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AN EXPERIMENTAL INVESTIGATION OF TWO MULTI-COMPONENT APPROACHES ON SMOKING CESSATION

Ву

Richard John Coelho

A DISSERTATION

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ABSTRACT

AN EXPERIMENTAL INVESTIGATION OF TWO MULTI-COMPONENT APPROACHES ON SMOKING CESSATION

Βv

Richard John Coelho

The purpose of this experiment was to evaluate the efficacy of two multi-component smoking cessation approaches to the modification of chronic smoking behavior, perceptions, attitudes and personality characteristics of individuals who desired to quit smoking. The two treatment conditions tested were the American Lung Association's "Freedom From Smoking" clinic and an innovative model which utilized contingency contracting (e.g., deposit and social contracts). Participants were 146 adult volunteers (53 men, 93 women) from the community-at-large, who attended a seven-session program during a six week period. Treatments were equated on number of group leaders; assigned quit date; number, length, time and frequency of treatment sessions.

The experimental design was a three-by-four-by-two repeated measurement design. Participants were assigned randomly to either of the two experimental conditions or to a traditional comparative group (e.g., unaided control), stratified by sex and length of prior abstinence. Dependent measures compared among conditions included

smoking behaviors, personality characteristics, program satisfaction, self-efficacy and group cohesiveness. Information was obtained from questionnaires administered before treatment, at the end of treatment, and at one and three months follow-up. Self-reported smoking behavior was validated through the measurement of carbon monoxide in expired air samples.

The major hypotheses in this experiment involved differences between cessation models. Outcome results showed both treatments to be effective in reducing daily cigarette consumption and promoting maintenance of abstinence behavior when compared to traditional benchmarks from the literature. However, between group comparisons showed the innovative model to be more effective at the end of treatment than either the ALA or comparative conditions for helping persons maintain abstinence during treatment. Differences among experimental conditions at one and three months follow-up also showed the innovative model to have higher rates of abstinence compared to the other two conditions. Similarly, the innovative model was more effective in helping persons reduce consumption levels at all assessment periods.

There were also significant differences found on outcome measures for level of prior abstinence. Persons who had had longer periods of prior abstinence before treatment fared better in remaining abstinent. This difference was most noticable between those who never quit (9.5% abstinent) and those with prior abstinence of one year or more (50% abstinent) at three months follow-up.

Nonsignificant treatment differences were found for personality characteristics, group cohesiveness, self-efficacy and program satisfaction. In addition, no sex differences were found with respect to response to treatment.

The associative analysis indicated that self-efficacy expectations (both general and specific), carbon monoxide levels, and program attendance were all related to smoking behavior. Measures of personality characteristics were found to be independent of smoking behavior. This finding is consistent with related research which shows no relationship between personality and performance. However, a moderate relationship was found between social support and nonsmoking behavior. This finding would indicate the need to make maximum use of the positive benefits of social support networks to facilitate maintenance of nonsmoking. This might best be accomplished through the development of autonomous self-help groups and be securing the active assistance of family, friends, co-workers, etc. during and after the treatment process.

The typological analysis showed that both smokers and nonsmokers could be classified into seven types based on their responses to the associative analysis cluster. Nonsmokers formed three distinct types and smokers formed four types. It was interesting to note that these findings indicated that what may have promoted abstinence for one type of individual, did not do the same for another type. Therefore, future research will have to begin a shift from its present paradigm to one which focuses on tailoring treatments to individual characteristics or types of smokers.

In summary, the results from this experiment indicated that an innovative smoking cessation program which utilized contingency contracting and monetary deposits, administered over a six week period, did produce incremental improvement in treatment outcome. Based on

these results, a variety of future research directions were revealed. Emphasis was placed on tailoring future smoking cessation treatments to individual characteristics.

To my daughter, Richetta, whose birth prior to the start of this study brought more love, joy, and happiness into my life than I ever thought was possible.

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CHAPTER I

INTRODUCTION

Cigarette smoking constitutes a major health hazard. Epidemiological and experimental research indicates that cigarette smoking
is directly associated with cancer of the lung, larynx, oral cavity
and esophagus, and is significantly associated with pancreatic,
urinary bladder, and kidney cancer (Bernstein and McAlister, 1976;
USDHEW, 1980; USPHS, 1964, 1971, 1981). It is estimated that \$17
billion is lost each year and that over 10 percent of all United
States direct health care costs are attributable to cigarette
smoking (Houpt, Orleans, George, and Brodie, 1979; USDHEW, 1977).
In 1982, it is estimated that there will be 430,000 deaths due to
cancer (USDHHS, 1982). Of overall mortality rates, 22 to 38 percent
can be attributed to smoking (Doll and Peto, 1981; Enstrom, 1979),
and are, therefore, preventable (USDHHS, 1982). Consequently,
cigarette smoking has been called this country's most important
public health issue (Danaher, 1980; USDHHS, 1982).

As evidence has increasingly related cigarette smoking to many serious physical disorders, research efforts to help chronic smokers break the tobacco habit have been intensified. Subsequent to the 1964 Surgeon General's report on smoking and health (USPHS, 1964), a my riad of research projects on modification, reduction, and

elimination of smoking behavior have been undertaken (National Clearinghouse for Smoking and Health, 1968, 1970, 1974). This research covers an array of topics ranging from questions of cigarettes' physical addictiveness to possible causes of the smoking habit and attempts at modification (Foss, 1973).

When the Surgeon General's 1964 report was published, more than 52 percent of men and 32 percent of women, aged 21 and older, defined themselves as cigarette smokers (Schwartz, 1979; USDHEW, 1976, 1977). By 1970, rates had dropped to 42 percent for men and 31 percent for women. In 1975, rates had declined slightly more, to 39 percent of the men and 29 percent of the women (Schwartz, 1979). While these figures are encouraging, there are still 53 million cigarette smokers in this country (USDHHS, 1982).

Statistics on smoking behavior among minorities (e.g., blacks), however, are not as encouraging. National survey data (Gallup, 1974) show smoking to be more prevalent for blacks (55 percent) as compared to rates for white adults (39 percent). A survey of the smoking habits of approximately 100,000 members of the San Francisco Bay Area's Kaiser Foundation Prepaid Health Plan showed higher rates of smoking among black men (54 percent) and women (42 percent) when compared with white men (44 percent) and women (39 percent). Surveys of male, ex-smokers found that most of these individuals were whites. Among women, smoking cessation was about twice as prevalent among whites (Friedman, Seltzer, Siegelaub, Feldman and Coller, 1972). Data from the Third National Cancer Survey indicate that the relative risk of lung cancer for both blacks and females has increased dramatically over the past four decades (Levin et al., 1974) and

has been linked to the greater prevalence of smoking among these groups (Sterling and Weinkam, 1978). The health consequences of cigarette smoking are particularly severe for minorities, yet little is known about effective cessation methods which may aid blacks and other minorities in becoming nonsmokers.

Although the majority of smokers are informed about the health risks of smoking (Gallup, 1981; USDHEW, 1976) and agree with the scientific evidence that smoking is harmful to one's health and chronic smokers may even express a desire to give up cigarettes, many cannot do so on their own accord (Schwartz, 1978). A national survey sponsored by the Department of Health, Education and Welfare in 1976 reported that six of ten smokers had seriously attempted to stop but failed; another three said they would stop if there were an easy way. Gallup (1981) provides recent public opinion data that two-thirds of those persons currently smoking would like to stop; 80 percent have tried to stop; but close to one-third of these persons went back to smoking again after one week. Many cigarette smokers need help in attaining abstinence, which is the reason smoking cessation methods have proliferated during the last 20 years.

Trends in Smoking Cessation Research

While the specific treatment techniques employed in smoking cessation research have been quite heterogeneous, their absolute effectiveness have been uniformly disappointing. As a rule, initial cessation rates drop rapidly during the first month posttreatment, continue to decrease until the third month, and then the rate of descent is sharply curtailed. Schwartz (1969) concluded that the

percentage of abstinence during the first three months following treatment drops from 65-75 percent to 10-30 percent and, at one year post-treatment, stands somewhere between 3 and 20 percent. Hunt and Bespalec (1974) examined 89 smoking studies which used a wide variety of approaches. They found that 70-80 percent of the persons who stopped smoking by the end of a program subsequently relapsed during the first three months; the greatest recidivism appeared within the first five weeks of followup. Hunt, Barnett, and Branch (1971) found a 75 percent recidivism rate, with a high incidence of relapse during the first three months, to be similar to that for heroin and alcohol addiction.

The high relapse rates noted above, although bleak, may be a rather liberal estimation. Smoking cessation research has historically been plagued by high drop out rates, frequently reaching 50 percent of those who attend a program (Leventhal and Cleary, 1980). Dropouts are often excluded when success rates are computed, which overestimates outcome results and undercuts the researcher's ability to interpret and generalize from the experimental results (McFall, 1978). As a result, many outcome findings are inflated. For example, McFall and Hammen (1971) in a review of major studies, noted that, if total samples including dropouts were considered, abstinence ranged from 7 percent to 40 percent with a mean of 26 percent at the end of treatment and from 9 percent to 17 percent with a mean of 13 percent at four to six months follow-up. As a result of the high relapse and and dropout rates noted above, Danaher (1980) suggests a 30 percent abstinence level as a benchmark against which the incremental efficacy of any innovative smoking cessation program can be measured.

While there are some exceptions to this dismal picture, other reviewers tend to confirm it (Bernstein, 1969; Bernstein and McAlister, 1976; Hunt and Matarazzo, 1973; Keutzer, Lichtenstein, and Mees, 1968; Leventhal and Cleary, 1980; Lichtenstein and Danaher, 1976). The problem, then, is to develop techniques that induce a high percentage of initial abstinence from cigarettes and measures to maintain long term abstinence.

Cessation Techniques

Acknowledging the pressing need to develop procedures and programs to assist chronic smokers in quitting, researchers have increasingly turned their attention to this problem. Their efforts have incorporated a variety of procedures including drugs (Brantmark, Ohlin and Westling, 1973; Seltzer, 1975), clinics (Ejrup, 1973), and hypnosis (Berkowitz, Ross-Townsend, and Kolberger, 1979). Unfortunately, evidence strongly suggests that such techniques have had little value in the long-term elimination of smoking (Bernstein and McAlister, 1976). Unfavorable results have also been reported for a number of other strategies including anti-smoking television commercials (O'Keefe, 1971), legislation (Brecher and Brecher, 1964), and anti-smoking campaigns (Jeffreys, Norman-Taylor, and Griffiths, 1967). It is possible, however, that the cumulative impact of public education has been significant in that reductions in the percentage of smokers have been achieved (NCI, 1977; National Clearinghouse for Smoking and Health, 1976; Warner, 1977).

A major approach to cessation is comprised of learning-based intervention strategies. Even within what might be loosely considered a learning framework, there has been a diversity of procedures. Such

procedures have included stimulus control (Bernard and Efran, 1972), covert sensitization (Sachs, Bean, and Morrow, 1970), systematic desensitization (Pyre, Agnew, and Kopperud, 1966), self-monitoring (McFall and Hammer, 1971) and appeals to fear (Janis and Mann, 1965). Several forms of aversive conditioning have included rapid smoking (Lando, 1976); warm, smokey air (Franks, Fried, and Asher, 1966); sensory deprivation (Suedfeld and Ikard, 1974); and electric shock (Koenig and Masters, 1965).

Three types of studies appear to offer significantly higher initial abstinence and long term maintenance of abstinence. They are rapid smoking studies, contingency contracting studies and some multi-component studies.

Rapid Smoking Studies

In rapid smoking techniques the subject inhales from a cigarette once every six seconds for the duration of the cigarette or until nauseated. From two to four trials are undertaken in one session; treatment usually consists of six to eight sessions over a one to two week period. Edward Lichtenstein and his colleagues at the University of Oregon have reported a number of studies using rapid smoking (Grimaldi and Lichtenstein, 1969; Lichtenstein et al., 1973; Schmahl et al., 1972; Weinrobe and Lichtenstein, 1975). When Lichtenstein and Rodriques (1977) looked at follow-up data from these studies, he found that groups that had been treated with rapid smoking techniques in the context of a therapeutic support relationship (therapist support and encouragement with efforts to maintain positive treatment expectancies) repeatedly produced immediate post-treatment abstinence

rates near 100 percent, with three and six month abstinence rates as high as 77 percent and 60 percent. However, at two and six years follow-up abstinence rates dropped to 36 percent.

While the University of Oregon group has had considerable success with this procedure, others have not. Curtis, Simpson, and Cole (1976) investigated the effectiveness of rapid smoking using procedures developed by Lichtenstein and his colleagues. Twenty-six subjects from the community were treated, in contrast to the college population used by Lichtenstein. All participants attended group discussions with or without rapid smoking. The groups met for ten weeks, and a monetary deposit was returned to those who attended all sessions. Each group had a 15 percent abstinence rate at five months follow-up. These researchers question Lichtenstein's results, pointing out that collegeage smokers may quit more easily than more chronic older smokers. Flaxman (1978) compared several combinations of this smoking cessation intervention. She found that when rapid smoking was combined with self-control procedures, an abstinence rate of 62 percent was obtained at six months follow-up; but among the group most closely approximating Lichtenstein's procedures only 25 percent of the participants were not smoking at six months. Levenberg and Wagner (1976) did not find significant results in a study in which participants were assigned to either rapid smoking, systematic desensitization, or relaxation treatments. At a four months follow-up, only 12 percent of 54 participants were abstinent. Lando (1975) compared rapid smoking to a satiation procedure and to a control group that smoked as usual. There were no differences among groups at a two months follow-up and the percent of subjects abstinent was low. It appears that the success of rapid smoking techniques have yet to be scientifically demonstrated.

In addition to being aesthetically unappealing, investigations of the physiological effects of rapid smoking indicate that this procedure is not without serious potential hazards. Increased nicotine and carbon monoxide inhalation during rapid smoking puts stress on the cardiovascular system, causing increases in heart rate, blood pressure, carbonxyphemoglobin levels and, in some instances, electrocardiogram abnormalities (Dawley and Dillenkotter, 1975; Horan, Linberg, and Hackett, 1977; Lichtenstein and Glasgow, 1977; Miller et al., 1977). Rapid smoking is clearly not an ideal intervention to use with the very people who need to quit smoking the most, those who have cardiopulmonary impairment.

Contingency Contracting Studies

Contingency contracting seeks to eliminate smoking indirectly by strengthening other behaviors not involved with cigarette use.

Arrangements (contracts) are made by a smoker with another individual to help modify the smoking behavior. The purpose of contingency contracting is to help prevent the smoking behavior while enhancing motivation through commitment. In contingency contracts, smokers usually make arrangements so that they need not be concerned with the appropriate administration of contingent rewards or punishments. The function of providing consequation is the responsibility of the individual or agency specified in the contract. The smoker is completely familiar with the terms of the contract and is aware of the costs inherent in violating it.

Contracting has been successfully used in the treatment of chronic pain, in the treatment of drug addiction and alcoholism, in

weight control programs and a number of other situations (Craighead et al., 1976; Epstein and Wing, 1979; Fredericksen and McKinlay, 1978; Wing et al., 1981). Contracting, as a method of smoking control, has taken two major forms: (a) deposit systems and (b) social contracts with peers, family, and co-workers.

Deposit Systems

Deposits are commonly used to promote participation and gain compliance with program tasks and assignments. In deposit contracts smokers give a sum of money to the researcher or group leader and have to earn the money back by meeting certain cessation requirements. This procedure involves a degree of punishment (response cost), since part of the money may be forfeited by failure to meet the stipulations of the contract. Although reinforcement and punishment complement each other, it seems clear that the sustained threat of losing one's deposit provides the dominant influence (Tighe and Elliott, 1968).

Two studies provide examples of the deposit system, using the control tactic of researcher authority over participant deposits, contingent on periods of abstinence. Elliott and Tighe (1968) did an uncontrolled study in which 23 participants were assigned to one of two groups (n=5, n=9), contracting for a 12 week period or to another group (n=11) that contracted for a 16 week period. Each participant was required to deposit \$50-\$65 at the beginning of the program and sign a statement pledging not to smoke for the duration of the program, agreeing that portions of the deposit would be given back at various intervals of abstinence. If, however, the participant smoked, the remaining money would be forfeited. Group meetings were devoted mainly to lectures on the dangers of smoking and the filling

out of questionnaires. At the end of treatment, 84 percent of the participants were abstinent, and at follow-up periods ranging from 3-17 months, an average 37.5 percent of participants were still abstinent.

Using a more complete factorial design, Winett (1973) randomly assigned participants to one of four conditions: contingent/maintenance; contingent/non-maintenance; non-contingent/maintenance, non-contingent/non-maintenance. If participants in the contingent condition reduced their smoking as prescribed over the 12 days of the program, each would receive a portion of a \$55 deposit back. If not, the money would be forfeited. Participants in the non-contingent condition received their deposits back simply for attending weekly meetings. Those in the maintenance condition attended two weekly meetings beyond the 12 days of the program. The program featured lectures and films on smoking and health. At six months follow-up, 50 percent versus 23.5 percent of the participants were abstinent in the contingent and non-contingent groups, respectively.

Social Contracts

Social contracts which do not involve money often include elements of public announcements mixed with encouragement and support from family, peers, and colleagues and make explicit use of these social contingencies as a means for motivating reduction or abstinence. The emphasis on social contracts ranges from studies in which participants have simply made public announcements that they are trying to quit, which presumably set in motion appropriate social consequences (Tighe and Elliott, 1968), to cases in which friends and family members act as reinforcers for successful smoking cessation (Bornstein et al.,

1975; Lawson and May, 1970). Nehemkis and Lichtenstein (1971) trained a small sample of married couples to reinforce one another positively for successfully meeting cessation goals. Initial treatment results were fairly good, but six months follow-up data indicated considerable relapse. Gutmann and Marston (1967) were even less successful in their efforts with graduated reduction in married couples. One reason for this could be that they decided to allow spouses to reward themselves with cigarettes for meeting reduction requirements.

Another form of social contracting that has not been extensively investigated, but which may offer added options in cessation methodology is the "buddy system." By systematically programming contracts between smokers and training them in appropriate verbal praise and contingent rewards, it may be possible to increase treatment effectiveness (Janis and Hoffman, 1970).

Multi-Component Studies

The smoking cessation strategies discussed thus far have demonstrated varying degrees of short-term success and minimal long-term success. An emerging trend in smoking control has been to combine one or more procedures into a treatment "package" (Bernstein, 1969; Lichtenstein and Danaher, 1976). Research on these packaged treatments has proliferated in the hope that individual procedures will combine to form a more powerful and comprehensive cessation program (Best, 1975; Delahunt and Curran, 1976; Himilton and Bernstein, 1979; Lando, 1977; Pederson et al., 1975; Powell and McCann, 1981). Due to the complexity of smoking behavior and the variety of functions that cigarettes can serve for individuals, a program that includes many

treatment options could presumably permit the tailoring of components to smokers' individual differences.

Flaxman (1978) randomly assigned 64 participants to one of either treatments in which quitting date and the use of rapid smoking were varied. All participants were seen individually and received the same multiple treatment package. Program lengths varied somewhat but averaged four weeks. The packaged treatment included the following techniques: deep muscle relaxation, thought-stopping, worry beads, encouraging the development of new hobbies, self-reinforcement, rehearsal of reasons for quitting, public commitment to quit smoking and literature from the American Cancer Society. Participants in the two groups that combined techniques with a stop-smoking target date set two weeks in advance were significantly more successful groups also used rapid smoking, the other did not; both achieved 50 percent abstinence at six months follow-up, and there were no significant differences between them.

Elliott and Denny (1978) grouped eight procedures including rapid smoking, applied relaxation, covert sensitization, systematic desensitization, self-reward and punishment, cognitive restructuring, behavioral rehearsal, and emotional role playing. That particular combination of procedures was more effective than the usual single treatment (e.g., rapid smoking) approach. Forty-five percent of the participants had abstained and 41 percent had decreased their smoking at six months follow-up.

Pederson, Scrimgeour, and Lefcoe's (1975) treatment package included hypnosis, relaxation training, self-monitoring, rehearsal

of alternative behaviors, self-management training, and discussion. They found that 50 percent of their participants were abstinent at six months follow-up. The major aim of a study conducted by Delahunt and Curran (1976) with 50 females was to examine the effectiveness of a package combining self-control and negative practice procedures. After six months, the combined treatment produced a 56 percent abstinence rate. Lando (1977) reports the results of a study in which all subjects participated in a week long aversive smoking phase and then half the participants undertook an eight week maintenance phase consisting of contingency contracting, smoking related problem-solving and group support. The group that participated in the multi-component phase was 76 percent abstinent at six months follow-up; the group that received only aversion therapy was 35 percent abstinent at follow-up assessment. Powell and McCann (1981) developed a multi-component package that consisted of lectures, demonstrations, practice exercises, aversive smoking, and the teaching of self-control procedures. The treatment program (n=53) was extremely effective: 100 percent were abstinent at the end of the one week treatment program, and at one year follow-up, 63 percent of the participants reported abstinence.

Pommerleau and Pommerleau (1977) described a multi-component package program in which eight to ten participants met with two therapists for eight regular and five follow-up sessions. During the initial sessions self-control techniques were taught and during the later sessions reinforcement for non-smoking and problem-solving was provided. The multi-component program consisted of: stimulus control techniques, social reinforcement, education regarding aversive aspects of smoking, covert conditioning, deep muscle relaxation, role

playing, and encouragement to exercise. Outcome results for 100 participants revealed that 61 percent were abstinent at the end of treatment; about nine months later 32 percent were abstinent.

Some studies have indicated that multi-component package programs are relatively ineffective. These include Harris and Rothberg (1972) and Danaher (1977).

Harris and Rothberg conducted a self-control program emphasizing record-keeping, positive reinforcement, punishment, stimulus control, temptation awareness, and maintenance. The program consisted of eight bi-weekly group meetings in which written lessons were reviewed. At two months follow-up all five subjects had relapsed.

Danaher's package approach involved rapid smoking and training in self-control skills for maintaining cessation. Fifty smokers were assigned to either rapid smoking or normally paced smoking groups to participate in either discussion or self-control instruction. Contrary to predictions, at 13 weeks post-treatment, participants receiving the combined program of rapid smoking and self-control instruction had a lower abstinence rate (21 percent) than those subjects treated with rapid smoking plus discussion (36 percent).

Public Service Programs

Public service programs (e.g., American Cancer Society and American Lung Association) offer group support, combined with various other techniques, to chronic smokers who desire to quit cigarettes. However, many such smoking cessation programs offered by these voluntary agencies have been intermittent and rarely are they evaluated (Public Health Service, 1979).

In the only published report which examines a public service program (e.g., American Cancer Society Program) in comparison with others, Foxx and Brown (1979) found the ACS program to be minimally effective. They assigned participants to one of four groups: (a) a nicotine-fading procedure, in which participants changed their cigarette brands each week to ones containing less tar and nicotine; (b) a self-monitoring procedure in which participants plotted their daily nicotine and tar intake; (c) a combined nicotine-fading and self-monitoring procedure; and (d) a slightly modified American Cancer Society program that did not utilize the autonomous participant-run "I Quit Club." At six months follow-up the combined procedures produced an abstinence rate of 50 percent while no other group exceeded 10 percent. The results for the ACS group were far from impressive and may have reflected the non-inclusion of the autonomous "I Quit Club."

Pyszka, Russels, and Janowicz (1973) studied 29 American Cancer Society (ACS) programs conducted in the Los Angeles area between November 1970 and June 1973. These ACS programs represented about half of all clinic programs held in the area during that time period. Of those who completed treatment (n=645), 55 percent were not smoking at the end of the program. A random sample of 487 of the original 944 participants was selected for follow-up; 354 interviews were completed by telephone. Including all participants who dropped out of the program, 30 percent were abstinent at six months follow-up, 22 percent at 12 months, and 18 percent at 18 months.

The American Lung Association of Nassau-Suffolk counties (New York) conducted four stop-smoking clinics in three hospitals during 1971-1972. Participants ranged from 56 to 96 in the four clinics. Participants

met for six sessions over a four week period with three sessions held the first week and three weekly sessions thereafter. Programs consisted of speakers, films, and discussions in both large and small groups. At the close of the clinics, 70 percent had quit, and 50 percent were still not smoking one month later. A follow-up one year later showed that about 20 percent were still abstinent.

The American Lung Association (1981) conducted a nationwide evaluation of their smoking cessation program "Freedom From Smoking." to determine its effectiveness in helping smokers quit. Three different types of clinics were designed and compared (e.g., six, seven, and nine sessions). Ten participating Lung Associations throughout the country held a total of 19 clinics (n=547) during 1980. Volunteers chose the clinic length preferred as well as the type of follow-up they wanted (e.g., mailed questionnaires to telephone interviews). The seven and nine session clinics had a substantial focus on maintenance of nonsmoking, including a maintenance manual distributed to all participants, recorded telephone messages participants could call, and additional sessions after the "quit date." One site used videotapes of quest speakers on subjects such as medical aspects of smoking, relaxation and nutrition. All other sites used community quest speakers on the above topics. At the end of treatment, 74 percent had quit (72% 6-session; 81% 7-session; and 69% 9-session), and 29 percent maintained abstinence at one month follow-up (27% 6-session; 35% 7-session; and 28% 9-session). One year follow-up data showed 11 percent of all participants had not smoked since the clinic ended (7% 6-session; 19% 7-session; and 9% 9-session). Based on the above

outcome results, the American Lung Association has adopted and disseminated the 7-session clinic as the standard cessation model for their organization.

The American Cancer Society and American Lung Association have, however, remained very active in providing group treatment programs for chronic smokers. It is unfortunate that while these public service programs together have probably helped more smokers than any other organized effort, only limited published and unpublished data are available. Objective and controlled evaluations of these programs are still needed, along with answers to questions of their long-term efficacy.

Group Meetings and Group Support

Group support meetings are a popular context for smoking cessation efforts, primarily because treating a group of people is more economical, and secondly, because they offer a supportive social environment in which smokers come together to receive help (and help each other). There are several interrelated elements that are possibly involved that make group meetings a powerful technique in aiding the cessation process. The hope that a group member can succeed is enhanced by watching others succeed (Yalom, 1975). The expectation is that group interaction in a supportive social environment will support involvement and participants will be unlikely to participate only cognitively, that is, to learn from the program but not apply it to themselves (Bandura, 1977). These support groups are generally characterized by group cohesiveness.

This is a potent and complex sense of warmth, support, and commitment one feels in a group that

has been shown to be instrumental in facilitating a number of therapeutic changes (Yalom, 1975). Group cohesion forms a psychological state which allows a group of people to experience a unity of feeling and purpose and to work in harmony toward a common goal (Hartman, 1981). This definition is differentiated from group adhesion in which people experience a unity of purpose but do not put that unity into common action (Hartman, 1981).

Yalom's and Hartman's descriptions of cohesiveness make it similar to the conditions that Harris and Lichtenstein (1971) found necessary for rapid smoking to be effective. Lando (1977) felt that group cohesiveness, an ingredient he hadn't expected to be prominent, was a sizeable factor contributing to his excellent abstinence results (76% at six months). When cohesiveness wasn't encouraged in a later study (Lando, 1978), outcome results deflated (28% at six months).

The use of group meetings as a basis for a supportive social environment not only provides support for abstinence but also may result in the creation of a positive nonsmoking self-image for long term maintenance behavior (Mausner, 1971). Whitman (1972) suggests that the use of group support is useful in motivating participants to carry out prescribed methods of the program and can be an aid in preventing recidivism if withdrawn gradually. Group support has long been considered an important factor in interventions designed to control other self-management problem behaviors: Alcoholics Anonymous for alcohol abuse (Thune, 1977), Synanon for drug abuse (Scott and Goldberg, 1973), and TOPS (Take Off Pounds Sensibly) for obesity (Stunkard, 1972). Although many smoking cessation programs utilize group sessions for mutual support, some smokers seeking help may not

benefit from this approach. Schwartz and Dubitzky (1968) point out that groups may stimulate competition with accompanying anxiety. This anxiety, when combined with previous anxiety and withdrawal anxiety, may be counter-productive. For these people an individualized cessation program may be more effective (Hunt and Matarazzo, 1973), such as individual counseling or a self-help program.

Assets for Cessation

Smokers bring to the treatment environment, not only an individualistic and complex set of reasons for smoking and wanting to quit, but also a diversity of demographic and psychosocial characteristics that affect compliance and response to treatment. These individual differences generally have not been good predictors of who will be abstinent at the end of treatment or at follow-up (e.g., Bernstein, 1969; Bernstein and McAlister, 1976; Keutzer, Lichtenstein, and Mees, 1968).

Demographic Characteristics

In the results of previous research, demographic characteristics such as age and sex have been associated with treatment outcome (Eisinger, 1971; Guilford, 1972; Kanzler, Jaffe, and Zeidenberg, 1976; Raw, 1976; Russel, Wilson, Feyerabend, and Cole, 1976). The common finding is that older, male smokers are inclined to be more successful in becoming and remaining abstinent. However, as will be found true for almost all smoker assets reviewed, a large number of researchers have failed to demonstrate an age and sex outcome relationship (e.g., Brockway, Kleinmann, Edleson, and Gruenewald, 1977; Elliott and

Denney, 1978; Katz, Heiman, and Gordon, 1977; Poole, Sanson-Fisher, and German, 1981; Spring, Sipich, Trimble, and Goeckner, 1978). However, in those studies in which a significant association was found, the size of the effect was usually small and of little meaningful value.

Locus of Control

Rotter's (1966) Internal-External Control Scale attempts to measure the relative extent to which people believe they exercise control over their lives (internally controlled) or the degree to which they feel their destinies are beyond their own control and are determined by fate, chance or powerful others (externally controlled). Research on the relationship between locus of control and outcomes of smoking cessation studies are inconclusive (Ockene, Nutall, Brenfari, Hurwitz, and Ockene, 1981). Straits and Sechrest (1963) found that in two consecutive samples, smokers were more externally controlled than nonsmokers. James, Woodruff, and Werner (1965) discovered that smokers were also significantly more externally controlled than nonsmokers. In contrast, more recent investigations have failed to show a distinction between smokers and nonsmokers or cessation of smoking based on locus of control (Burton, 1977; Ockene, Brenfari, Nutall, Hurwitz, and Ockene, 1982; Pederson and Lefcoe, 1976; Steffy, Meichenbaum, and Best, 1970). Locus of control scales, at this point in time, have not demonstrated to be predictive in smoking cessation outcome. However, control expectancies specific to health might give more meaningful information. The Multi-dimensional Health Locus of Control (MHLC) Scales (Wallston, Wallston, and

DeVellir, 1978) measure beliefs that the source of reinforcement for health related behaviors is primarily internal, a matter of chance, or under the control of powerful others. Shipley (1981) found that those with high scores on the internal scale were more often abstinent than low scorers. Glasgow (1978) has suggested that these particular scales may be more effective for future smoking cessation research than global locus of control scales.

Self-Efficacy

Self-efficacy theory (Bandura, 1977) is postulated as a cognitive mechanism underlying behavioral changes resulting from different treatment approaches. Efficient methods, whether mutually occuring or therapeutically induced, are presumed to attain the desired outcomes through the improvement of expectations of personal efficacy. These expectations, with respect to a particular set of behaviors, are considered antecedents to whether coping behavior will be initiated and maintained in the face of internal and external obstacles and the amount of effort expended in sustaining coping behavior. Self-efficacy is defined as an individuals' belief that he or she has the skills or abilities necessary to perform the behavior(s) that a situation demands to produce the desired outcome (Condiotte and Lichtenstein, 1981). Personal efficacy expectations with regard to a specific set of behaviors are considered pertinent for coping efforts solely for those particular behaviors. Therefore, these expectations deviate from response-outcome expectancies (beliefs about the consequences of a particular behavior) and from a global expectancy construct such as Rotter's concept of locus of control (Bandura, 1977; Di Clemente, 1981). Several recent investigations in the area of smoking cessation research have focused on the measurement of self-efficacy. Di Clemente (1981) studied smoking recidivism among treated (n=34) and untreated (n=29) exsmokers. A 12-item self-efficacy scale was developed to measure a wide range of common relapse situations. The scale was used to analyze the relationship between self-efficacy and participants' ability to maintain abstinence at a five month follow-up. Findings indicated that self-efficacy was the only variable measured which predicted recidivism.

Condicte and Lichtenstein (1981) evaluated the utility of self-efficacy and smoking cessation in a study of 78 smokers from two different programs. A self-efficacy scale, developed from Best and Hakstian's (1978) comprehensive list of smoking situations, was administered before, during and at three months post-treatment. A regression analysis indicated that higher levels of perceived self-efficacy were strongly related to longer periods of abstinence after treatment.

Cojointly, these two studies provide some support for the notion that self-reported self-efficacy ratings are associated with predicting smoking behavior, at least with people who have undergone treatment. Although the conclusions about self-efficacy are provocative, its validity as a predictor of smoking behavior change has not received sufficient attention in the literature. More complex and extensive analysis is needed to explore the role of self-efficacy in self-change for smoking cessation.

Prior Experiences with Cessation

Research on the relationship of prior attempts to quit smoking to eventual smoking cessation are scarce. Most studies have <u>not</u> found the number of prior attempts to be related to cessation during a present attempt (Flaxman, 1978; Katz, Heiman, and Gordon, 1977; Keutzer, 1968). The relationship of one's previous length of abstinence to current cessation has produced conflicting research. Some have found a long period of prior abstinence to be unrelated to the outcome of a present attempt (Eisinger, 1972; Flaxman, 1978; Katz et al., 1977). However, two recent studies indicate that a long period of prior abstinence is a worthy participant asset.

In a nationwide study, the American Lung Association (1981) evaluated their previous smoking cessation clinics. They had held 19 clinics and attracted 547 smokers. At 1, 6, and 12 months post-treatment, a smoker's longest prior period of abstinence was found to be significantly related to success (e.g., nonsmoking) at each follow-up period.

Ockene et al., (1982) studied 169 male smokers enrolled in a heart attack prevention program which focused on three risk factors:

(1) smoking, (2) hypercholesterolemia, and (3) hypertension. A discriminant function analysis demonstrated that the likelihood of being a nonsmoker is increased when a participant has had a long period of prior abstinence in combination with a high expectation of success, few cigarettes smoked at intake, low stress level, little difficulty in prior cessation attempts, and a high degree of personal security.

Expectations of Success

Measures of participants' expectations of success at various points in treatment show that high expectancy smokers are initially more successful in their cessation efforts than are less optimistic smokers (Best, Bass, and Owen, 1977; Best and Steffy, 1975; Eisinger, 1972; Glasgow, 1978; Koenig and Masters, 1965; Ockene et al., 1982; Russell, 1979). It is important that significant correlations have been found with expectation measures taken in lower stages of treatment when such correspondence might be more predictable (Danaher, 1977). Eisinger (1972) found that successful abstainers included a significantly higher percentage of individuals who believed they would not be smoking in five years, than did the recidivist group. Best et al., (1977) reported that high expectation was associated with nonsmoking behavior at six months post-treatment. Ockene et al., (1982) found level of expectations to be related to success at two years post-treatment. The American Lung Association (1981), however, reported that levels of expectation for their study were associated with success at one month post-treatment, but not with longer periods of follow-up. Other researchers (e.g., Elliott and Denney, 1978; Glasgow, Schafer, and O'Neill, 1981; Whitman, 1969) did not find this positive relationship at any point in treatment or follow-up.

Summary

The vast majority of smoking cessation literature is characterized by varying degrees of short-term success, but minimal long-term success. This review and other reviews of the smoking cessation literature (Bernstein, 1969; Bernstein and McAlister, 1976; Hunt

and Matarazzo, 1973; Leventhal and Cleary, 1980; Lichtenstein and Danaher, 1976; Reutzer and Lichtenstein, 1968; McFall and Hammer, 1971; Schwartz, 1978; USPHS, 1979) have produced the following conclusions:

- 1. Essentially any treatment will decrease smoking levels by as much as 30 to 40 percent of baseline.
- 2. A return to approximately 75 percent of baseline smoking levels is common three to six months after treatment ends.
- 3. Rarely are more than 13 percent of the participants abstinent three to six months after treatment ends.
- 4. Multi-component treatment programs are notably more successful than single treatment programs in achieving smoking reduction or cessation.
- 5. Contingency contracting procedures are significantly better than non-contingent procedures in controlling smoking behavior.
- 6. Public service smoking cessation programs (e.g., American Cancer Society and American Lung Association) lack controlled evaluations which demonstrate their efficacy.
- 7. Minority group members (e.g., blacks) have a higher prevalence of smoking cigarettes when compared to whites, yet no efforts have sought to effectively attract this high risk group to treatment programs.
- 8. Group meetings have been used predominantly because they are expected to provide the basis for a supportive social environment where group cohesiveness will induce participants to comply with program methods and work together toward nonsmoking status.
- 9. In general, demographic and psychosocial characteristics have not been good predictors of smoking cessation. However, Multidimensional Locus of Control, self-efficacy and one's longest prior experience with cessation show promise. These characteristics should be included in future research endeavors to further evaluate their relationships to cessation behavior.

Purpose

The purpose of this study was to evaluate experimentally the effectiveness of two multi-treatment smoking cessation programs on the cessation behavior, perceptions, and attitudes of individuals who desired to quit smoking in the greater Lansing (Michigan) area. Specifically, the American Lung Association's "Freedom From Smoking" clinic and an Innovative Program model were evaluated for effectiveness and compared with an untreated comparative group at one and three months post-treatment.

Another aim of this study was to consider other variables reported in the literature that might be of importance as interveners in the cessation process. These variables that might influence cessation behavior are length of prior abstinence, self-efficacy, personality, participant satisfaction, group cohesion, and sex. The research measured multiple outcomes and process dimensions.

Hypotheses

<u>Hypothesis One</u>: The Innovative Package Program will be more effective (e.g., a lower percent of baseline rate, lower relapse rate, greater reduction in number of cigarettes per day, and more smoking abstinence) than the American Lung Association program.

<u>Sub-Hypothesis One</u>: The Innovative Package Program will be more effective than no treatment in comparison to the Traditional Comparative Group.

<u>Sub-Hypothesis Two</u>: There will be no significant differences between levels of prior abstinence.

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<u>Hypothesis Two</u>: Participants in the Innovative Package Program will have a higher level of self-efficacy (e.g., more confidence not to smoke) than those in the American Lung Association program.

<u>Hypothesis Three</u>: There will be no significant differences in personality characteristics between participants in the Innovative Package Program and the American Lung Association Programs.

<u>Hypothesis Four</u>: Participants' evaluation of the effectiveness of the two smoking cessation programs will show the Innovative Package Program to be significantly more effective than the American Lung Association Program.

<u>Hypothesis Five</u>: The Innovative Package Program will result in a more cohesive treatment group than the American Lung Association Program.

<u>Hypothesis Six</u>: There will be no significant differences in response to treatment by sex.

Table 1 lists the scales used to evaluate each of the hypotheses and sub-hypotheses of the study.

Table 1: Scales to Evaluate the Hypotheses of the Study

HYPOTHESES

Hypothesis One: The Innovative Package Program will be more effective (e.g., a lower percent of baseline rate, lower relapse rate, greater reduction in number of cigarettes per day, and more smoking abstinence) than the American Lung Association.

Sub-Hypothesis One: The Innovative Package Program will be more effective than the Traditional Comparative Group.

<u>Sub-Hypothesis Two</u>: There will be no significant difference between level of prior abstinence.

Hypothesis Two: Participants in the Innovative Package Program will have a higher level of self-efficacy (e.g., more confidence not to smoke) than the American Lung Association.

Hypothesis Three: There will be no significant difference in perception of personality characteristics between participants in the Innovative Package Program and the American Lung Association treatment programs.

Hypothesis Four: Participants evaluation of the effectiveness of the two smoking cessation programs will show the Innovative Package Program to be significantly more effective when compared to the American Lung Association Program.

SCALES

- 1. Number of cigarettes smoked per day.
- 2. Percentage of baseline smoking.
- 3. Abstinence rate.
- 4. Relapse rate.

Confidence.

Health Locus of Control

- 1. Internal
- 2. Powerful Others
- 3. Chance

Why Do You Smoke

- 4. Stimulation
- 5. Handling
- 6. Pleasure
- 7. Crutch
- 8. Craving
- 9. Habit
- 1. Expectation of Group Leader
- Satisfaction with Group Leader
- 3. Group Leader
- 4. Large Group Atmosphere
- 5. Program Evaluation
- 6. Satisfaction with Program
- 7. Recommend Program
- 8. Attendance

Table 1 (cont.)

HYPOTHESES	SCALES
Hypothesis Five: The Innovative Package Program will result in a more cohesive group than the American Lung Association Program.	 Small Group Atmosphere Met with Buddy/Teammate Telephoned Buddy/Teammate
Hypothesis Six: There will be no significant difference between response to treatment by sex.	All Scales

CHAPTER II

METHOD

This study utilized the Experimental Social Innovation (ESI) approach created by Fairweather (1967). In ESI research the unit of analysis is a social subsystem defined by "the functional relation—ship between outcome, participants and the social situation" (p. 77). Fairweather suggests the construction of two or more social subsystems in which one or more variables are manipulated within each subsystem and tested for desired outcome. In this study the social subsystems were defined by two types of smoking cessation programs. The models or cessation programs consisted of an innovative package program (IPP), and the American Lung Association's "Freedom From Smoking" clinic. An untreated group of volunteers was used for comparison purposes. The programs, design, subjects, instruments, and procedures are considered in Chapter II.

Innovative Package Program (IPP)

The innovative package program is based on a model proposed by Stachnik and Stoffelmayr (1981). They postulate that the most powerful social influence procedures for the alteration of smoking behavior are: (a) group support and group pressure; (b) feedback through self-monitoring or surveillance by others; (c) social reinforcement from a relevant social environment; and (d) the arrangement of contingency contracts which involve reasonable amounts of money.

Coelho (1981), in an uncontrolled study, found that such an IPP model held promise as a viable means for helping motivated smokers to quit. Because of methodological shortcomings, the outcomes of this model are still unknown.

Program Elements

The program elements for the IPP model included contracts, incentive deposits, and social support. Health education was also provided during treatment sessions.

Contracts

All participants were required to sign contracts that they would not smoke after as assigned "quit" date (e.g., beginning the day of the third session) and would abstain for the duration of the smoking project. Copies of the signed contracts were sent to a minimum of five friends, family members, and co-workers in contact with the participants on a weekly basis. The contracts sent to "significant others" gave project staff permission to check with recipients about the participants' smoking behavior on a weekly basis. The signing of contracts took place during the third session.

Incentive Deposit

Participants in the IPP condition were required to post \$40.00 deposits to support their pledges not to smoke. These deposits (contingent upon successful completion of their contracts) were to be returned at the end of the program. The total group monies were deposited in a local bank account with the interest to be distributed between the successful participants in the group. If a group member

smoked during the nonsmoking period, half of the initial deposit was deducted from that person's account and added to a bonus payment divided equally among other small group "teams" who has not smoked. Each smoking incident was penalized by deducting one-half of that person's account balance.

Social Support and Informant Role

The purpose of this element was to involve the participant's social system in the treatment process. Participants were asked to provide names, addresses and telephone numbers of at least five persons important to them (significant others). They informed those persons of their intent not to smoke for a predetermined period of time. Furthermore, they asked them to assist in the endeavor by providing information to project staff on their smoking behavior as requested.

Health Education

The major purpose of this part of the program was to help each person develop a more healthful lifestyle. This was done, in part, by bringing in community speakers to discuss such topics as: physical fitness, how to relax, etc. The focus was not as much on smoking as on achieving and maintaining a healthy style of living.

IPP Program Overview

A folder containing a program manual and materials on how to quit was prepared for session 1. Additional health education materials were handed out during the program (see Appendix A).

During the initial period of two weeks, participants were allowed to smoke without any penalties. Two meetings during this period were spent in the presentation and group discussion of different methods of quitting. This was accomplished by the group leader providing a variety of "tips." With the method(s) used selected by the individual. During this phase, participants were encouraged to develop relationships within the small group to which they were assigned and to rely on their groups for support.

The second stage was a period set for nonsmoking and during this period all "significant others" were contacted. The focus of the weekly meetings was on ways to maintain abstinence. In appreciation of the fact that giving up a habit is inadequate by itself, participants received instruction on positive health behaviors. This was accomplished by using community speakers (i.e., YM/YWCA staff, relaxation trainers, dieticians) to present information on various ways of leading a healthy lifestyle. For complete details on the IPP model see Appendix A.

American Lung Association Clinic Program (ALA)

The ALA stop smoking program entitled, "Freedom From Smoking" is based on the philosophy that smoking is a learned habit, that quitting becomes a conscious process of unlearning the habit; substituting in its place a more healthy way of living. The program offers a step-by-step reduction plan to quitting. The first phase which lasted for two weeks, focused on the health consequences of smoking and offered various techniques and methods to help individuals, within a supportive group atmosphere, gain control of their habit. At the end of this

phase, smokers were asked to quit on a specified date. Phase two began after the "quit date" and the focus of the meetings was on the benefits from quitting. The program utilized films, lectures, self-recording, relaxation tapes, group support and self-enforced contingency contracts. See Appendix B for an outline of the ALA program.

<u>Traditional Comparative Condition (TCC)</u>

The comparative group received no treatment of any type. The study was explained to them during the orientation meeting. At that time, the concept of a comparative group was explained and they were told that at the end of the study they would be offered the most effective treatment program, if they had not quit on their own. They were also notified that the experimenter would be making periodic phone checks to assess smoking status. It was suggested that they use any method they wished during the four month waiting period. In essence, this group was considered a waiting list control group.

Design

The experimental design for the study was a three-by-four-bytwo repeated measurement design. Participants were assigned randomly
to either of the experimental treatment groups or to a comparative
group, stratified by sex and length of prior abstinence. The first
independent variable was type of smoking cessation program with three
levels: (a) Innovative Package Program (IPP), (b) American Lung
Association (ALA), and (c) Traditional Comparative Condition (TCC).
The second independent variable was length of prior abstinence,
including four levels: (a) never quit, (b) quit up to four weeks,

(c) quit for one to twelve months, and (d) quit for one year or more.

The third independent variable was sex: (a) male and (b) female.

Table 2 illustrates the arrangement of these conditions and groups.

Administrative Procedures and Agreements

Because the nature of the study involved interaction and cooperation among a number of organizations and individuals at Michigan State

University and within the Lansing area community, an administrative agreement and several approvals were required to carry out the study.

The research design was reviewed and approved by the researcher's doctoral committee and the University Committee on Research Involving Human Subjects.

After receiving approval from these two committees, in keeping with Fairweather's suggestion (1977, Chapter 6), an administrative agreement was drawn up and approved by the Program Coordinator of the American Lung Association of Michigan. This agreement outlined the responsibilities of the researcher and the American Lung Association; indicated the assistance the Association would give the researcher, and his access to clinic program materials. It also detailed the random assignment of participants to treatment and control groups, and guaranteed the American Lung Association that the researcher would follow University procedures for assuring confidentiality of information (see agreement in Appendix C).

Other agreements were made with Michigan State University Clinical Center and Ingham Medical Center to reserve meeting rooms on specific evenings for the six week experimental period. The M.S.U. Department of Psychiatry's Audio-Visual section agreed to provide all necessary equipment (e.g., film projector, tape recorder) on specified dates.

Table 2: Arrangement of Cessation Model Conditions, By Length of Prior Abstinence and Sex

	Cessati	Cessation Model Conditions ^a		
	IPP	ALA	TCC	
lever Quit				
Females	n=6	n=5	n=5	
Males	n=4	n=4	n=4	
uit Up to Four Weeks				
Females	n=9	n=11	n=9	
Males	n=7	n=7	n=7	
uit for One to Twelve Months				
Females	n=12	n=12	n=12	
Males	n=5	n=5	n=4	
uit for One Year Plus				
Females	n=4	n=4	n=4	
Males	n=2	n=2	n=2	

^aThe number of participants originally assigned to that condition.

The Michigan Department of Public Health (Division of Occupational Health) agreed to provide a carbon monoxide breath analyzer. Lastly, the Pastors Council of Greater Lansing agreed to assist in the promotion of the experiment through their member churches and provide meeting space as needed.

Recruitment of Volunteers

An important element in conducting a comparative field experiment examining various smoking cessation methods was to attract enough potential participants to create the necessary volunteer groups.

Because extensive publicity coverage was the most effective way to accomplish this task, the local Lansing newspaper (e.g., The Lansing State Journal) was contacted and an article written asking for volunteers. A display ad was placed in a Sunday edition and a three-line classified ad was placed in the Personal Column. In addition, a local free community newspaper (e.g., The Lansing Star) carried a display ad. Community service announcements were aired on all local television networks and radio stations. Lansing area clergymen were also contacted by mail and required to publicize the study in their respective congregations. Flyers were distributed to local health agencies and local apartment complex newsletters carried information about the study.

An energetic advertising campaign was directed at the local minority community, especially through the black churches. The experimenter met with a local pastors' council in order to explain the nature of the study and the need to attract minorities to secure their cooperation and support. After this meeting, the experimenter

met individually with interested pastors to further explain the study. Three weeks prior to the study, the experimenter spoke to two of the congregations during Sunday services, about the health risks of smoking and the study. In other churches, pastors made an appeal for volunteers during Sunday worship themselves. One pastor, in addition to his personal appeal, scheduled a film-lecture explanation after worship. All black churches distributed flyers with the church bulletin to those attending Sunday worship. In addition to the active church recruitment 5,000 homes were delivered flyers along with a weekly "shopping guide" (e.g., Wheeler Dealer). Two local minority-read newspapers also carried an ad for the study (e.g., Westsider, Response). The experimenter visited two local health fairs in the minority community to hand out flyers and speak with potential volunteers.

All announcements for the study provided a local telephone number to call or an address to write for further information.

Both programs were endorsed by the American Lung Association of Michigan and the Pastors Council of Greater Lansing and Vicinity. Advertising campaign materials can be found in Appendix D.

As a result of the campaign, 255 calls were received from volunteers or persons wanting further information. During the initial contact, potential volunteers were informed that the study involved the evaluation of two smoking cessation programs which had helped smokers quit in the past. No information regarding the methods or program sponsorship was given. Callers were also told of the random assignment procedure and the requirement of a \$20.00 returnable deposit (e.g., postdated check) made out to the American

Lung Association (or another charity). The deposit check was required to reduce participant mortality and sustain motivation. The checks would be returned, uncashed, at the end of the program to participants who attended 75 percent of the scheduled meetings and completed the end of program questionnaires. These deposits were not contingent on smoking behavior and participants had the choice of donating unforfeited checks if they wanted. The callers' names and phone numbers were recorded and they were given the time, date, and place of four possible orientation meetings they could attend.

Forty-five inquiry calls were received after the orientation meetings had taken place. These individuals were informed that a program would be offered in the Fall and that they would be contacted at that time, if they had not quit on their own. They were also given the names of local agencies that offer smoking cessation programs.

Because many volunteers who desired to participate in the study were "night shift" workers, these people were offered a three week version of the ALA program by the experimenter at the American Lung Association headquarters. This program, which was not included as part of the research study, started four weeks after the study began and was provided to those who worked nights and could not participate in the study. Ten individuals paid \$20.00 (non-refundable) to the American Lung Association for this three week (7-session) cessation program.

It should be noted that although the advertising campaign for this study was extensive, one critical event entirely unconnected with the study may have heightened awareness and motivation to quit. Several days before the study began, the Michigan legislature passed a controversial, ten-cent tax increase on cigarettes that was highly publicized during the recruitment period. The tax increase was probably influential in encouraging initial inquiries about the program and may have decreased potential opposition to the deposit monies required.

<u>Subjects</u>

In response to the above advertising campaign, 146 persons volunteered to participate in the study; 53 of the volunteers were men and 93 were women. The resulting sample seemed relatively representative of the local community. It should be noted that no preselection criteria were required. The sample had the following characteristics:

- 1. The age range was from 20 to 67 years, the mean age was 41.1.
- 2. The range of previous attempts at smoking cessation was 0 to 10, the mean was 2.14.
- Smoking rates varied from 5 to 90 cigarettes per day, with a mean of 30.21.
- 4. The number of years of smoking ranged from 2 to 42 years with a mean of 21.97.
- 5. Longest periods of prior abstinence ranged from 0 days to 5 years, with a mean of 139.97 days.
- 6. There were 53 (36%) males and 93 (64%) females.
- 7. Marital status information indicated: 14% were single, 67% were married, 13% were divorced, and 6% were widowed.
- 8. Race information showed: 91% white, 7% black, 2% other (2 Native Americans and 1 East Indian).
- 9. Social class index (Hollingshead and Redlich, 1958) showed a mean of 2.63, with a range from 1 to 4.

10. The two major reasons cited as motivation for quitting were: (a) health (70%); and (b) family pressure (10%).

Comparing these statistics with the general smoking population distributions reported by smoking surveys (PHS, 1976 and Gallop, 1981) revealed that among these self-selected volunteers, females were more highly represented than they would be in a random sample of the smoking population at large.

Procedures

Orientation Meetings

At these initial meetings, the principal researcher described the study as an investigation of the relative efficacy of two group treatments for smoking cessation, both of which had shown promise in modifying smoking behavior. Volunteers were informed of the number, length and frequency of treatment sessions; of the \$20.00 returnable deposit: and of the consent procedures, random assignment and delayed comparative group. They were further informed that those assigned to the comparative group could use any method they chose to quit, but that if they or anyone in the experimental groups had not quit by the end of the experiment, they would be offered treatment in the Fall. All those present were told that no specific information regarding the treatment methods would be given until after group assignments were made, "as this would bias the results of the study", but that they would be given full information regarding their particular treatment at the first meeting. Also, at the first meeting, all \$20.00 postdated checks made out to a local charity would be collected. It was recommended that checks be made out to the

American Lung Association because "they aided the researcher by advising on news releases and by endorsing the study." During the last part of this meeting, every person who chose to volunteer was asked to sign a consent form and complete a battery of pretreatment measures (e.g., Demographic and Smoking History form, Why Do You Smoke?, Health Locus of Control, and Self-Efficacy).

After all four (standardized) orientation meetings were conducted, volunteers were stratified by sex and length of prior abstinence and randomly assigned to one of the two treatments or to the comparative group. Volunteers were then informed of their group assignment (e.g., treatment or comparative) by telephone and those in the treatment groups were told the day, time, and location of their first meeting. Those who asked for more detailed information were reminded that all information would be given at the first meeting.

Research Team

Both treatment groups were conducted by the principal researcher, an ex-smoker with several years of training in group dynamics, including work with smokers. He was assisted by one male community volunteer (nonsmoker), trained prior to the study in the operation of the carbon monoxide analyzer for measuring participant breath samples.

Treatment Sessions and Sites

The experimental conditions were equated for number and time of treatment sessions. Both programs met for seven 90 minute sessions over a six week period, with two sessions during the "quit" week. They were held at the same time (7 p.m.) on subsequent weekday evenings (e.g., Wednesday, Thursday).

The two treatment conditions were conducted at two medical care facilities in the Lansing, Michigan area. These facilities were chosen because they were both well known to the participants, easily accessible by car or bus and provided ample parking in well lit parking lots. Each site provided a medium-sized seminar room, large enough to accommodate fifty persons. Participants were accommodated in comfortable chairs around several rectangular tables. Each seminar room was equipped with a projector screen and blackboard, which aided in the dissemination of program materials. Once the treatment site arrangements were made, the two experimental treatments were randomly assigned to the facilities. As a result, the IPP condition was held on Wednesdays at the M.S.U. Clinical Center and the ALA condition was held on Thursdays at Ingham Medical Center.

Follow-Up Meetings

At one month and three months after treatment, participants were asked to come to Michigan State University to complete follow-up materials. Arrangements were made for follow-up at the last program meeting and reminders were sent one week prior to each follow-up. Participants who did not make personal appearances were mailed the questionnaire in a stamped return envelope. Participants who did not respond in person or return the mailed questionnaires were contacted by telephone to secure follow-up information on smoking behavior. Participants who appeared for follow-up meetings were debriefed as to the two experimental conditions and methods used in each program. The researcher also responded to any questions about the study which arose. Correspondence regarding follow-up and copies of the mailed questionnaire are included in Appendix F.

Measurement

Careful selection of measurement instruments is essential in ESI field experiments, especially when innovative treatment models, without established standards and expectations are used (Fairweather, 1977). Therefore, one of the particularly critical stages in designing this experiment was the choice of instruments to measure three attributes of the experimental conditions (a) the participant characteristics, (b) the social situation in which the subsystems operate, and (c) the outcome criteria by which the subsystem is evaluated.

Participant characteristics, including demographic information and smoking history, were obtained from the Smoking Project Question-naire that participants completed during the orientation sessions prior to the first week of the study. Carbon monoxide breath samples were obtained during the first, third, and last sessions of the study. Personality characteristics, including assessment of major rationale for smoking, were obtained during the orientation meeting. At all assessment periods, health-related beliefs and participants' self-control expectations were measured. The social situation of each of the two treatment subsystems was assessed by means of four measures:

- (a) administrative records including attendance and turnover rates,
- (b) economic records including monies forfeited within the IPP condition and loss of initial deposit data for both treatments, (c) group atmosphere (e.g., within small groups and the larger group) was measured during the last sessions, and (d) program and leader expectations and satisfaction were measured by two scales. An expectations scale was administered at the end of session one, and the satisfaction scale was completed during the last session. Appendix G details the assessment devices used and the frequency of administration.

Instrumentation

In order to simplify interpretation of the large numbers of items used in this study, rational-empirical scale construction and item analysis strategies were used to develop five scales discussed in this section. This scale development process involved several steps. First, the response frequency for all scale items was examined and items with low variance eliminated from further analysis. Second, scales were reviewed via a principle axis factor analysis with communalities followed by a varimax rotation to determine if any structure existed within a given rationally created scale. This was performed using the PACKAGE computer package available at Michigan State University. The minimum acceptable loading for inclusion of an item was .40. In addition, internal consistency of the rationally generated items was determined by the achievement of high coefficient alphas (Cronbach, 1970).

In the following section, measures used in the study are discussed. The analyses which resulted in the final data reduction decisions are presented.

Smoking Project Questionnaire

This is a forty-nine item, revised version of Powell and McCann's (1981) field tested instrument. In this study, the instrument which was administered provided: (a) demographic information, (b) past history of smoking and quitting patterns, (c) present motivation levels, (d) reasons for wanting to quit, (e) reasons for smoking, (f) amount of social support expected while quitting, and (g) a brief medical history. Rational-empirical scale analysis resulted in two

subscales: (a) prior difficulties and (b) social support. Table 3 shows the results of the factor analysis and alpha reliabilities.

Why Do You Smoke?

This is a 18-item factor-analyzed instrument (see Ikard, Green, and Horn, 1969) that differentiates six major rationales for smoking. Each scale contains three items. Respondents were required to make a judgment concerning the extent to which (always, frequently, occasionally, seldom, or never) the behavior in question is typical of their own. For example, to the observation that, "Smoking cigarettes is pleasant and relaxing," a response of "always" is given a score of five, "frequently" four, "occasionally" three, etc. Scores can vary from 3 to 15. The higher the score, the more important a particular factor is in the respondent's smoking. This instrument has been used extensively as part of a self-testing kit for smokers, published and distributed by the U.S. Department of Health, Education, and Welfare (1969). The six scales include measures of:

- 1. stimulation--smoking as a source of arousal.
- handling--smoking as a means of occupying an individual's hand.
- pleasurable relaxation--smoking as a reward when an individual can sit down and relax.
- 4. crutch: tension-reduction--smoking as a crutch in moments of stress or discomfort.
- 5. craving: psychological addiction--smoking satisfies a dependency need where the craving for a cigarette builds soon after one is put out.
- habit--smoking is carried out in an automatic and attentionless manner.

Table 3: The Two Scales Developed from the Smoking Project Questionnaire

Prior Difficulties Scale (High Score = More Prior Difficulties Trying to Quit)

Question No.	Item	Factor Loading
19	Thoughts	.89
18	Irritability	.88
23	Anxiety	.87
21	Trouble Staying Awake	.87
22	Trouble Sleeping	.86
25	Unable to Concentrate	.84
24	Depression	.81
20	Weight Gain	.71

Alpha = .95

Social Support (High Score = More Social Support)

uestion No.	Item	Factor Loading
47	Friends	.71
48	Co-workers	.65
46	Spouse/Housemate	.53

Alpha = .64

Carbon Monoxide (CO)

Alveolar carbon monoxide, an index of smoking exposure and health risk (Frederiksen and Martin, 1979) was measured in the expired air of participants three times during the treatment phase. Measurement of CO followed procedures described by Jones, Ellicott, Cadigan, and Gaensler (1958). The procedure required participants to (a) completely empty their lungs of all air, (b) take a deep breath, (c) hold the inhaled air for 20-seconds, (d) exhale approximately one-half of the held air, and (e) blow the remaining air into a one liter polyvinyl bag for measurement. The air sample from the breath holding procedure was then analyzed using an Ecolyzer 2000 Series (Energetics Science, Inc., Elsford, NY) which has been shown to be accurate to one partper-million (ppm) alveolar CO (Horan, Hackett, and Linberg, 1978). While waiting for the sample to be taken, participants were asked to fill out a form which indicated smoking status, number of cigarettes that day; and when they smoked their last cigarette (see Appendix G). The Ecolyzer was calibrated twice per session with a standardized sample of CO (60ppm). Measurements were made during the first, third, and last sessions without prior notification to the participants of the testing for CO.

Multidimensional Health Locus of Control

The MHLC (Wallston, Wallston, and DeVellis, 1978) scales attempt to measure the respondents' beliefs that the source of reinforcements for health related behaviors is primarily (a) internal, that one controls his or her health, (b) that chances does, and (c) that powerful others do. Each of the three subscales consist of six items

in Likert-type format, ranging from "Strongly Disagree" (scored as one) to "Strongly Agree" (scored as six), which are presented to the respondent as a unified scale of 18 items. A respondent obtains a score on each of the three scales. Two equivalent forms for each scale have been developed, this study utilized Form A.

Self-Efficacy

A measure of self-efficacy, developed by DiClemente (1981), consisted of a 31-item scale. The items represented differing intensity levels of various emotional states and a variety of situations which are smoking-related. The confidence scale required the participants to rate how confident they were that they could avoid smoking in the situations described. The measure of confidence was taken on a five-point Likert scale ranging from "Not At All" (scored one) to "Extremely" (scored five). A scale score was obtained by summing the items within each scale.

Small Group Atmosphere

This is a 12-item attitude scale which measures the degree to which participants found social support and attraction within the small groups they met with over the course of the program. The scale was adapted from items developed by Fairweather et al., (1960).

Rational-empirical scale construction analysis was performed on the 12 original items. Factor analysis with communalities and varimax rotation was performed and suggested one factor with all 12 original items retained. Each participant was given a score by summing across all items. A complete list of items on this scale and the internal consistency analysis at the end of program is given in Table 4.

Table 4: Small Group Atmosphere Scale (High Score = Greater Small Group Support)

uestion No.	Item	Factor Loading
Q 9	All the members in my small group cooperated with each other.	.81
Q 1	The amount of support I received from my small group is best described as	.80
Q 2	I feel that I respected	.72
Q 4	I enjoyed being with my small group.	.72
Q 6	I believe my small group was	.67
Q 8	Considering my small group as a whole, I	.66
Q 7	I felt I could depend on	.66
Q 3	If I was given the opportunity to change to a different small group, I would have	.64
Q 12	How receptive was your small group to suggestions about solutions offered by different small group members?	.63
Q 5	I was interested in the same things that most of the members in my small group were interested in.	.63
Q 11	How free did you feel to say what you thought during small group discussions?	.60
Q 10	My opinions were given adequate consideration during small group discussions.	.58

Large Group Atmosphere

This is an 11-item attitude scale which measures the degree to which participants feel social support and attraction within the entire group (i.e., all the people in their program). This scale was constructed from items developed by Fairweather et al., (1960).

Rational-empirical scale analysis resulted in a single scale containing all the original ll items. Each participant was given a single score by summing across all ll items. A list of these scale items and the internal consistency analysis at the end of program is given in Table 5.

End of Program/Follow-Up Questionnaires

The End of Program, One and Three Month Follow-Up questionnaires were adapted from Powell and McCann (1981).

End of Program Questionnaire. This questionnaire was used to evaluate a participant's: (a) smoking rate, (b) degree of difficulty with nonsmoking, (c) social support systems, and (d) satisfaction with the program.

One Month Follow-Up. This questionnaire was used to evaluate participants': (a) smoking rates, (b) degree of difficulty with nonsmoking, (c) social support systems, and (d) satisfaction with the program.

Three Months Follow-Up. This questionnaire evaluated the participants': (a) smoking rates, (b) degree of difficulty with nonsmoking, (c) social support systems, and (d) satisfaction with personal lifestyle.

Table 5: Large Group Atmosphere Scale (High Score = More Large Group Support)

Question No.	Item	Factor Loading
Q 16	Do you feel that your opinions were given adequate consideration during the general group meetings?	.80
Q 15	How receptive was the entire group to suggestions about solutions offered by different participants?	.78
Q 14	How free did you feel to say what you thought during group discussions?	.77
Q 17	All the members of the entire group cooperated with each other.	.73
Q 19	I enjoyed being with the entire group.	.73
Q 18	The amount of support I received from the entire group is best described as	.71
Q 21	Degree to which the entire group was able to express humor at appropriate times.	.70
Q 13	How satisfied were you with the general group discussions?	.67
Q 20	Degree to which entire group paid attention to what was being discussed.	.64
Q 23	Degree to which there was a cooperative vs competitive social atmosphere?	.62
Q 22	Degree to which the entire group was serious about quitting?	.50

Program Evaluation

This questionnaire evaluated participant compliance with program assignments and use of materials. Participants specified on a scale whether a specific assignment was completed and the extent to which it was or was not helpful (e.g., l = didn't do it; 2 = did it, was not helpful; 3 = did it, was not very helpful; 4 = did it, moderately helpful; 5 = did it, very helpful; and 6 = did it, extremely helpful). IPP participants evaluated 21 assignments and activities; the ALA participants evaluated 27. Each person was given a score which reflected the percent of assignments completed at the end of the program. This scale was a revised version from the ALA evaluation (1981).

Self-Recording Tally Sheet

Each cigarette smoked was recorded on monitoring forms that participants carried with their cigarette packs. Participants monitored their smoking rates throughout a two-week treatment period.

Expectation/Satisfaction with Leader and Program

This scale contained seven items related to the group leader rated on a semantic differential scale. In addition, two items asked about the program, one about the participants' status, and one about their expected smoking status in six months. The scale was presented at the end of session one and participants were asked to rate their expectations about their group leader, the program, and smoking status. Again, at the end of session seven, participants were asked to rate their satisfaction with their group leader and program. Also, to

indicate their present smoking status and expected smoking status in six months.

Scale analysis of the group leader rating items resulted in a scale of five items. One item was dropped because of its low relationship to the total factor. Table 6 shows the results of the factor analysis. Each person was given a total score on this scale by summing all items. Copies of all instruments discussed in this section can be found in Appendix G.

Table 6: Group Leader Rating Scale (High Score = High Satisfaction)

Question No.	Item	Factor Loading
Q 2	Worthless - Valuable	.70
Q 3	Unhelpful - Very Helpful	.70
Q 4	Lacks Knowledge - Well-Informed	. 64
Q 5	Unsupportive - Supportive	.58
Q 1	Unpleasant - Pleasant	.57

Alpha = .77

Field Testing and Instrument Reliability

The majority of scales utilized in this study were used previously in smoking cessation research. However, prior to the start of this experiment two scales (e.g., Health Locus of Control and Self-Efficacy) were field-tested for internal consistency. This was accomplished with two different groups of cigarette smokers: (1) adult smokers within the local community, and (2) college student smokers.

Field observations by the principal researcher indicated that large numbers of cigarette smokers attended local bingo halls. Further observation tended to indicate that these smokers did not appear to be different from the local community population or cigarette smokers in general. Bingo players represented a variety of groups (i.e., age, sex, racial background, etc.). The principal researcher, after receiving permission from bingo hall managers, administered the Health Locus of Control Forms (A & B) and the Self-Efficacy scales to each person who volunteered for the field test. Additional subjects were obtained from several local black churches in Lansing.

During the field testing period, the principal researcher was involved with a smoking cessation project for students that took place in the dorms at Michigan State University. During the period, Health Locus of Control scales were field-tested for internal consistency. In addition, all scales were reviewed by several smokers and members of the researcher's doctoral committee for wording, length, and appropriateness of response categories.

Table 7 indicates the results of these analyses. The "Why Do You Smoke Test" is also included with its pretest internal consistency. Although this instrument has been widely used, very little has been reported on its internal consistency for smokers in community cessation projects.

Table 7: The Reliability and Internal Consistency of Field-Testing

C - 1	Reliabilitya	Internal	Consistency
Scales	Field Test	Field Test	Pretesting ^b
Health Locus of Control			
Internal Scale:			
Form A ^C		90 (=44)	
Form A		.80 (n=44) .61 (n=40)	.67
Form B		.64 (n=25)	.07
Form A & B	.87	.78	
Powerful Others Scal	<u>e</u>		
Form A ^C		.52	
Form A		.50	.68
Form B	00	.42	
Form A & B	.83	.71	
Chance Scale			
Form A ^C		.42	
Form A		.55	.55
Form B		.47	
Form A & B	.73	.62	
Self-Efficacy			
Temptation Scal	e	.93 (n=46)	.90
Confidence Scal	e	.96 (n=46)	.93
Why Do You Smoke?			
Stimulation			.83
Handling			.58
Pleasure			.60
Crutch Craving			.71 .65
Habit			.68

a = split-half reliability on both forms, corrected by Spearman Brown Formula

b = n for pretest = 146

c = college student smokers

CHAPTER III

RESULTS

The results of this study are presented in these sections:

(a) comparability of samples, (b) analysis of hypotheses, and (c) analysis of the associative results.

Comparability of Samples

This section of the data will be presented in two parts: (a) subject attrition, and (b) analysis of pretest data.

