Use of a web-based assessment in obesity treatment: Association with treatment continuation vs. dropout

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ABSTRACT

The present study examined the relation between compliance with a web-based assessment and feedback system and continuation in obesity treatment. We hypothesized that patients who voluntarily completed the assessment would be more likely to continue in treatment than patients who did not complete the assessment.

The study included 1827 female patients with a BMI of at least 25 (range = 25-65, mean =32.2, SD=6.0). Subjects ranged in age from 18 to 70 (mean = 41.7, SD=11.5). All subjects had sought treatment for obesity from a primary care physician.

All patients were tested with a behavioral/psychological questionnaire at the start of treatment, which was administered over our web-site. Patients were urged to return to the web-site at monthly intervals to redo the questionnaire. It was suggested to patients that regular use of the test might prove to be beneficial to their treatment. Patients completing the questionnaire were provided with immediate feedback, indicating weight change since the previous assessment, and problem areas related to mood, stress and habits. The percentage of patients completing the assessment at each time point were as follows: T1 - 100%, T2 - 56%, T3 - 38%, T4 - 30%.

We present data on the first 4 assessment points. At each time point, patients were classified as continuing in treatment or having dropped out, and whether or not they completed the questionnaire at that assessment. We found that continuation rates at T3 and T4 were higher among those who took the test at T2 (72.4 and 45.9%, vs. 52.8 and 29.9% for those who did not take the test at T2). In order to help clarify this effect, groups were compared on pre-treatment variables, but no significant differences were observed.

These results suggest that repeated use of an assessment and feedback device might improve continuation rates in obesity treatment. However, future experimental studies are required to evaluate the validity of the present finding.

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INTRODUCTION

Recently, an increasing number of researchers have suggested that among the most likely methods for improving long-term weight loss outcomes is to provide patients with continuing treatment.

The question becomes how to keep patients in treatment, given that dropout out rates of about 50% after one month are frequently observed. The present study examined the relation between compliance with a web-based self-assessment and feedback system and continuation in obesity treatment.

We hypothesized that patients who voluntarily completed the assessment would be more likely to continue in

treatment than patients who did not complete the assessment.

We examined continuation rates at three time points (Time 2, Time 3, & Time 4).

METHOD

SUBJECTS

The study included 1827 female patients with a BMI of at least 25 (range = 25-65, mean = 32.2, SD = 6.0). Subjects ranged in age from 18 to 70 (mean = 41.7, SD = 11.5). All subjects were beginning treatment for obesity with a primary care physician.

PROCEDURE

All subjects were tested with a behavioral/psychological questionnaire at the start of treatment. The assessment was administered on-line at our web-site (www.mla.ca) (see Figures 1 - 2 - 3). Patients were asked to repeat the test on a monthly basis.

Subjects completing the on-line assessment receive immediate feedback, indicate their score on a variety of behavioral and psychological dimensions, and behavior change recommendations concerning areas in need of improvement.

Patients were told that the assessment would:

"Allow you to evaluate the habits, attitudes and behaviors which are responsible for your weight problem - to identify the causes."

And that:

"Repeating the test on a monthly basis will give you a tool that will prove indispensable in helping you get rid of bad habits once and for all."

Subjects were classified into three groups at Time 2: Group 1 had dropped out of treatment, Group 2 was continuing but did not complete the psychological assessment at Time 2, and Group 3 was continuing and did complete the Time 2 assessment.

MEASURES

The assessment included measures of age, BMI, and four psychological variables: depression, stress symptoms, perfectionism and uncontrolled eating.

Depression was assessed with 8 items, which demonstrated a fairly high level of internal consistency (alpha = .79). Items measured feelings of hopelessness, sadness, inferiority, worthlessness, and crying.

Stress Reactions comprised 6 items describing various symptoms commonly associated with stress (e.g., headaches, gastrointestinal complaints, difficulty concentrating, dizziness, trembling, profuse sweating and unusual fatigue). This scale had an alpha of .72.

Perfectionism was assessed with 8 items, tapping aspects of perfectionism such as disappointment with self, high expectations, guilt, preoccupation with mistakes, fear of failure, and need to be the best in everything. Alpha was .73.

Uncontrolled Eating was assessed with 12 items measuring a variety of eating behaviors, including rapid eating, eating in front of television, eating impulsively, emotional eating, eating to relax, and eating sweet and fatty foods. Alpha was .74.

STATISTICAL ANALYSIS

We compared Time 2 groups on pretreatment characteristics using analysis of variance.

We used chi-square analysis to compare groups on the proportion of patients who were still in treatment at Time 3 and at Time 4.

RESULTS

Table 1 presents group means on pretreatment characteristics. The only difference of note was that Time 2 dropouts had a slightly lower pretreatment BMI than the groups who were continuing in treatment.

