Positive Versus Negative Self-Monitoring in the Self-Control of Smoking

David A. Kantorowitz, Joyce Walters, and Kathy Pezdek
California State College, San Bernardino

This experiment compared smoking treatment programs using negative (recording number of cigarettes smoked) versus positive (recording number of urges resisted) self-monitoring. Subjects participated in one of two similar broad-spectrum treatment programs, within which they either used positive or negative self-monitoring. Over treatment, subjects in both self-monitoring groups demonstrated similarly significant reductions in smoking frequency as compared with a no-treatment control group. These findings were generally maintained at follow-up. Clinical findings call into question the accuracy of the "positive" and "negative" labels used to designate the two self-monitoring modes.

Clinical programs for smoking reduction are generally assessed by subject self-monitoring (Thoresen & Mahoney, 1974). Although several points prior to, during, and after the act of smoking would appear monitorable, clinical researchers have generally asked subjects to record their (a) successfully resisted urges to smoke (positive self-monitoring) or (b) number of cigarettes smoked (negative self-monitoring) (McFall & Hammen, 1971).

Thoresen and Mahoney (1974) have suggested that monitoring resisted urges may prove to be more facilitative to smoking reduction than monitoring the number of smoked cigarettes. Presumably, the act of self-monitoring successfully resisted urges becomes secondarily reinforcing and transforms the urges into S

for self-control. By focusing on number of cigarettes smoked, S

for self-punishment may be created, but since these cues appear after the behavior to be controlled, they may be less helpful in controlling the preceding smoking behavior.

Previous research has attempted to assess the effects of self-monitoring free of confounding treatment techniques. McFall (1970) reported that negative monitoring of "unmotivated" students increased cigarette consumption over a 13-day period, whereas positive monitoring decreased consumption. Working with "motivated" students, however, McFall and Hammen (1971) found similarly significant decreases in smoking among positive and negative monitoring groups. In addition, positive and negative monitoring led to significant changes in study time (Johnson & White, 1971) and in nail-biting (McNamara, 1972), with no significant differences in frequency of smoking between the two modes.

A methodological problem with the aforementioned studies is the confounding of self-monitoring methods with subsequent, uncontrolled usage by motivated subjects of self-evaluation and covert self-praise or punishment (Thoresen & Mahoney, 1974). Additionally, there exists no research comparing different monitoring methods as the assessment vehicle for clinically relevant broad-spectrum self-control programs. This would appear to be an important area in view of the transitory nature of treatment effects produced by self-monitoring alone (Kazdin, 1974). The present study was thus designed to compare positive versus negative self-monitoring as each interacted with similar broad-spectrum behavioral self-control programs for the reduction of cigarette smoking.

Nine volunteer subjects (M age = 36.7) were assigned to self-control with positive monitoring, self-control with negative monitoring, and waiting list control groups. Treatment subjects were randomly assigned to either the positive or negative monitoring groups; subjects who could not attend either of the treatment groups due to scheduling restraints were assigned to the control group. The baseline smoking rates of the positive monitoring, negative monitoring, and control groups were 19.7, 26.8, and 15.6, respectively.
Both self-control treatments consisted of eight 90-minute group meetings distributed twice a week over 4 weeks. To ensure that both experimental groups were taught similar techniques of self-control, each of the treatment sessions was prearranged and standardized. Both groups were instructed to (a) identify, avoid, or isolate cues for smoking, (b) make use of incompatible responses when feeling urges to smoke (such as relaxing, chewing, sucking cloves, etc.), (c) use self-talk and imagery as vehicles for self-reward and punishment, and (d) write contingency contracts for themselves and with others. Subjects in both groups were instructed to reduce their cigarette consumption at their own rate but to attempt to reach abstinence by the eighth session.

Subjects in the negative self-monitoring group were instructed to advance their counters each time they yielded to an urge and decided to smoke. Subjects in the positive self-monitoring group advanced their counters each time they resisted an urge to smoke. Both groups transcribed their daily totals onto written charts, which they brought to treatment sessions.

The control group decreased over treatment by a mean of 1.1 cigarettes a day; one subject reached abstinence. The positive and negative monitoring groups decreased by 14.7 (74.6% of baseline) and 16.8 (62.8%) cigarettes a day, respectively. The number of subjects reaching abstinence were four (positive monitoring) and two (negative monitoring). The follow-up rates of the negative and positive monitoring groups remained, respectively, 16.0 and 10.1 below the baseline of each group; three positive and three negative monitoring subjects remained abstinent.

Because the variance among groups on the pretreatment baseline measure was nonhomogeneous, $F_{max}(3, 17) = 7.28$, $p < .05$, Tukey's a posteriori comparisons among means were made on each of the three treatment groups separately. There was no change in smoking frequency over time for the control group. The negative monitoring group, however, significantly reduced its smoking frequency from baseline to end of treatment ($q = 6.48, p < .01$) and from baseline to follow-up ($q = 6.17, p < .01$). The positive monitoring group significantly reduced its smoking frequency from baseline to end of treatment ($q = 5.68, p < .01$); its smoking frequency was suggestively, but not significantly, different from baseline to follow-up ($q = 3.89$). The nonsignificant finding was due to the highly deviant smoking rate ($z = 5.62$) of one subject. The remaining eight subjects in the positive monitoring group maintained a significant reduction in smoking at follow-up ($q = 5.35, p < .05$).

$t$ tests were performed on the relative differences between baseline and end of treatment, and baseline and follow-up, for the positive versus the negative self-monitoring groups. Contrary to prediction, no significant difference was found between the positive monitoring group and the negative monitoring group at end of treatment or at follow-up. A chi-square analysis of the number of subjects in each group who reached smoking abstinence indicated no difference between positive and negative monitoring at end of treatment or at follow-up. There was a significant difference, however, between the combined self-control groups as compared with the control group at end of treatment and at follow-up, $X^2(1) = 5.39, p < .025$, at both times.

Since both monitoring groups were paired with broad-spectrum self-control programs, it is not possible to conclude that the results support a facilitative effect of self-monitoring alone. The data do indicate, however, that contrary to the speculations of Thoresen and Mahoney (1974), there was no significant difference in outcome between positive and negative self-monitoring when used as the assessment vehicle for a broad-spectrum self-control program.

Interestingly, only one subject in the negative self-monitoring group reported that the self-monitoring treatment was "negative" or self-punishing on a follow-up questionnaire. Most subjects tended to view negative monitoring in the overall context of their treatment goals, frequently citing the self-reinforcing aspects of watching unresisted urges decline. Unexpectedly, five of eight positive monitoring subjects who completed the follow-up questionnaire indicated dislike of and frustration with this method even though their frequency of resisted urges did increase. Generally cited reasons included "preferring to see cigarette consumption decline" or "lacking feelings of accomplishment." Rather than stressing self-reinforcing effects pursuant to resisting urges, positive monitoring subjects stressed heightened frustration due to increased awareness of resisted urges to smoke. These results suggest that "positively" and "negatively" designated self-monitoring modes may be misnomers. Self-presentation of praise or punishment may solely be a function of the desirability of the self-monitored feedback that is received and independent of the method by which this feedback is procured.

Additional research would be required to investigate whether these speculations match sub-
jects' subjective appraisal patterns subsequent to positively or negatively monitoring clinical progress or reversals.

References


Received June 6, 1977