

University of Vermont

ScholarWorks @ UVM

Family Medicine Clerkship Student Projects

Larner College of Medicine

2020

Using your phone as a weight-loss tool

Sidika Kajtezovic
UVM

Follow this and additional works at: <https://scholarworks.uvm.edu/fmclerk>




Part of the [Medical Education Commons](#), and the [Primary Care Commons](#)

Recommended Citation

Kajtezovic, Sidika, "Using your phone as a weight-loss tool" (2020). *Family Medicine Clerkship Student Projects*. 544.

<https://scholarworks.uvm.edu/fmclerk/544>

This Book is brought to you for free and open access by the Larner College of Medicine at ScholarWorks @ UVM. It has been accepted for inclusion in Family Medicine Clerkship Student Projects by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.

A hand is holding a smartphone vertically. The screen of the phone is dark and displays white text. The text is centered and reads: 'Using your phone as a weight-loss tool'. Below this, in smaller text, it says: 'Sidika Kajtezovic, MS3', 'New Milford Primary Care', 'Rotation #6, 2019-2020', and 'Mentor: Peter L. Anderson, MD'. The background is black.

Using your phone as a weight-loss tool

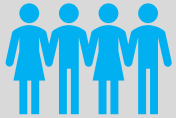
Sidika Kajtezovic, MS3

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]

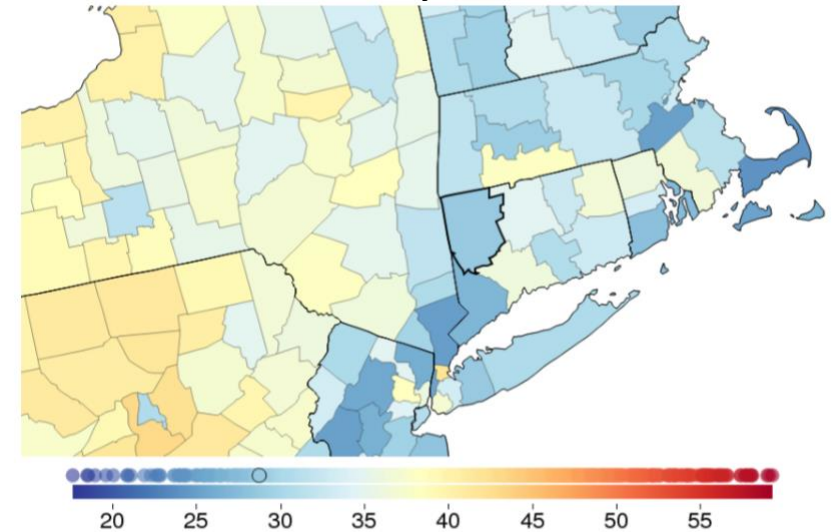


The Framingham Heart Study estimated that an obese 40-year-old female nonsmokers lost 7.1 years and obese 40-year-old male nonsmokers lost 5.8 years. The Years of life lost associated with obesity was similar to that observed with smoking. [2]

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

Female Obesity, 2011 [4]



Male Obesity, 2011 [4]

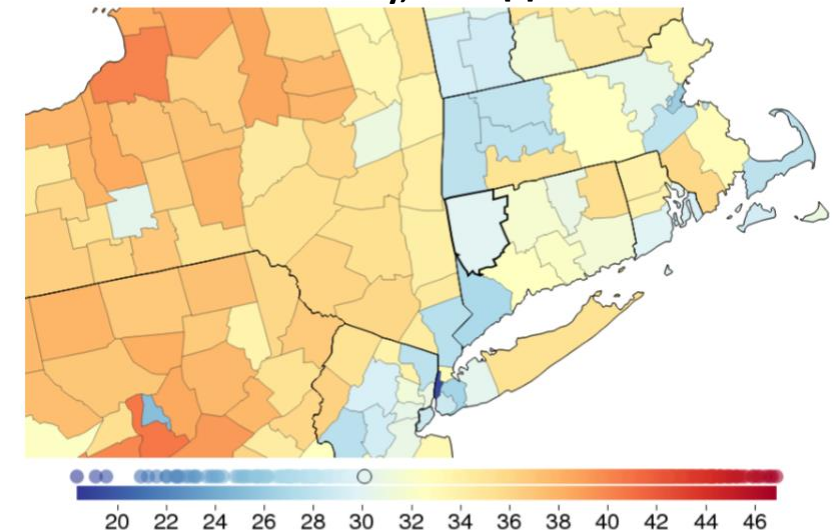


Figure from Institute for Health Metrics and Evaluation, 2016.

