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BRIEF REPORTS

Weight Control During the Holidays: Highly Consistent Self-Monitoring as a Potentially Useful Coping Mechanism

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The study examined the extent to which trait self-monitoring (the systematic observation and recording of target behaviors) was related to weight control during the high-risk holiday season. The participants (32 women, 6 men) averaged 223.1 lbs (101.41 kg), 57.2% overweight, 50.2 weeks of participation, and 21.3 lbs (9.68 kg) lost at the beginning of the study. Consistency of self-monitoring and weight changes were assessed for 3 holiday versus 7 nonholiday weeks. Analyses of variance (Consistency of Self-Monitoring Groups × Holiday/Nonholiday Weeks) revealed that participants gained 500% more weight per week during holiday compared with nonholiday weeks. Only participants in the most consistent self-monitoring quartile averaged any weight loss over the 10 weeks of the study and during the holiday weeks.

Key words: weight control, obesity, self-monitoring, holidays

Theoretical models of self-regulation place self-monitoring, the systematic observation (and usually recording) of target behaviors, in a central role (e.g., Carver & Scheier, 1990; Kanfer & Karoly, 1972; Kirschenbaum, 1987). Treatments for obesity based on these conceptualizations also have viewed self-monitoring as a "cornerstone" (Wadden, 1993, p. 201) and the most effective technique used to help people lose weight and keep it off (e.g., Perri, Nezu, & Viegener, 1992, p. 60). Yet, despite these theoretical and clinical endorsements, self-monitoring remains a secondary focus in the treatment of obesity. It is our contention that the outcome of weight loss may be better served by focusing more directly on the process of self-monitoring (Baker & Kirschenbaum, 1993; Kirschenbaum, 1987). The purpose of this study is to underscore the importance of self-monitoring for weight control by examining the relationship between self-monitoring and weight control during the high-risk holiday season.

In operational terms, focusing more directly on self-monitoring means making self-monitoring a target for intervention and evaluating consistency of self-monitoring routinely when treating this notoriously refractory problem (see reviews by Kirschenbaum & Fitzgibbon, 1995; Perri et al., 1992). Of the hundreds of studies on weight control conducted over the past 30 years, no more than a handful have made self-monitoring a primary focus (e.g., Baker & Kirschenbaum, 1993; Sperduto, Thompson, & O'Brien, 1986), and surprisingly few have included consistency of self-monitoring as a critical process or outcome variable.

Sperduto et al. (1986) showed that self-monitoring improves weight control. These researchers randomly assigned 8 of 16 obesity groups to an experimental condition in which self-monitoring forms were provided. At the end of 15 weeks of treatment and at a 3-month follow-up, the self-monitoring group lost 64% more weight than the comparison group. Also, significantly more self-monitoring participants completed the 15 weeks of treatment than did the groups that did not self-monitor.

Many obese clients who are made aware of the critical role of self-monitoring still fail to maintain this behavior consistently (Baker & Kirschenbaum, 1993; Schlundt, 1988). Several factors may interfere with the highly consistent form of self-monitoring that seems critical for maximal weight control. Encountering high-risk situations, such as those that abound during the holidays (e.g., Drapkin et al., 1995; Head & Brookhart, 1996), may derail effective self-regulation.

Self-regulatory theories (e.g., Baumeister et al., 1994; Kirschenbaum, 1987) suggest that consistent self-monitoring may serve as an effective coping response, providing a buffering effect in high-risk situations (cf. Grilo, Shiffman, & Wing, 1993). In fact, Fisher, Lowe, Jeffrey, Levenkron, and Newman (1982) reported that 39 of their 43 weight controllers used a special "holiday maintenance graph" between Thanksgiving and Christmas. This self-monitoring of weight seemed associated with somewhat better weight control (mean gain = .009 lbs [0.004 kg]) when compared with no self-monitoring (n = 4, mean gain = 0.5 lbs [0.2 kg]).

Portions of this study were presented at the annual conference of the Association for Advancement of Behavior Therapy in November 1996.

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These preliminary observations could use extensive elaboration to examine the relationships between self-monitoring of eating/exercising and weight change during holiday and nonholiday weeks. The high-risk nature of the holidays was expected to be evident in decreases in self-monitoring accompanied by increases in weight when compared with nonholiday weeks. However, participants who showed greater consistency in self-monitoring during the holiday weeks were expected to control their weight better during that time.

Method

Participants

The study's 38 participants (32 women, 6 men) were volunteers from a long-term cognitive–behavioral program for the treatment of obesity. On admission to the program, participants' average weight was 244.69 lbs (111.22 kg, *SD* = 64.77 lbs [29.41 kg]). On the basis of median ideal weights (Metropolitan Life Insurance, 1984), these participants were an average of 76.32% overweight (*SD* = 37.02%).

