The Compelling Case for Corporate Weight Loss

#RETROFIT℠

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Summary

Introduction

Workplace health and wellness programs can reduce the incremental costs created by overweight and obese employees. Retrofit, a proven weight-loss program that harnesses wireless and remote technology to help participants achieve their weight-loss goals, can reduce costs in the workplace.

Program Methods

Retrofit was provided to adult participants for 12 months. For each participant, a minimum 10% loss of starting body weight was targeted. The program consisted of videoconference-based counseling sessions with a behavioral coach, exercise physiologist, program advisor, and registered dietitian as well as monitoring of weight, physical activity, sleep, and food intake using wireless tracking devices and proprietary software. After the program ended, a logistic regression analysis was conducted to determine how program participation affected weight-loss outcomes.

Program Results

Overall, program participants lost an average of 19.1 pounds, or 8.3% of their initial weight. Participants that achieved their target weight-loss goal lost an average of 35 pounds, or 15.0% of their initial weight at program completion. Number of weigh-ins/week and activity tracker days/week were statistically significant for program success. The odds ratios for weigh-ins/week and activity tracker days/week were 1.22 and 1.24, respectively. Participants that continue to provide weight maintenance data in year two have sustained the vast majority of their year one program losses.

Discussion

Retrofit helps participants achieve and maintain significant weight loss through expert counseling, innovative technology, and program accountability. Offering Retrofit in the workplace can help reduce the costs associated with overweight and obese employees while improving their health.

Introduction

Over two-thirds of American adults are overweight or obese. As weight increases, so does the risk for developing coronary heart disease, type 2 diabetes, cancer, hypertension, osteoarthritis, and many other diseases and medical conditions.[1] These health problems can have significant economic consequences. Studies have shown that overweight and obese people spend $1,429 to over $4,000 more on annual medical expenses than their healthy-weight counterparts.[2,3] In addition to direct medical expenses, obese and overweight individuals drive indirect costs due to absenteeism and presenteeism in the workplace,[4–7] and increased costs of insurance premiums.

Studies show that companies that have implemented workplace health and wellness programs dramatically improved employee health and reduced company costs.[8–11] This white paper demonstrates how weight-loss outcomes correlate with the following factors:

- A multifactorial approach involving nutrition, behavior and exercise
- Emphasis on long-term weight-loss goals
- Routine self-monitoring of weight and physical activity

Companies should consider these factors when evaluating wellness programs for implementation.

Retrofit is a 12-month, expert-led, data-driven program that utilizes innovative technology and allows participants to achieve unrivaled positive outcomes. Retrofit participants use wireless tracking devices and receive videoconference-based coaching sessions with trained behavioral coaches, exercise physiologists, and registered dietitians. The program goal is to reduce an individual's initial starting weight by 10% or 15% over the 12-month period. Providing Retrofit in the workplace can improve employees' quality of life, and significantly reduce or eliminate the proven economic burden of overweight and obese employees on the company.

Program Methods

Participants

The subsequent analyses and results are based on a "graduate" cohort that completed the program by July 2013.

Program Description

Retrofit is a 12-month program designed to reduce a participant's initial body weight by 10% or 15%, a loss that is maintained or further reduced. The program consists of two phases: the weight-loss phase (months 1-6) and the weight-maintenance phase (months 6-12). Participants selected their weight-loss goal (10% or 15%) at enrollment. Next they received a Wi-Fi scale that measures weight, BMI (Body Mass Index), and lean mass. In addition to the scale, participants received a wireless activity tracker. The activity tracker measures daily steps, stairs climbed, estimates calories burned, and monitors sleep behavior. These two devices wirelessly transmit data to Retrofit on a daily basis where it is analyzed by the Wellness Team (WT) and displayed on a personalized online dashboard.

After the devices were activated, participants began their online videoconference sessions at their convenience from the location of their choice with the WT. The WT is managed by a Program Advisor (PA) and comprises three experts: a Behavior Coach (BC), Exercise Physiologist (EP), and Registered Dietitian (RD). Participants in the 10% program met 12 times with their WT and participants in the 15% program met with their WT 24 times during the 12-month program. In these sessions, clients received personalized treatment plans regarding lifestyle, exercise, and nutrition. In addition to the WT sessions and wireless tracking devices, participants were requested to log their daily habits, primarily food and exercise, on their timeline. The timeline, a component of the participant's personalized online "dashboard," summarizes data captured by the wireless devices and serves as a platform for communication between the participant and WT. The interactive dashboard is similar to popular social media websites. Participants received daily feedback on questions and comments that they posted on their dashboard. The WT was also available 24/7 via email, phone, and teleconference for questions and/or support.