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 ramped 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



Discussed with obese patients, community providers and dieticians the most significant challenges patients face when trying to lose.



Reviewed literature on success of calorie-controlled diet and cardiovascular exercise as means for achieve long-term weight loss.



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



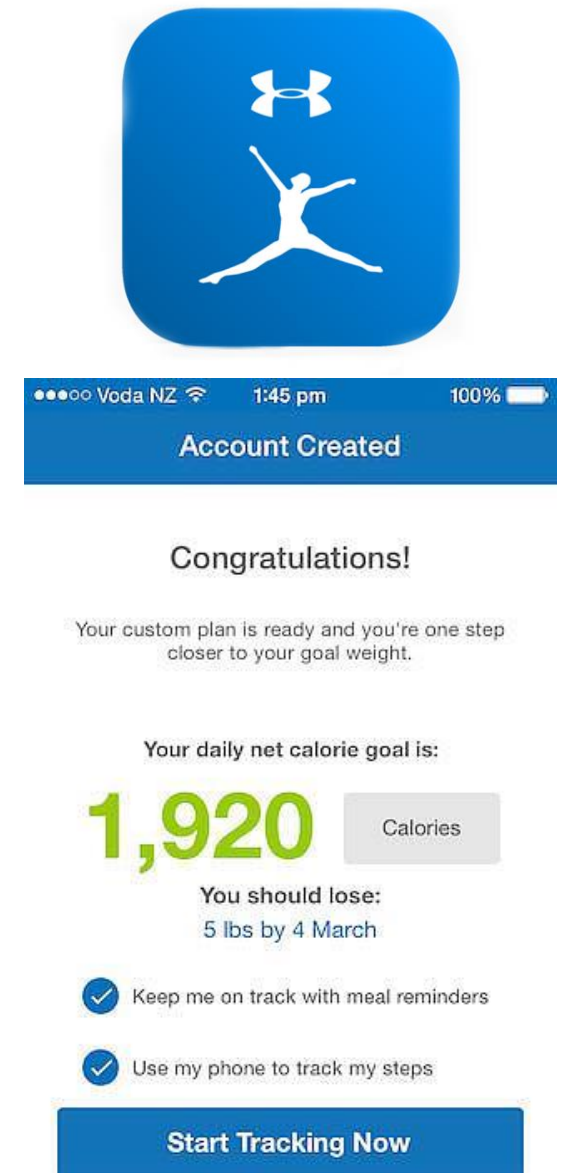
Interested patients set up the MyFitnessPal application on their smart phones and logged for 1-2 weeks.



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.

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 includes 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 great 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

1. Wang, Y., Beydoun, M.A., Liang, L., et al., 2008. Will all Americans become overweight or obese? Estimating the progression and cost of the US obesity epidemic. *Obesity (Silver Spring)* 16, 2323–2330.2
2. Peeters, A., Barendregt, J.J., Willekens, F., et al., 2003. Obesity in adulthood and its consequences for life expectancy: a life-table analysis. *Ann. Intern. Med.* 138, 24–32.
3. Hu FB. *Obesity Epidemiology*. .. Oxford, UK: Oxford University Press, 2008.
4. Dixon JB. The effect of obesity on health outcomes. *Molecular and cellular endocrinology*. 2010;316:104–108. doi: 10.1016/j.mce.2009.07.008.
5. Institute for Health Metrics and Evaluation (IHME), *US County Profile: Litchfield County, Connecticut*. Seattle, WA: IHME, 2016.
6. Kim DD, & Basu A (2016). Estimating the Medical Care Costs of Obesity in the United States: Systematic Review, Meta-Analysis, and Empirical Analysis. *Value in Health*. 10.1016/j.jval.2016.02.008
7. Dobbs R., Sawers C., Thompson F., Manyika J., Woetzel J.R., Child P., McKenna S., Spatharou A. *Overcoming Obesity: An Initial Economic Analysis*. McKinsey Global Institute; Jakarta, Indonesia: 2014.
8. Tremmel M, Gerdtham U-G, Nilsson PM, Saha S. Economic burden of obesity: a systematic literature review. *Int J Environ Res Public Health*. 2017
9. USDA . *Scientific Report of the 2015 Dietary Guidelines Advisory Committee*. Washington DC; 2015.