Executive Summary

TruSage: Sanford Clinic Watertown Efficacy Study

By

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A study of the efficacy of the TruSage telephone support system for weight loss was conducted at the Sanford Clinic Watertown, 901 4th St. NW in Watertown, South Dakota in 2007-2008. The goal of the study was to test the following hypotheses:

h_1: Patients receiving TruSage calls lose significantly more weight than patients not receiving the calls.

h_2: Patients receiving TruSage calls are significantly less likely to drop out of the weight loss program.

Twenty-four (24) weight loss patients received automated telephone calls from TruSage to supplement the regular weight management program offered by the Sanford Clinic. The weight loss data from these 24 TruSage participants were compared to the weight loss of 62 other Sanford Clinic patients who did not receive TruSage telephone calls.

Initial Weight

To make a meaningful comparison, the initial weight of subjects in both the treatment and comparison group must be the same at the outset of the weight management program. Among the 24 TruSage participants, average weight was 250.4 pounds (median=241.0; S.D. = 62.2). Average weight among patients in the comparison group was 236.9 (median=219.0; S.D.=53.1). An independent sample t-test was conducted to determine if the two groups differed significantly in weight at the outset. The 13.5 pound weight difference between groups at the outset was not statistically significant, t (d.f.=84) = -1.01, p (two-tailed test) = .32.

Weight Loss

In the TruSage treatment group, average weight decreased from 250.4 pounds to 207.5 pounds. The average net weight loss for the TruSage participants was 42.85 pounds (median=36.0; S.D.=24.5).

In the comparison group, average weight decreased from 236.9 pounds to 202.9 pounds. The average net weight loss for the patients in the comparison group was 33.94 pounds (median=32.8; S.D.=17.7).

Since the hypothesis was that patients receiving TruSage calls would lose more weight than patients in the comparison group, a one-tailed independent sample *t*-test was conducted on the difference in weight loss between the two groups. The difference was statistically significant, *t* (d.f.=84) = -1.87, *p* (one-tailed test) = .032. Figure 1 displays the relationship graphically.