Data Collection and Statistical Analyses

All participants provided background information via electronic survey and questionnaire before beginning the program. All other qualitative and quantitative data were collected via the wireless tracking devices and online dashboard. All analyses were performed using Stata 13 software (StataCorp. 2013. Stata Statistical Software: Release 13. College Station, TX: StataCorp LP.). Binary logistic regression models were used to

estimate program effect. For the logistic modeling, participants that completed the program and met their 10% or 15% weight-loss goals were coded as 1. All other participants that completed the program and did not meet their goals were coded as 0. Group comparisons were done using chi-square analyses and t-tests and their nonparametric equivalents when appropriate. Alpha was set at 0.05 for all statistical tests to determine statistical significance.

Program Results

Overall Program Results

249 participants completed the Retrofit program by July 2013. The baseline characteristics of this group are shown in Table 1.

Gender	Age (Years)	Initial Weight (Lbs.)	BMI (Kg/m2)	Fat Mass (%)
Male	44.9	249.6	34.8	34.5
Female	45.3	207.9	34.5	43.7

Table 1. Mean Baseline Graduate Characteristics

Participants, or "graduates", who finished the 12-month program lost an average of 19.1 pounds, or 8.3% of their initial body weight. Additional outcomes are summarized in Table 2. The majority of weight loss occurred during the weight-loss phase (months 1-6). At the end of 6 months, mean weight loss was 17.8 pounds or 7.9% of initial body weight. On average, graduates lost 0.7 pounds per week during the weight-loss phase. Overall, 92% of all graduates had lost weight by the end of the program and approximately 60% lost at least 7% of their initial body weight.

Weight Loss (lbs.)	Weight Change (%)	BMI Change	Fat Mass Change (%)	Steps/day	# Weigh-ins/wk.	# Activity Tracker Days/wk.
-19.1	-8.3	-2.9	-2.0	6603.1	3.3	5.2

Table 2. Mean Graduate Results

Retrofit protocol requires that participants wear their activity tracker daily, as well as report their weight and electronically log their food intake, among other tasks. Retrofit considers these self-monitoring program tasks to be key elements of a successful and healthy weight loss strategy, as research has demonstrated.[12] Graduates that reported their weight on a regular basis lost more weight than graduates that reported their weight sporadically. Graduates that used their wireless scale five or more days per week lost an average of 26 pounds or almost 12% of their weight at the end of the program, as compared to graduates that used their wireless scale less than five days per week

and lost an average of 17 pounds or 7.5% of their starting weight. Participants who fully availed themselves of Retrofit's unique technological benefits achieved greater weight loss than participants who did not. More details on the association between program participation and weight loss are provided by the following logistic regression results.

Logistic Regression Analysis

Baseline age, gender, BMI, lean mass, and weight did not differ statistically between participants that achieved their target weight-loss goal and those that did not (Table 3). Program results by group are presented in Table 4. Graduates that reached their target weight-loss goal took more steps per day and were more diligent about following the Retrofit protocol via utilization of the weight and activity monitoring technology. Graduates that achieved their weight-loss goal averaged a 35-pound weight loss, or 15% of their initial weight.

Characteristic	10% or 15% Weight Loss	< 10% Weight Loss
N	77	172
Age	46.5	44.6
BMI	35.3	34.3
Female Gender (%)	69	59
Lean Mass (lbs.)	132	134.5
Weight (lbs.)	227	222.1

Table 3. Mean Baseline Characteristics by Weight-loss Group

Outcome	10% or 15% Weight Loss	< 10% Weight Loss
Weight Loss (lbs.)	34.7	12.1
Weight Change (%)	15.1	5.3
Steps/day	7405.5	6243.8
# Weigh-ins/wk.	3.9	3.0
# Activity Tracker Days/wk.	5.7	4.9

Table 4. Mean Outcomes by Weight-loss Group

Controlling for age, BMI, and gender, program participation drives weight loss as seen in Table 5 according to our logistic regression model. Number of weigh-ins per week and activity tracker days per week were statistically significant. For each additional day per week that a graduate weighed in they increased their odds of hitting their target goal by 22%. Additionally, with each additional day per week that the activity tracker was worn, graduates increased their odds of hitting their target goal by 24%.

Variable	Odds Ratio	95% Confidence Interval
Female Gender	1.35	0.74-2.45
BMI (Initial)	1.02	0.99-1.06
Age	1.01	0.98-1.04
# Weigh-ins/wk.*	1.22	1.02-1.47
# Activity Tracker Days/wk.*	1.24	1.01-1.54

Table 5. Logistic Regression Results (*Statistically significant)

Discussion

Retrofit can help overweight and obese people achieve significant weight loss, as well as maintain the weight loss. The program's unique combination of technology, behavior change counseling, and program flexibility empowers participants to achieve substantial weight reduction as well as avoid future weight gain. Participant accountability is provided actively by the WT and passively through the personalized online dashboard. Most graduates have maintained their weight and some have reported safely losing additional weight after completing the program. Graduates who still report their data have maintained within 0.5% of their weight at program completion.

The majority of Retrofit graduates experienced a clinically significant amount of weight loss, or 7.0% of their initial body weight. Studies have shown that a 5.0% weight loss or greater is clinically significant or meaningful.[13,14] This weight loss translates into improved individual health outcomes. A weight loss of 7.0% can significantly reduce an individual's risk of developing medical conditions such as diabetes, high cholesterol, and cardiovascular disease. Improved health outcomes save hundreds of thousands of dollars in medical expenses and improve quality of life.[3,5–7,15]

Not only do these savings benefit the individual, but they also translate to the workplace. A 5.0% weight loss has been shown to reduce absenteeism and presenteeism.[15] Substantial return on investment of workplace wellness programs have become commonplace in today's health care environment.[9,16] Another recent study found that 10 modifiable health risk factors are linked to one fifth of employer-employee health care spending. Obesity is one of these factors, and is associated with all of the others. These factors accounted for 22% of total annual spending or roughly $82,000,000 by the employers.[17] Theoretically, any workplace wellness program can reduce company health care costs. However, implementing one that will deliver consistent and significant employee outcomes while monitoring real-time employee progress is difficult.

The design of the Retrofit program holds participants accountable for an entire 12 months unlike most weight-loss programs. As shown by this analysis, program participation drives weight loss. If participants follow the Retrofit protocol, they are statistically more likely to reach their weight loss goal. Participants are asked to weigh in on their scale and use their activity tracker every day. These are two of the most basic components of the Retrofit program and with each additional day per week that one of these devices is utilized, the participant is 25% more likely to hit their goal and/or achieve clinically (and economically) significant weight loss.

Program participation is reinforced by personal feedback from wellness experts on a daily basis. Steps taken, weight, BMI, sleep patterns, and food and exercise logging are captured, summarized, and disseminated to the participant in real-time via a customized online dashboard. Retrofit guarantees that participants will achieve their weight-loss target if they follow their manageable and tailored weight-loss protocol.

Because program participation drives outcomes, and incentives increase weight-loss success,[18,19] it seems appropriate for employers to subsidize the cost of this program to the employee based on the level of employee participation. For example, employers could subsidize a percent of program cost based on daily or weekly measures of steps taken, number of weigh-ins, or meals logged by the participant. This incentive would promote program adherence, which would improve health outcomes for employees and reduce health care costs for your company. And perhaps most importantly, employers will be able to monitor Retrofit utilization by its workforce and see how it translates directly to healthier employees with real data via the online company dashboard. Employers can measure and realize a return on their investment with Retrofit.

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Appendix 1

Detailed Tables

Gender	N	Age	Weight (Lbs.)	BMI	Fat Mass (%)
Male	94	44.9(11.2)	249.6(55.2)	34.8(7.4)	34.5(16.2)
Female	155	45.3(10.1)	207.9(49.2)	34.5(7.7)	43.7(8.8)

Table 6. Mean Baseline Graduate Characteristics (SD)

Weight Loss (lbs.)	% Weight Change	BMI Change	Fat Mass Change (%)	Steps/day	# Weigh-ins/wk.	# Activity Tracker Days/wk.
19.1(16.4)	8.3(6.4)	-2.9(2.5)	-2.0(5.3)	6603.1 (3443.4)	3.3(1.7)	5.2(1.6)

Table 7. Mean Graduate Results (SD)

Characteristic	10% or 15% Weight Loss	< 10% Weight Loss
N	77	172
Age	46.5(11.2)	44.6(10.4)
BMI	35.3(8.1)	34.3(7.4)
Female Gender (n)	53	102
Lean Mass (lbs.)	132(32.3)	134.5(32.6)
Weight (lbs.)	227(59.2)	222.1(53.5)

Table 8. Mean Baseline Characteristics by Weight-loss Group (SD)

Outcome	10% or 15% Weight Loss	< 10% Weight Loss
N	77	172
Weight Loss (lbs.)	34.7(16.1)	12.1(10.9)
% Weight Change	15.1(4.8)	5.3(4.4)
Steps/day	7405.5(3555.3)	6243.8(3340.5)
# Weigh-ins/wk.	3.9(1.9)	3.0(1.6)
# Activity Tracker Days/wk.	5.7(1.5)	4.9(1.6)

Table 9. Mean Outcomes by Weight-loss Group (SD)

Variable	Odds Ratio	95% Confidence Interval
Female Gender	1.35	0.74-2.45
BMI (Initial)	1.02	0.99-1.06
Age	1.01	0.98-1.04
# Weigh-ins/wk.*	1.22	1.02-1.47
# Activity Tracker Days/wk.*	1.24	1.01-1.54

Table 10. Logistic Regression Results (*Statistically significant)

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