Treatment continuation rates are presented in Figure 5. The primary hypothesis was that patients who completed the assessment at Time 2 would be more likely to continue in treatment. This was supported by our analysis at Time 3, $\chi^2(1, N=1046) = 43.4$, $p < .001$, and at Time 4, $\chi^2(1, N=1046) = 28.9$, $p < .001$. These analyses showed that patients who completed the Time 2 assessment were significantly more likely to still be in treatment at Time 3 and at Time 4.

DISCUSSION

This study represents a preliminary investigation of the usefulness of a new technology in the treatment of obesity. We found that patients who voluntarily participated in our web-based assessment procedure (at Time 2) were more likely to continue in treatment than those patients who chose not to complete the assessment. In fact, completers had a 20% greater continuation rate at Time 3 and 16% greater rate at Time 4.

These results are limited by the correlational nature of the study. Patients who chose to complete the Time 2 assessment may have been different than those who did not - i.e., a self-selection bias may explain the results. However, we were not able to detect any group differences at pretreatment, nor in the amount of weight lost by Time 2.

Clearly it is premature to conclude that the internet assessment can influence treatment continuation rates. Such a conclusion will require future research involving random assignment to conditions. We are, however, very encouraged by the results, given the possibility that the web-based assessment and feedback system may address a crucial problem in obesity treatment. This cost-effective and "always available" treatment tool may help keep patients connected who might otherwise be vulnerable to dropping out.

Figure 5
Treatment continuation vs. dropout and
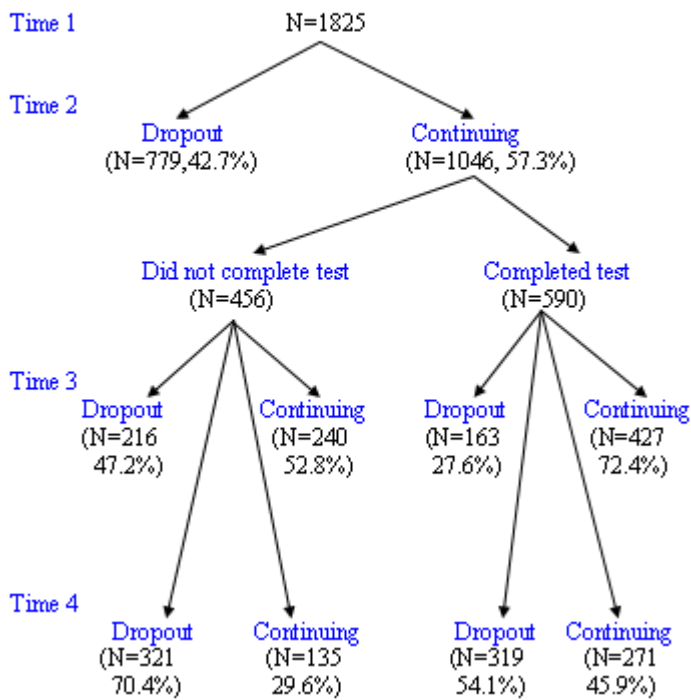**participation in web-based assessment**

Time 1   N=1825

Time 2

Dropout   Continuing
(N=779,42.7%)   (N=1046, 57.3%)

Did not complete test   Completed test
(N=456)   (N=590)

Time 3

Dropout   Continuing   Dropout   Continuing
(N=216   (N=240   (N=163   (N=427
47.2%)   52.8%)   27.6%)   72.4%)

Time 4

Dropout   Continuing   Dropout   Continuing
(N=321   (N=135   (N=319   (N=271
70.4%)   29.6%)   54.1%)   45.9%)

Table 1
Pretreatment characteristics based on
Time 2 classification

	Time 2 Classification			
	Dropout	Continuing, Did not Complete Test	Continuing, Completed Test	$F(2, 1822)$
N (% of sample)	779 (42.7)	456 (25.0)	590 (27.3)	
Age	41.14$_a$ (11.29)	43.15$_b$ (11.66)	41.29$_b$ (11.55)	4.97**
Time 1 BMI	31.60$_a$ (5.51)	32.50$_b$ (6.48)	32.65$_b$ (6.20)	6.03**
Time 2 BMI	----	30.77 (6.32)	30.96 (5.94)	0.24
Depression[1]	14.24 (4.01)	13.86 (3.72)	14.01 (3.92)	0.22
Stress Reactions[1]	12.16 (3.78)	12.23 (3.49)	12.05 (3.59)	0.70
Perfectionism[1]	19.89 (4.04)	19.60 (4.21)	20.05 (3.97)	0.21
Uncontrolled Eating[1]	25.06 (5.86)	25.16 (5.42)	24.85 (5.71)	0.44

Note. Means in the same row with different subscripts indicate significant group differences ($p < .05$).
** $p < .01$ [1]Higher scores indicate more symptoms.