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ABSTRACT

Recent smoking treatment programs have shifted emphasis from initial cessation rates to long-term abstinence, with aversion therapy and coping response training having had the most success. A smoking cessation treatment consisting of rapid smoking and behavioral counseling was supplemented with two maintenance treatments. After completing the 2-week smoking program, subjects continued in either a control condition (N=20) or in one of two maintenance conditions (N=37). Subjects in both maintenance groups underwent coping response and exposure treatments. In addition, one group's treatment included rapid puffing trials. The differences in the results of the cessation only group and the two maintenance groups became significant after the 3 month posttreatment follow-up. By 6 months postreatment, however, the difference was nonsignificant: 50 percent of the maintenance subjects remained abstinent compared to 37 percent of nonmaintenance subjects. High scores on the Depression Proneness Inventory and the Self-Control Schedule, as well as a large number of life stressors as measured by the Social Readjustment Scale, correlated with quicker relapse in the maintenance subjects. Since the relapse curves of the two maintenance groups were similar, the rapid puffing trials failed to make a significant contribution to abstinence. Although maintenance sessions did retard relapse during the 3 month maintenance period, the lack of significant long-term differences suggests a need to re-examine the factors underlying maintenance effects. (TW)

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Maintenance Sessions Prolong Cigarette Abstinence

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Maintenance Sessions Prolong Cigarette Abstinence

Recently, the challenge to smoking treatment programs has shifted from the production of high initial cessation rates to the long-term maintenance of abstinence. Leventhal and Cleary (1980) estimated that typically only 10% to 25% of smokers who enter treatment are able to maintain abstinence or smoking reduction for 12 months. Two general strategies have been used in efforts to improve long-term abstinence rates. In the multicomponent approach, several treatment components are incorporated in a cessation package. The most successfull of these have utilized aversion therapy and coping response training, and have produced long-term abstinence rates in the 40% to 60% range (e.g., Erickson et al., 1983; Hall et al., 1984; Tiffany, 1984). The second approach, the maintenance approach, attempts to improve long-term outcome by continuing contact with clients beyond the formal cessation treatment into the follow-up period. A variety of maintenance strategies has been used (e.g., aversive booster sessions, modeling, telephone contact, social pressure, the buddy system, and contractual management), but the results have been inconsistent with generally only minimal increments in abstinence rates. We attempted to supplement an effective multicomponent cessation treatment with a multicomponent maintenance procedure constructed upon theoretical and empirical bases.

Our maintenance treatments were based on two theoretical foundations and data sets. One major treatment component was coping response training. Theoretical support for this treatment arises from social learning theories that emphasize that persistance in behavior change is enhanced by the availability of coping strategies perceived to be effective (e.g., Bandura's self-efficacy theory; Bandura, 1977). Empirical support arises from studies showing that coping response execution reduces the likelihood of immediately subsequent smoking (e.g., Shiffman, 1984).

The second major treatment component was exposure therapy. Theoretical support for this can be found in psychopharmacologic/motivational theories that comprise the notion that drug urges are subserved by associative drug agonistic or compensatory-tolerance responses (e.g., Siegel, 1893). Empirical support for this approach includes exposure treatments with alcoholics that have yielded increments in long-term abstinence rates (e.g.,

Hodgson & Rankin, 1976). However, such studies have been uncontrolled and have contained few subjects.

The basic experimental design comprised three groups: a nonmaintenance cessation group, and two groups that received the same cessation treatment augmented by maintenance treatments. Both maintenance treatments involved coping response training and exposure therapy, but one also involved habituation to cigarettes (puffing without inhaling) as a component of the exposure treatment. For all groups we used a smoking cessation treatment consisting of rapid smoking and group counseling because of our past success at achieving high initial cessation rates with this combination (Erikson et al., 1983; Tiffany, 1984).

Method

Subjects

Sixty-five long-term, heavy smokers ages 40 and under were assigned to treatment cohorts ranging in size from 3 to 7 people. The cohorts were then randomly assigned to either one of the two maintenance conditions or to the control condition. Two subjects dropped out during the cessation treatment, and six others failed to achieve complete abstinence by the second and final week of the cessation treatment. The remaining 57 subjects (20, 19, and 18 in the 3 conditions) were used to evaluate the maintenance procedures. The groups were similar in smoking history, demographics, and a host of pretreatment and premaintenance psychological and psychophysiological variables.

Procedure

After a group orientation meeting, subjects attended individual psychophysiological and taste-test assessment sessions for our concurrent investigation of behavioral and psychophysiological (cardiac and skin conductance response to cigarettes) correlates of aversive conditioning and their use in predicting long-term outcome. Over the following two weeks, cohorts met for six evening sessions for 1 1/2 hours of counseling and 1/2 hour of rapid smoking per session. Two therapists led the counseling which consisted primarily of coping response training, information about the nature of nicotine addiction and withdrawal, social reinforcement for not smoking, health information, and daily contracting. Rapid smoking consisted of three, three-cigarette-maximum trials, with a six-second inhalation interval.

Additional psychophysiological assessments were administered 1 and 3 weeks post-treatment. Cohorts assigned to the two maintenance conditions met again at 2, 4, 8, and 12 weeks post-treatment. Cohorts in the nonmaintenance control (NMC) condition met only once, at 12 weeks post-treatment, for a one-hour assessment session.

Subjects in the counseling only maintenance (COM) groups received a Pavlovian rationale for exposure therapy, rationales for the planning and use of coping responses, self-monitoring instructions, provision of self-monitoring diaries, identification of common and individualized relapse-danger situations, assignment of exposure excersizes, and coping response practice. Sessions lasted approximately 1 1/4 hours.

The counseling plus puffing maintenance (CPM) meetings consisted of all of the above counseling followed by three three-cigarette-maximum rapid puffing trials. These sessions averaged approximately 1 3/4 hours. All maintenance sessions also included the administration of paper and pencil assessments and measurement of COa to verify smoking status.

Follow-up smoking status is obtained via detailed telephone interviews with subjects by a nontherapist researcher. To date, all subjects have been contacted at 1, 2, 3, 4, 6, and 8 months posttreatment. Additionally, smoking status is verified by contacting the two "collaterals" that each subject identified before entering treatment, and by the 3-month COa levels.

Results

Subjects in each of the maintenance conditions attended an average of 3.3 of the four maintenance sessions. Six CPM subjects refused to rapid puff on at least one occasion, and several expressed reluctance to puff.

Two orthogonal contrasts were examined: the two maintenance conditions (COM and CPM) were compared against each other, and then the combined maintenance groups were compared against the nonmaintenance control group. Through 8 months posttreatment, the two maintenance conditions did not differ significantly on any of the follow-up indices of smoking status. The maintenance groups performed better than the control group on every indice at every follow-up point, but the differences only reached significance at 3 to 4 months posttreatment. As Figure 1 shows, at 3 months 66% of maintenance subjects were abstinent, compared to only 42% of nonmaintenance control subjects, $\chi^2(1, N = 57) = 4.31$, $p < .05$. Abstinence rates for the maintenance subjects were constant during the month following the final

maintenance session, but then declined sharply. By 6 months posttreatment, 50% of maintenance subjects remained abstinent compared to 37% of the nonmaintenance subjects--a nonsignificant difference. The same pattern of results appeared using the other two indices of smoking status: percent of pretreatment smoking and number of days of abstinence.

Three assessment instruments were included to provide insight into the mechanisms of the maintenance effects. These measures were correlated with number of days to first relapse for subjects who relapsed within 6 months, and yielded significantly different correlations for the maintenance versus the control subjects. (Similar results were found using heirarchical multiple regression, indicating that the three measures accounted for different portions of the follow-up variance.) The Depression Proneness Inventory (DPI; Tabachnik et al., in press) was administered pretreatment to assess cognitive/attributional diathesis for depression. High scores on the DPI were associated with quicker relapse among control subjects, $\underline{r} = -.50$, but not maintenance subjects, $\underline{r} = .26$, $\underline{z} = 2.52$, $\underline{p} < .05$. The Self-Control Schedule (SCS; Rosenbaum, 1980) is a measure of self-regulatory behaviors. High scores on the SCS were associated with quicker relapse in maintenance subjects, $\underline{r} = -.58$, but not in control subjects, $\underline{r} = .31$, $\underline{z} = 2.08$, $\underline{p} < .05$. Finally, at the 3 month meeting, all subjects completed the Social Readjustment Scale (Holmes & Rahe, 1967) to assess number of life stressors experienced since the beginning of treatment. A large number of stressors was associated with quicker relapse in maintenance subjects, $\underline{r} = -.70$, but not in control subjects, $\underline{r} = .48$, $\underline{z} = 3.55$, $\underline{p} < .001$.