Before beginning this study, participants had been in the program for an average of 50.18 weeks (*SD* = 65.19) and had lost an average of 21.63 lbs (9.83 kg; *SD* = 25.97 lbs [11.79 kg]). Their mean weight at the beginning of this study was 223.06 lbs (101.39 kg, *SD* = 63.70 lbs [28.92 kg]) with a mean of 57.21% overweight (*SD* = 37.76%). Twenty-eight participants were involved in group treatment and 10 in individual treatment. (For descriptions of the program and its efficacy, see Beliard, Kirschenbaum, & Fitzgibbon, 1992; Kirschenbaum & Fitzgibbon, 1995; Kirschenbaum's, 1994, self-help book served as the treatment manual.)

Thirty-two of the participants were Caucasian, 5 were African American, and 1 was of another ethnic background. Their mean age was 43.60 years (*SD* = 12.23). Fifty-one percent of the sample were single; 44% were married; and 5% were separated, divorced, or widowed. They were generally well educated: 21% had completed only high school, 21% had attended some college, 29% had completed college, and 29% had obtained graduate degrees. Seventy-five percent of the sample were employed full time, 13% were unemployed, 3% were retired, 3% were homemakers, 3% were students, and 3% were employed part time.

Procedure

Each week each participant was provided with a new self-monitoring booklet in which he or she was strongly encouraged to record all food consumed during the week and to count the calories in these foods. The booklet consisted essentially of blank pages with columns for time, food, and calories, which allowed participants to record data in a relatively free format. Each page of the booklet was approximately 4″ wide by 6″ long (10.2 cm × 15.2 cm); the booklet was kept small to make it easily portable. The contents of the booklets were discussed with participants during each of their sessions. Thus, self-monitoring was an integral part of treatment (in addition to behavioral contracting and training in decision making, problem solving, planning, and relapse prevention). Participants were encouraged to use the booklets in the same manner during this study as they had prior to becoming involved in this project. Thus, participants were encouraged to monitor other variables, such as fat grams and exercise, depending on their specific treatment issues.

Each participant's daily monitoring was coded by the researchers as to the occurrence of the various types and quality of variables monitored. These variables included (a) whether the participant had monitored on a given day and (b) whether monitoring had included the whole day or only a portion. Other variables monitored and coded included (c) food, (d) calories, (e) weight, (f) type of situation, (g) where food was consumed, (h) time food was consumed, (i) with whom food was consumed, (j) water consumption, (k) event, or (l) situation in which food was consumed, (m) exercise, (n) mood, (o) fat consumption, (p) caloric total, and (q) "other." Reliability for recording of behaviors monitored was calculated by counting the number of agreements/(agreements + disagreements). Total reliability for two raters was .94 for all 17 variables.

Participants' weights were recorded by therapists during weekly meetings. When a participant missed a session, the mean difference between known weights was recorded. This occurred on 89 of 380 possible sessions (23%).

Design and Measures

The primary dependent measure was weight change per week during 3 holiday weeks (Thanksgiving, Christmas/Hannukah, and New Year's Eve) contrasted with the total of 7 weeks that occurred before Thanksgiving (2 weeks), in between Thanksgiving and Christmas (3 weeks), and following New Year's Day (2 weeks). Preliminary analyses indicated that weight changes were too unstable to afford comparisons using three separate nonholiday periods (before, in between, and after). Accordingly, analyses contrasted average weight changes during the 3 holiday weeks versus the 7 nonholiday weeks. Parallel analyses for changes in percentage overweight were also computed. Because those results mirrored findings for changes in weight (which are more easily interpreted), they are not reported here.

A self-monitoring index was constructed using the six variables that were intercorrelated (mean r = .81, range = .36–.99, α = .77) and also significantly correlated with weight change (mean r = .41, range = .35–.44) in our prior study (Baker & Kirschenbaum, 1993). It provided a more comprehensive and stringent measure of consistency of self-monitoring than would have been possible using any one variable. The index was computed by summing for each day the participant's monitoring of all foods eaten (at least three distinct food entries) + any food eaten + any time food was eaten + any quantity of food eaten + any grams of fat consumed − not monitoring (range = −1–+5 per day). Weekly monitoring indexes were then derived by summing the daily monitoring indexes (range = −7–+35 per week). The 10 weekly monitoring indexes were then added to create a total monitoring index that was used to form the groups based on consistency of monitoring.

Quartiles of Self-Monitors

Preliminary comparisons. Dividing the sample into quartile groups on the basis of participants' self-monitoring indexes resulted in four groups that were not significantly different in percentage overweight, number of weeks in treatment, number of pounds lost, marital status, race, sex, education, employment status, and treatment mode (p values for multivariate analyses of variance and chi-squares >.10).

Weight change. A Group (4 quartile groups) × Time (nonholiday vs. holiday) analysis of variance (ANOVA) was computed using weekly weight change as the dependent variable. Figure 1 shows that the quartiles of self-monitors differed substantially in mean weekly weight change, Group $F(3, 34) = 6.73$, $p = .001$. The highly consistent self-monitors differed significantly from each of the other three groups (Newman-Keuls, $p < .05$). In addition, these participants showed better weight control during the nonholiday

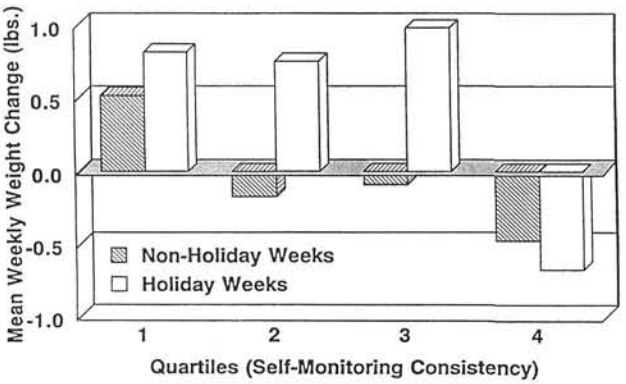

Figure 1. Mean weekly weight change for four quartiles of self-monitoring consistency during holiday and nonholiday weeks. (1.0 lb = 0.453 kg.)

weeks compared with the holiday weeks, Time $F(1, 34) = 5.50$, $p = .025$. The Group × Time interaction was not significant, $p = .173$.

A one-way ANOVA was computed to determine whether the four quartile groups differed in the total amount of weight lost during the 10 weeks of the study. Highly consistent self-monitors lost substantially more weight than did each of the other groups, $F(3, 34) = 5.09$, $p = .005$ (Newman-Keuls, $ps < .05$), an average of 10 lbs more than the low self-monitors.

Self-monitoring. The four quartile groups differed as expected because of group selection criteria in consistency of self-monitoring, Group $F(3, 33) = 106.71$, $p < .001$. The expected difference in consistency of self-monitoring between the holiday and nonholiday weeks also was observed, Time $F(1, 33) = 6.42$, $p = .016$. The interaction (Group × Time) was nonsignificant, $p = .086$.

Discussion

As expected, the holidays demonstrated their high risk for weight controllers by producing substantial decrements in self-monitoring and concomitantly poorer weight control when compared with nonholiday weeks. The benefits of consistent self-monitoring also seemed to extend over the holidays, providing a buffering effect for the potentially adverse impact of the holidays.

More specifically, only the highly consistent self-monitoring quartile averaged any weight loss over the 10 weeks of the study and during the holiday weeks. Of interest is that these highly consistent self-monitors increased their self-monitoring to a degree that was almost significantly greater than that of the other groups during the high-risk holiday weeks. In contrast, the least consistent self-monitoring quartile was the only group that averaged substantial weekly weight gains during both holiday and nonholiday weeks. The fact that only the highly consistent self-monitors maintained effective weight control during the holidays (relative to the other three quartiles) reinforces the importance of "obsessive-compulsive self-regulation" (Kirschenbaum, 1987). It may take nearly perfect self-monitoring to buffer the effects of certain high-risk situational challenges.

The holidays clearly established their potential to challenge even highly experienced weight controllers. In this study, participants gained approximately 500% more weight per week during the holiday weeks compared with the nonholiday weeks. This level of dysregulation occurred for all but the participants who were in the most consistent self-monitoring quartile. Apparently, the disruptions in normal routine, including traveling, changes in normal schedules, higher than normal levels of socialization and entertaining, and increased food temptations (cf. Drapkin et al., 1995; Head & Brookhardt, 1996) resulted in at least some periodic overeating and perhaps decreases in exercise.

Unfortunately, disruptions in restraint can compound the negative effects of short-term weight gain. For example, Wadden, Foster, and Letizia (1992) observed that their participants in a 6-month professional program who showed episodic overeating (perhaps of the sort that occurs during the holidays) were significantly more likely to discontinue treatment than were their other participants. In a related vein, binge episodes were associated with greater difficulties in weight control in several other studies (e.g., Agras et al., 1994). These findings suggest that the impact of the holidays could dampen momentum for many weight controllers, leading to major lapses and perhaps premature termination of treatment.

The mechanisms by which the holidays adversely affect weight controllers warrants further discussion. Research on relapsing has consistently demonstrated the importance of using some coping response, almost any type of coping response, when faced with persistent, high-risk situational challenges (e.g., Drapkin et al., 1995). Self-monitoring at a highly consistent level may help weight controllers produce useful coping responses in high-risk situations. For example, the nature of self-monitoring, a very cognitive and analytical procedure, may diffuse some of the negative affect associated with episodic overeating or with other aspects of the holiday situation (cf. Drapkin et al., 1995). Also, by self-monitoring even episodes of problematic eating, weight controllers can perceive their problems with eating as lapses instead of relapses, make more external attributions, and generally view the situation as more controllable and less stable.

The proposed buffering effects of self-monitoring cannot be established by the current study. It is unknown whether increased self-monitoring led to improved weight control, whether improved weight control led to positive psychological states that led to increased monitoring, or whether other variables not measured affected both weight control and self-monitoring. It is likely that a reciprocal relationship exists between weight control, affect, self-monitoring, and other behaviors. Regardless of the causal nature of this likely complex phenomenon, both prior research (e.g., Baker & Kirschenbaum, 1993; Sperduto et al., 1986) and theoretical analyses (e.g., Baumeister et al., 1994; Kirschenbaum, 1987) suggest that the use of highly consistent self-monitoring may mitigate the effects of high-risk situations.

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