facing
- Informational handout from the *American Diabetes Association* about diabetes and the importance of physical activity: *“Getting Started with Physical Activity for People with Diabetes”*
- Exercise log to keep track of exercise

Preliminary Results

- 6 patients were involved in the study
- 3 patients reported engaging in regular exercise >150 min per week
- 3 patients stated they did not engage in regular exercise
- Of the patients who stated they did not engage in regular exercise, barriers cited were:
 - Lack of routine
 - Back pain
 - Lack of time/too busy
 - Tired

Preliminary Results

ADA handout “*Getting Started with Physical Activity for People with Diabetes*”:

- Patients appeared to appreciate the information

Use of an exercise log:

- Patients appeared willing to try the exercise log and see if it may benefit them in engaging in regular exercise
- Two of the three patients engaging in regular exercise stated that they already use monitoring, either with a phone application or keeping a record at the gym

Evaluation of Effectiveness

Short-term Effectiveness:

- At the next follow-up visit:
 - Have the patient bring the exercise log
 - Ask the patient whether they found the log to be helpful or motivating
 - Compare the patient's reported exercise prior to and after the intervention

Long-term Effectiveness:

- Continued follow-up with the exercise log at each visit (having the patient bring it in if necessary) to assess whether it provides a temporary or long-lasting benefit
- Determine whether patients who eventually stop using the exercise log continue to regularly exercise or revert to pre-intervention levels of exercise
- At each following visit, would ask the following questions:
 - Are you still using the exercise log?
 - If yes, do you still find it helpful/motivating? Are you regularly exercising while using it?
 - If no, when did you stop? Do you continue to regularly exercise without using it?

Limitations of the Study

- Study is small with only six patients involved, results may not apply to broad population
- Study is short, only about 4 weeks in duration and no follow-up with patients has been possible

Reasons why an exercise log may not be effective:

- Patients may still not have motivation to use the exercise log
- Patients may still not have time to use the exercise log and be able to exercise
- Patients may lose the exercise log

Future Endeavors

- If the intervention appeared beneficial, determine which part(s) were most motivating through survey of participants or using only one intervention at a time
 - Informational handout from ADA about diabetes and the importance of physical activity: *“Getting Started with Physical Activity for People with Diabetes”*
 - The exercise log
- Introducing patients to a particular phone application to self-monitor exercise since it may be more easily accessible and harder to lose than a sheet of paper
- Same intervention with closer follow-up after the exercise log is given to reinforce behavior, including follow-up by phone a few days after the initial appointment and in-person follow-up appointment in a few weeks to discuss exercise

References

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5. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. *Diabetes Care*. 2004;27(5):1047-53. - prevalence of DM worldwide increasing

Interview Consent Form

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 / No

If not consenting as above: please add the interviewee names here for the department of Family Medicine information only.

Name: