Predict Likelihood of Completion for Future Lifestyle Medicine Program

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Background

- Lifestyle Medicine has 6 pillars that are focused prevention and reversal of chronic diseases
- The United States spends more on per capita health care than any other country.
- 90% of the Heath Care dollars are spent in the treatment of chronic diseases and their complications.

Project Goals

Research → Data Set → Prediction Model

Research:
- Likelihood for self selection into LM program
- Likelihood for completion of LM program
- Possible Psycho-demographics

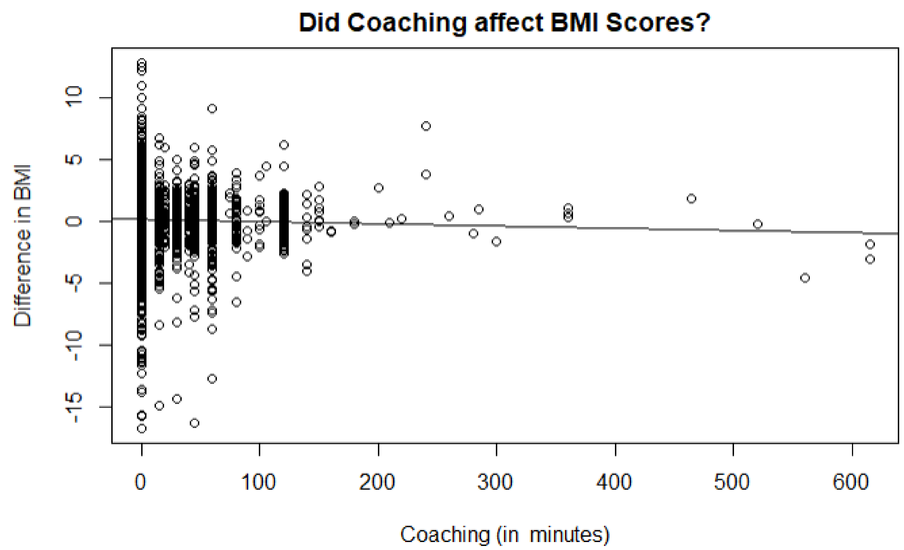
Data Set:
- Find a data set
- Perform data cleaning and analysis

Prediction Model:
- Look at what psycho-demographics affect self-selection and completion of LM program

Motivation

Contact Businesses to implement LM programs as apart of their insurance policies
- Reduction in prevalence and incidence of chronic disease
- Reduction in medical claim costs for employers

Results



Percent of those that enrolled in coaching that fall into a BMI category		
BMI Category	Male (%)	Female (%)
18.5 – 24.9	8.46	9.19
< 18 or 25 – 29.9	9.37	11.5
30 – 34.9	12.6	18.2
35 – 39.9	19.5	22.2
>= 40	20.2	28.0

Conclusions

- Between year 2 and year 1 evidence shows a lack of improvement in health of employees who participated in health coaching; thus, evidence does not support that employers should pay for a HRA
- Since Both genders have similar trends in enrollment there shouldn't be different approached for men and women
- BMI is a good screening category to see if an individual is likely to self select themselves into a Lifestyle Medicine Program
- Future work needs to be done to make a list of psycho-demographics that are known to predict likelihood of self-selection and completion

Methodology

Literature Reviews

Lifestyle Medicine Program Effectiveness
- Intervention Lifestyle Medicine groups having fewer inpatient admissions

Psycho-demographics
- Occupational level, if advice was given, income level, social economical constraints, and income level

Machine Learning
- Natural Language processing with use in health records, simulated data and random forests.

Treatment of Conditions
- Pain mitigation, Cancer, PTSD

Business Benefits
- Cost saving long term and intervention groups see productivity benefits

Discussion with Experts

Lifestyle Medicine Certified Doctor: Dr, Jacobsohn
- advice on how Lifestyle Medicine is used or prescribed at a hospital.
- Treatment of chronic diseases with LM

Health and Nutrition Coach: Robin Cook
- advice on screening for psycho-demographics
- In her experience self-selected adults tend to want to reverse a disease holistically or to feel/be healthier

Data Analysis

RStudio
Descriptive Statistics & Linear Regression

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