Weight Loss Maintenance Prevalence and Education to Improve Self-efficacy for Physical Activity and Eating Behaviors

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Introduction & Background

Introduction

- Overweight and obesity are associated with increased risk for preventable morbidity and mortality[1]
- Significant weight loss of 5%-10% reduces risk for comorbidities and leading causes of premature mortality[1,2,3,4]
- Maintenance of weight loss and prevention of weight regain is significantly more difficult, lengthy, and costly than the initial weight loss phase due to[5]:
  - Individual and environmental variability
  - Motivation & support
- Rates of successful maintenance vary due to study duration, modality, and heterogeneity
  - Range between 20% to 88%[4,6,7]
  - Gradual weight regain is common after the first 12 months[8]
- Universal support for increasing self-efficacy for long-term maintenance of weight loss

Background

- 70% of adults in the U.S. have overweight or obesity (BMI 25-29.9 and 30+ kg/m^2)[2]
- Contributes to HTN, T2DM, OA, certain cancers[2]
- Significant weight loss and subsequent maintenance for at least 2 years leads to[3]:
  - 30%-60% reduced risk for T2DM
  - Clinically meaningful reductions in LDL, TGs, increases in HDL
  - Clinically meaningful reduction in BP in setting of HTN/T2DM
- Prevalence of maintenance attempts is 25%[9] and unknown at the Johns Hopkins Weight Management Center (JHWMC)
- If weight loss is not maintained, risk factors return and benefits are lost[3]

Purpose & Aims

Purpose: to first **establish weight loss maintenance prevalence** at the JHWMC in patients who received services between May 2014 and May 2019 in order to compare results to the literature; and to then **determine whether structured weight loss maintenance education has an effect on self-efficacy** for physical activity (PA) and eating behaviors in current JHWMC patients with overweight/obesity.

Aims

1. Administer **an online Qualtrics survey** via email link to non-current patients from the past 5 years to establish weight loss maintenance prevalence, characteristics, and associated behaviors.

2. Determine whether an **educational intervention** specific to weight loss maintenance increases scores from pretest to posttest in self-efficacy for physical activity and eating behaviors.

References

Methods

Design: Human subjects research study with initial **survey arm and subsequent educational intervention** delivered to 4 separate groups using PDSA cycles

Setting: Outpatient center for individuals with overweight/obesity in Baltimore, MD

Evidence-Based Intervention

- A **weight loss maintenance education intervention** was delivered using motivational interviewing during the existing weekly group therapy sessions at JHWMC
  - Education based on societal recommendations for PA and self-efficacious behaviors for weight loss maintenance
- Focus was **improving self-efficacy for PA and eating behaviors**
- Participants identified barriers to PA and eating behaviors, developed monitoring plan, and identified internal/external motivators for maintaining weight loss

Measures

- Self-efficacy for Exercise (SEE) Scale
  - A validated and reliable 9-item Likert Scale **measuring self-efficacy for performing daily physical activity** in the setting of common barriers
- Weight Efficacy Lifestyle Questionnaire Short Form (WEL-SF)
  - A validated and reliable 8-item Likert Scale **measuring self-efficacy for performing certain eating behaviors** associated with weight maintenance

Sample: Survey: N= 56, non-current patients
Intervention: N=8, current patients

Results

Survey: Weight Loss Maintenance Prevalence

- Over 40% lost 20-40 lbs
- 75% maintained for at least 6 months
- 32% were able to maintain for 1-2 years after achieving significant weight loss

Survey: Weight Loss Maintenance Education and Behaviors

- 55% reported receiving maintenance education; the rest denied or were unsure
- Walking was the most common type of PA
- 1/3 reported achieving high levels of weekly PA (i.e. >150 min)
- Demographics: 80% female, 20% male; Mean BMI 32 kg/m^2; Mean age 54 years

Intervention: Pretest to Posttest SEE Scale

- Median score improved by 0.5 points using Wilcoxon-Signed Rank test
- Results not statistically significant (p>0.05); N=8

Intervention: Pretest to Posttest WEL-SF

- Median score improved by 0.17 points using Wilcoxon-Signed Rank test
- Results not statistically significant (p>0.05); N=8

Figure 1. *Survey: Weight Loss Maintenance*

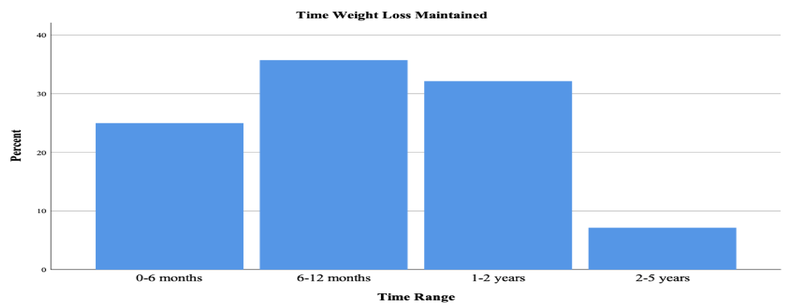

Figure 2. *Survey: Demographics*

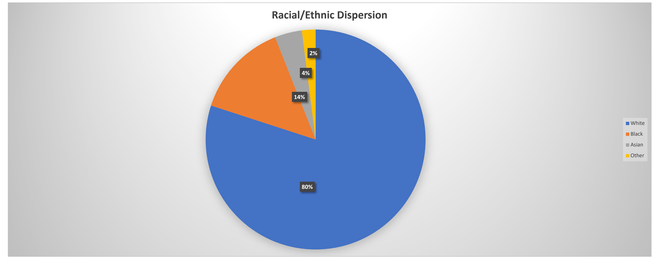

Figure 3. *Intervention: Educational Tool*

Conclusions

- Prevalence of successful weight loss maintenance at the JHWMC **(32%) falls within the reports in the literature (20%-88**%),[4,6,7] although participation in the survey was low and may have reporting/recall biases
- Weight loss **maintenance education should be implemented early**-on in weight loss process, as only 55% reported receiving education
- Reducing likelihood of weight regain remains difficult due to individual variability. Motivational interviewing to improve self-efficacy before embarking on the maintenance journey is **feasible, affordable, and individualized**.
- Further research should focus on implementing motivational interviewing interventions for **weight maintenance in primary care settings**

Dissemination

The data and results of this study will be shared with the director and founder of the Johns Hopkins Weight Management Center, as well as the remaining clinicians. The intervention yielded **an educational tool for maintenance success that can be utilized by clinicians and patients.** As the study is not representative of the general population in Baltimore or the U.S., results are not planned to be published.

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