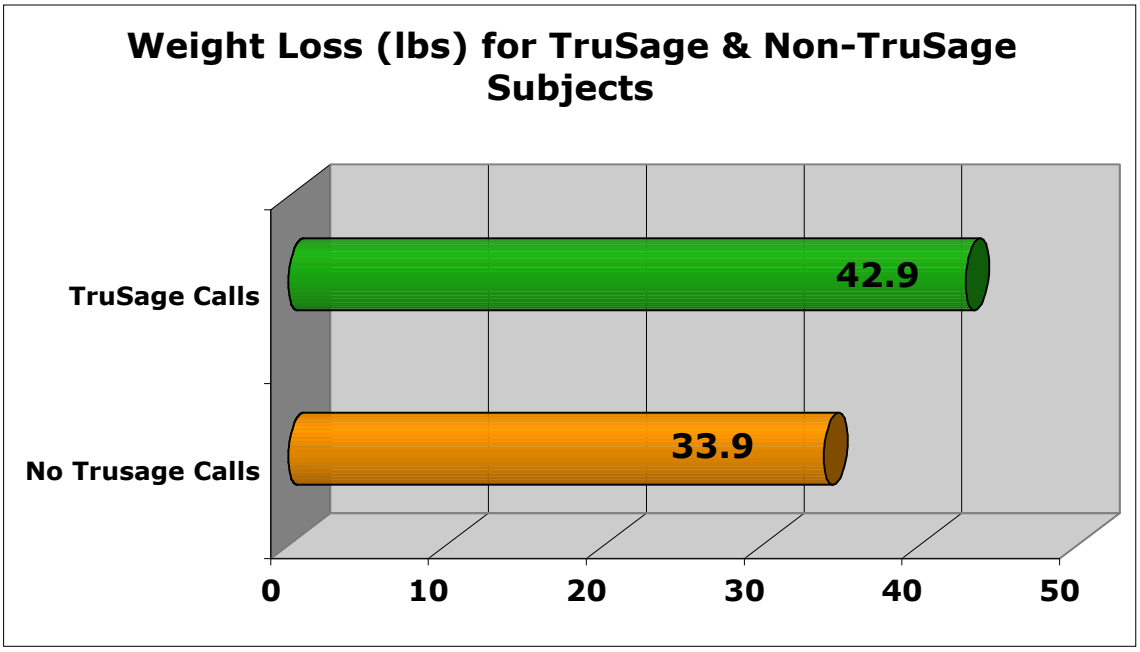

Figure 1. Weight loss (in pounds) from pre-program to post-program for subjects receiving TruSage calls compared to subjects on receiving TruSage calls.

Another way to visualize the weight loss is to examine the pretest to posttest shift in weight. The difference in weight loss between the two groups displayed in Figure 1 is due to the more rapid weight loss among TruSage participants during their participation in the weight loss program, when compared to patients who did not receive TruSage calls. This is displayed graphically in Figure 2.

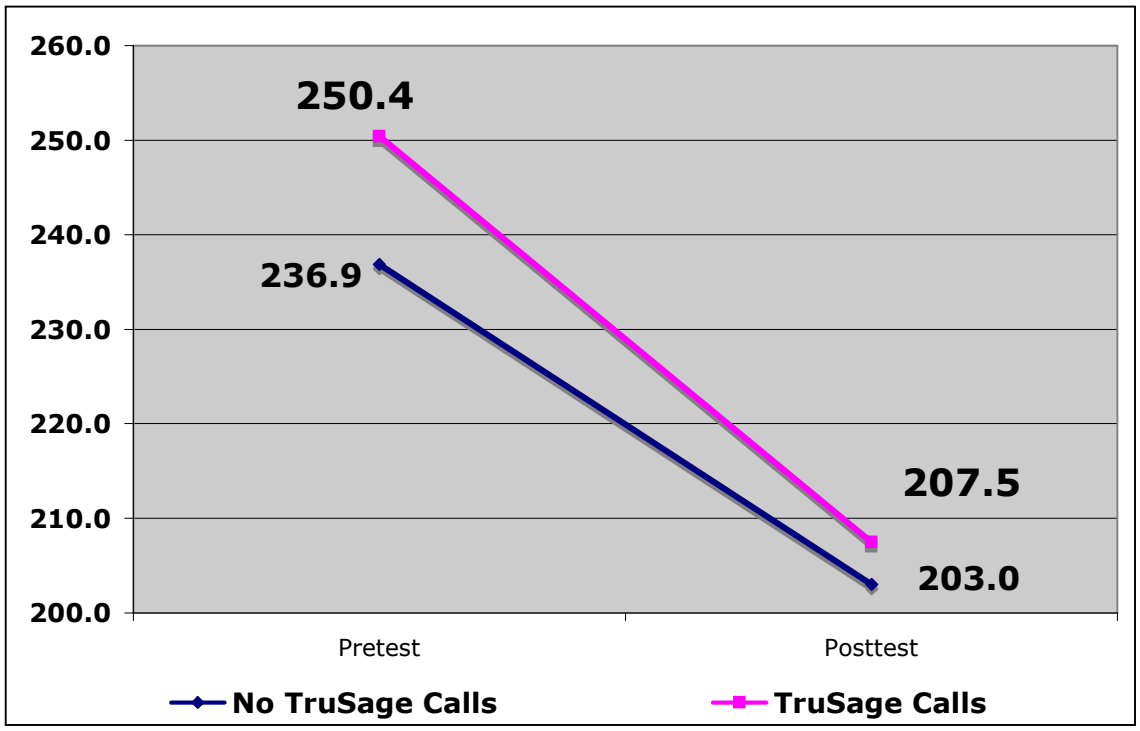

Figure 2. A comparison of pretest to posttest weight loss for patients receiving and not receiving TruSage calls.

