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Using your phone as a weight-loss tool

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New Milford Primary Care
Rotation #6, 2019-2020
Mentor: Peter L. Anderson, MD
2A: Problem Identification

Over one-third of the adult population in the United States is obese (BMI>30) [1] and this proportion is expected to continue to increase to half by 2060 if the incidence continues to grow at the rate it has. [7]

Obesity is a risk factor for many chronic diseases, such as type 2 diabetes, cancer, hypertension, asthma, myocardial infarction, stroke, osteoarthritis and other psychological disturbances. [3][4] In obese patients, the relative risk for developing Type 2 Diabetes is >5. The relative risk for stroke, MI, hypertension and All-cause mortality is >2.5. [4]

The Framingham Heart Study estimated that an obese 40-year-old female nonsmokers lost 7.1 years and obese 40-year-old male nonsmokers lost 5.8 years. The Years of life lost associated with obesity was similar to that observed with smoking. [2]
2B: Problem Identification at New Milford Primary Care

• In Litchfield County **28.7% of females and 30.1% of males are obese.** [5]
  - Between 2000 and 2011, obesity increased by 35.2% in females and by 32.1% in males. [5]

• The 2015 Dietary Guidelines Advisory Committee report determined “nutrients of public health concern” in the US and the population under-consumes calcium, fiber, iron, potassium, and vitamin D while overconsuming saturated fat and sodium. [9]

• During visits with obese patients at Primary Care office at New Milford Hospital who were actively trying to lose weight it was frequently mentioned that they:
  - did not know what the recommended daily caloric intake is their height and sex
  - were not able to estimate their caloric or nutritional intake
  - had a good understanding of how to add exercise into their routine but were not sure how to make dietary changes
3. Public Health Cost

The annual medical spending in the United States attributable to an obese individual was $1901 ($1239-$2582) in 2014, accounting for $149.4 billion USD at the national level. The global economic impact of obesity is estimated to be $2.0 trillion USD \[6\]

Obesity also imposes costs in the form of lost productivity and lost economic growth as a result of lower productivity at work, mortality, and permanent disability. \[8\]
4. Community Perspective

"Is obesity a medical problem in our area?- My answer is an absolute yes. It’s a real problem in NW Connecticut. As a pediatrician and Adult Internist caring for a fairly rural population, I have observed that a greater and greater percentage of my patient population (including 40% of kids) are overweight or obese today. While the cause is certainly multifactorial, I would contend that the major cause is related to changes in cultural behavioral patterns- i.e. diet changes in processed and higher calorie foods and patterns reflecting a lifestyle that has been less engaged at mealtimes and also less active in general. All of this has contributed to a vicious cycle of weight gain and has led to increased frequency of secondary medical morbidity, such as diabetes and heart disease, in our community. So yes, definitely, obesity is a problem and helping reduce obesity will improve overall public health. “
- David K. McIntosh, MD, FAAP

“Obesity is rampant in the United States and increasing at an alarming rate. Obesity is a major risk factor for diabetes, cardiovascular disease, cancer, osteoarthritis, etc. Losing weight is challenging because unlike smoking and drinking- you must eat! So you always have choices to make. And it involves habits that are ingrained social interactions. Everyone finds it challenging to lose weight- helping us improve the weight of our patients individually and society collectively is a major goal. “
- Peter L. Anderson, MD
## 5A. Intervention & Methodology

<table>
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<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Discussed with obese patients, community providers and dieticians the most significant challenges patients face when trying to lose.</td>
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<td>2</td>
<td>Reviewed literature on success of calorie-controlled diet and cardiovascular exercise as means for achieve long-term weight loss.</td>
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<td>3</td>
<td>Tested various free phone applications that track food intake and exercise and found that MyFitnessPal was most user-friendly and best fit goals of patients</td>
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<td>4</td>
<td>Interested patients set up the MyFitnessPal application on their smart phones and logged for 1-2 weeks.</td>
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<tr>
<td>5</td>
<td>2 week follow up to meet with medical student or dietician to review records and set up nutrition plan. Follow-up every 3 months to assess weight loss.</td>
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5B. Intervention & Methodology

- Obese patients interested in losing weight are guided through how to use MyFitnessPal by the rotating medical student. The app itself has a built-in tutorial for first time users.
- Follow-up appointments include measurements of weight and blood pressure.
- What can the MyFitnessPal app do?
  - Physical activity and nutrition tracking
  - Extensive database of foods (you enter ingredients and you get calories, etc.)
  - Syncs with other trackers and apps (any fitness app or tracker) and adjusts daily calorie allotment based on calories burned during activity tracked
  - Add friends on the app to help create a support system of peers with the same goal
6. Responses

• Practitioners at New Milford hospital were excited about the use of an app to help patients better track their eating habits and exercise

• Patients were receptive and eager to use an application to help track their food intake and weight loss progress

• Many patients were surprised at both their recommended daily caloric intake and their actual recorded caloric intake

Patient response:

“I love that it connects with my FitBit so I can track my exercise too!”

“Woah, I’m eating 1,500 calories more than I should?! No wonder I’m not losing weight!”

“I didn’t realize how much sugar I was eating in my breakfast.”

“I’m going to make my husband do this with me!”
7A. Evaluation of Effectiveness (Future)

- Following up with patients every 8-12 weeks and reviewing inputted data to assess weight loss progress
- Track changes in patient’s weight over time
- Survey of patients on their perception of the effectiveness, ease of use, and time spent using the application
7B. Evaluation of Limitations

- Time constraints of the clerkship and thus the inability to properly assess the effectiveness of the application.
- Initial app coaching session adds time to the appointment slot.
- Medical student, nurse, MA or physician needs to take time to answer any questions about the application and challenges in use.
- Requires access to smart phone or computer with internet access.
- Successful use of app requires some level of technical literacy.
8. Recommendations for future interventions

- Use of a control group of patients trying to lose weight that are not using MyFitnessPal or any other tracking app in order to compare weight loss.

- Tracking changes in other measurements:
  - Blood pressure
  - A1C
  - Lipids

- Incorporating exercise regiments into the application and providing patients with a food scale to more accurately record intake.
9. References