Discussion

Given the similar relapse curves for the two maintenance conditions it is safe to conclude that habituation to cigarettes (puffing exposure) did not significantly alter treatment effectiveness. Maintenance sessions, however, did retard relapse during the three month maintenance period. The lack of significant long-term differences is consistent with most previous maintenance studies, and forces a re-examination of the factors underlying maintenance effects.

Coping response training and exposure therapy were included to improve subjects' long-term abilities to survive potential relapse situations. Both components emphasized continued self-regulation and coping with stressful

situations is ways other than smoking. Yet among maintenance subjects--but not control subjects--high levels of self-regulation (assessed with the SCS) and high levels of life stressors were associated with earlier relapse. It appears that the continued self-monitoring of potential stressors and cravings that was required of the maintenance subjects may have been detrimental to their maintaining abstinence, perhaps by eliciting more frequent urges to smoke.

Other factors, therefore, may account for the positive short-term effects of maintenance sessions. Although subjects in maintenance and control conditions reported equal levels of depression, diathesis for depression predicted relapse only among nonmaintenance subjects, indicating an innoculation effect of maintenance meetings. It is possible that this innoculation, as well as other benefits of maintenance sessions, may function via nonspecific factors associated with the sessions. Social support/pressure and group cohesiveness are likely candidates that we are currently investigating. Independent evidence is emerging that such factors influence short-term outcomes (e.g., Etringer et al., 1984). The role of social influence may need to exploited and extended to enhance long-term abstinence rates.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying hypothesis. Psychological Review, 92, 78-108.

Erickson, L. M., Tiffany, S. T., Martin, E. M., & Baker, T. B. (1983). Aversive smoking therapies: A conditioning analysis of therapeutic effectiveness. Behaviour Research and Therapy, 21, 595-611.

Ertringer, B. D., Gregory, V. R., & Lando, H. A. (1984). Influence of group cohesion on the behavioral treatment of smoking. Journal of Consulting and Clinical Psychology, 52, 1080-1086.

Hall, S. M., Rugg, D., Tunstall, C., & Jones, R. T. (1984). Preventing relapse to cigarette smoking by behavioral skill training. Journal of Consulting and Clinical Psychology, 52, 372-382.

Hodgson, R. J., & Rankin, H. J. (1976). Modification of excessive drinking by cue exposure. Behaviour Research and Therapy, 14, 305-307.

Holmes, T. H., & Rahe, R. H. (1967). The Social Readjustment Rating Scale. Journal of Psychosomatic Research, 11, 213-218.

Leventhal, H., & Cleary, P. D. (1980). The smoking problem: A review of the research and theory in behavioral risk modification. Psychological Bulletin, 88, 370-405.

Rosenbaum, M. (1980). A Schedule for assessing self-control behaviors: Preliminary findings. Behavior Therapy, 11, 109-121.

Shiffman, S. (1984). Coping with temptations to smoke. Journal of Consulting and Clinical Psychology, 52, 261-267.

Siegel, S. (1983). Classical conditioning, drug tolerance, and drug dependence. In R. G. Smart, F. B. Glaser, Y. Israel, H. Kalant, R. E. Pupham, & W. Schmidt (Eds.), Research advances in alcohol and drug problems (Vol. 7, pp. 207-246). New York: Plenum.

Tabachnik, N., Alloy, L. B., Romer, D., & Crocker, J. (in press). Predicting depressive reactions in the classroom: A test of a cognitive diathesis-stress theory of depression using causal modeling techniques. Journal of Abnormal Psychology.

Tiffany, S. T. (1984). Treatments for cigarette smoking: An evaluation of the contributions of aversion and counseling procedures. Unpublished doctoral dissertation, University of Wisconsin, Madison.

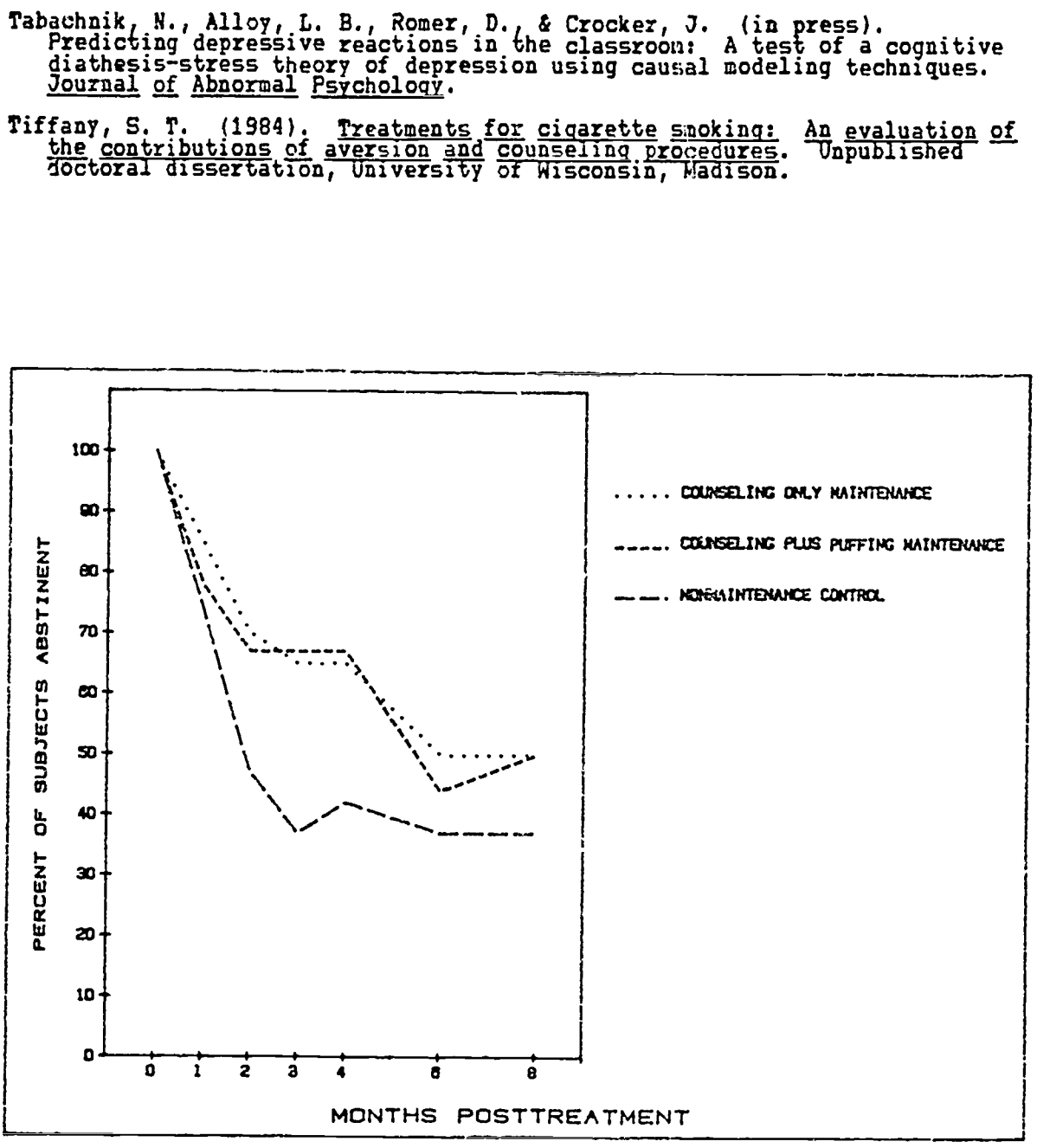

Figure 1. Abstinence rates of the three experimental conditions through 8 months posttreatment.

Abstract

A smoking cessation treatment consisting of rapid smoking and behavioral counseling was supplemented with two maintenance treatments. Subjects were 57 smokers recruited from the community. Both maintenance treatments comprised coping response and exposure treatments. One maintenance treatment also included massed exposure to cigarettes (rapid puffing trials). Maintenance meetings occurred 2, 4, 8, and 12 weeks after the cessation treatment. Through eight months posttreatment, the two maintenance groups did not differ significantly on any outcome measures at any follow-up point. Maintenance sessions, however, retarded relapse rates during the three months maintenance phase compared to the nonmaintenance control group. Thereafter, abstinence rates for the maintenance conditions declined sharply. Individual difference variables provided insight into the maintenance process.