Dropping Out

One of the major challenges facing weight loss programs, such as the Sanford Clinic program, is retaining participants after they commit to a weight loss management program. To test the second hypothesis, the drop-out rate of patients receiving the TruSage Calls was compared to the drop-out rate of patients not receiving the calls. All 24 patients receiving the TruSage calls completed the weight loss program, a 0% drop-out rate. Among those not receiving the calls, 9 of 62 patients dropped out, a 14.5% drop-out rate.

To test whether the difference was significant, given the small number of subjects in the study, Fisher's Exact Test was used. The one-tailed test was statistically significant (p = .04). In addition, the Spearman correlation coefficient (suitable for ordinal-level data) was computed and tested for significance. The relationship was statistically significant, Spearman's rho = -.21, p (one-tailed) = .03. The relationship is graphically displayed in Figure 3.

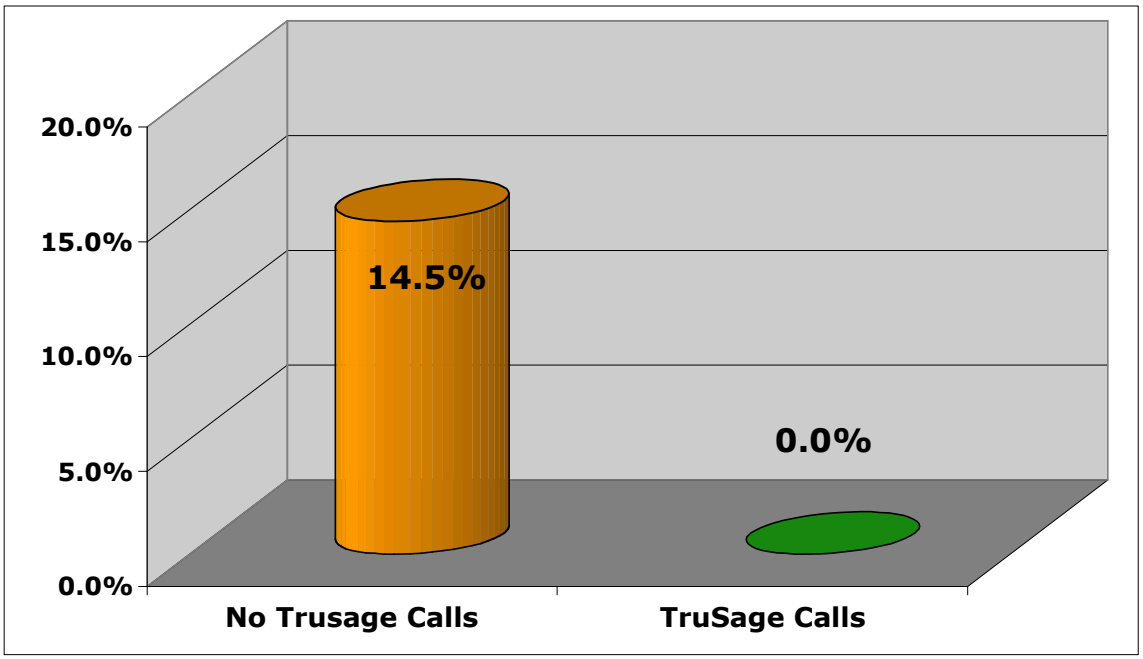

Figure 3. Drop-out rates for patients receiving and not receiving TruSage calls.

Limitations

The study utilized a nonequivalent control group design, meaning that subjects were not randomly assigned to either the treatment or control groups. Subjects recruited for the TruSage calls were compared to other patients who were not recruited. As such, several threats to internal validity may affect the outcome.

However, the two groups were essentially equivalent in average weight at the outset of the study, indicating that pre-existing differences between groups with regard to the dependent variable were not statistically significant.