Attrition

A total of 146 smokers from the community volunteered to participate in the experiment. During the course of the study 33 withdrew (see Table 8). Of these, fourteen chose not to attend any of the seven sessions and 19 withdrew prior to completing the first four sessions (i.e., the criteria for inclusion in analysis of treatment effects). Persons who withdrew from the study were contacted by telephone to obtain smoking status information at all follow-up assessment points. Table 9 displays the chi-square test for attrition by experimental treatment. It shows a chi-square of .248 which, with one degree of freedom, does not reach the .05 level of significance. Table 9 also shows that length of prior abstinence and sex did not

Table 8: Attrition by Condition

	Experimental Condition					
	IPP	ALA	Total			
Attrition	18 (36.7%)	15 (30.0%)	33 (33.3%)			
Non-Attrition	31 (63.3%)	35 (70.0%)	66 (66.7%)			

Table 9: Chi-Square Analysis for Attrition

Variable Description	df	Chi-Square	Level of Significance
Program	1	0.248	.62
Prior Abstinence	3	2.517	.47
Sex	1	0.049	.82

Note. For those (n=99) who were assigned to IPP or ALA

reach the .05 level of significance for attrition. All attrition took place between sessions one to three (i.e., treatment phase). No attrition for the comparative group was found throughout the experimental period.

Attrition was assessed from two points during the study period:

(a) those who volunteered and chose not to attend (i.e., no-shows)

and (b) those who attended three sessions or less before deciding not
to continue (i.e, drop outs). Because these two types were different
in their responses to treatment, no-shows and drop outs were compared
with participants on demographic data to ascertain any meaningful
differences.

No-Shows

Table 10 displays the analysis of variance between participants and no-shows. Two variables: (a) education and (b) social class score were significant at the .05 level of significance; two variables, occupation, and motivation showed marginal effects. No-shows had a lower education score and a lower social class index score. No-shows also tended to have a lower occupation rating and a lower motivational level.

Table 10: Comparison of Participants and No-Shows on Selected Criteria

Variable	Participants	No-Shows	Test of Significance	Prob.
Occupation	3.13	3.86	F=3.258	.0749
Education	2.68	3.36	F=3.968	.0449 ^a
Social Class	2.53	3.07	F=4.764	.0321 ^a
Motivation	3.18	2.86	F=2.832	.0964

a p < .05

Drop Outs

Table 11 displays the analysis of variance between participants and drop outs. The two groups were compared on demographic data and on the <u>Group Leader and Program</u> rating scale administered at the end of session one. Two variables: (a) number of smokers in the home and (b) the <u>chance</u> scale of the Health Locus of Control were significant at the .05 level; three variables showed marginal effects. Drop outs had fewer smokers in thier home and scored lower on the <u>Chance Locus</u> of Control scale. They also tended to have smoked for more years,

Table 11: Comparison of Participants and Drop Outs on Selected Criteria

			Test of	
Variable	Participants	Drop Outs	Significance	Prob.
Years smoked	21.67	26.63	F=3.438	.0673
Smokers in the home	.53	.16	F=4.358	.0399 ^a
I think this program will help me to stop smoking	5.53	5.21	F=3.517	.0642
At the end of this program I expect I will be	2.98	2.89	F=3.584	.0618
Health Locus of Control-Chance Scale	15.70	12.07	F=5.738	.0190 ^a

a p < .05

did not think their treatment would help them stop smoking, and tended to expect that they would be smoking at the end of the program, when compared with participants.

Sakoda, Cohen, and Beal (1954) provides a method of determining the number of significant differences expected when a series of N significance tests are compared. Their table indicated that two significant differences in a series of forty-two for no-shows and forty-six for drop outs would be expected to occur with a probability greater than .50 at .05 level of significance. Therefore, although these significance differences hold meaningful value it is possible that these differences were chance differences.

Analysis of Pretest Data

Evidence of success in achieving sample similarity by random assignment is found in Table 12. A pretest questionnaire to gather

Table 12: Comparison of Participants on Demographic Variables by Cessation Model

		sation Model		Test of
Variable	IPP	ALA	TCC	Significance
Age in years	38.94	42.26	40.30	F=0.706
Weight in pounds	151.77	149.60	144.79	F=0.597
Number of children	2.16	2.00	2.00	F=0.109
Mean occupation score	3.03	3.17	3.40	F=0.762
Mean education score	2.48	2.86	2.81	F=0.993
Mean SES score	2.45	2.60	2.81	F=1.681
Years smoked	20.94	22.31	20.45	F=0.310
Cigarettes per day	30.48	29.77	31.26	F=0.135
Number of quite attempts	2.94	2.00	1.72	F=3.940*
Longest abstinence in days	165.81	104.23	119.32	F=0.552
Time thinking of quitting	4.65	3.94	4.40	F=1.521
Nicotine content of cigarette (milligrams)	.97	.91	.81	F=1.753
Cigarette size	2.13	2.20	2.04	F=0.255
Number of smokers in the home	.42	.63	.45	F=0.905
Number of smokers at work	2.61	2.40	2.45	F=0.051
Enjoy smoking	2.55	2.14	2.30	F=2.158
Motivation	3.35	3.03	3.17	F=2.065
Trouble expected while quitting	2.87	3.03	3.00	F=0.551
Been told to quit by doctor	2.48	1.83	1.91	F=1.817
General health	3.26	3.14	3.32	F=0.814
First cigarette	1.52	1.20	1.47	F=1.416
When attended a clinic in past	1.03	.97	.43	F=2.225
Past difficulty scale	3.10	3.00	3.11	F=0.035
Social support scale	11.94	12.30	12.04	F=0.463

Table 12: (cont.)

Variable	IPP Ce	essation Mode	Id	1004 05
		ALA	TCC	Test of Significance
Why Do You Smoke?				
Stimulation	9.55	7.00	8.19	F=5.843**
Handling	6.97	6.11	6.89	F=1.248
Crutch	11.10	11.66	12.04	F=1.389
Craving	11.63	11.51	11.43	F=0.080
Habit	7.87	7.49	8.45	F=1.326
Pleasure	10.80	11.03	11.00	F=0.109
Self-Efficacy				
Confidence	81.19	74.94	75.98	F=1.237
Health Locus of Control				
Internal	28.97	27.03	27.89	F=1.676
Chance	15.61	15.77	16.00	F=0.051
Powerful Others	16.16	15.31	16.06	F=0.218
Most Important Reason t	o Quit			
% Health	61.3	68. 6	78.7	
% Family pressure	9.7	14.3	8.5	
% Social pressure	3.2	2.9	0.0	$\chi^2 = 10.042$
% No longer enjoy	0.0	2.9	2.1	DF=12
% Save money	3.2	5.7	4.3	
% Physical symptoms	6.5	2.9	2.1	
% None of above	16.1	2.9	4.3	
Spouse's Smoking Status				
% Never smoked	29.0	22.9	23.4	
% Exsmoker	32.3	14.3	17.0	$\chi^2 = 8.406$
% Trying to quit	9.7	22.9	10.6	DF=8
% Not trying to quit	12.9	11.4	17.0	
% Does not apply	16.1	28.6	31.9	

Table 12 (cont.)

		Cessation Model		Test of
Variable	IPP	ALA	TCC	Significance
Presently Under Care of Physician				
% Yes	22.6	28.6	27.7	$\chi^2 = 0.353$
% No	74.4	71.4	72.3	DF=3
Difficulty Refraining Wh Smoking is Forbidden	nere			
% Yes	22.6	22.9	25.5	$\chi^2 = 0.119$
% No	77.4	77.1	74.5	DF=2
<u>Cigarette Hate Most to</u> <u>Give Up</u>				
% First in morning	25.8	22.9	27.7	
% During/after meals	41.9	42.9	36.2	$\chi^2 = 3.646$
% During/after stress	25.8	20.0	27.7	DF=8
% During/after social	6.5	11.4	8.5	
% None of above	0.0	2.9	0.0	
Smoke More During Mornir	ng			
% Yes	41.9	37.1	39.3	χ ² =0.917
% No	58.1	62.9	61.7	DF=2
Previously Attended Clir	nic			
% Yes	41.9	28.6	17.0	χ ² =5.857*
% No	58.1	71.4	83.0	DF=2
Marital Status				
% Currently married	77.4	68.6	61.7	$\chi^2 = 2.130$
% Not currently married	22.6	31.4	38.3	DF=2

a_{Number of subjects: IPP = 31, ALA = 35, TCC = 47}

Note. F-test DF = (2,112)

^{*}p < .05

^{**}p < .01

demographic information about each volunteer's past and present smoking history, medical history, and motivation were collected during an introductory meeting prior to random assignment. Eleven personality scales related to health beliefs, self-efficacy and reasons for smoking were also included in the questionnaire.

Although participants were randomly assigned, both treatment groups and the comparative group were examined for possible differences on relevant demographic variables. Six variables were eliminated because of low variance (e.g., race, smoke a pipe, number of pipe bowls, smoke cigars, number of cigars and inhale). Analysis of variance and chi-square analyses are summarized for condition, sex, and length of prior abstinence in Tables 12, 13, and 14, respectively.

The comparisons between conditions, as presented in Table 12, indicate that there were three significant differences between treatments. Differences were found on: (a) Number of previous quit attempts, (b) Stimulation scale of the "Why Do You Smoke?" Test, and (c) Percent who attended another cessation program in the past. Table 12 showed that IPP participants had more previous quit attempts (e.g., mean = 2.94) followed by the ALA group (mean = 2.00) and the control group (mean = 1.72). On the <u>Stimulation</u> scale, IPP participants had a higher score (mean = 9.55) followed by the comparative group (mean = 8.19) and then the ALA condition (mean = 7.00). Also, a higher percentage of IPP (41.9%) had attended another clinic in the past than ALA (28.6%) and TCC (17.0%). Sakoda et al. (1954) indicates that three significant differences in a series of forty-two significance tests would be expected to occur with a probability of between .30 and

Table 13: Comparison of Participants on Demographic Variables by Sex

		exg	Test of
Variable	Males	Females	Significance
Age in years	41.02	40.24	F=0.123
Weight in pounds	172.74	133.68	F=82.739***
Number of children	1.86	2.15	F=0.888
Occupation score	3.19	3.25	F=0.058
Education score	2.55	2.85	F=1.708
SES score	2.55	2.70	F=0.864
Years smoked	22.00	20.66	F=0.409
Cigarettes per day	32.81	29.27	F=2.050
Number of quit attempts	2.29	2.06	F=0.363
Longest abstinence in days	113.55	135.59	F=0.210
Time thinking of quitting	4.24	4.38	F=0.186
Nicotine content of cigarette (milligrams)	.89	.89	F=0.001
Cigarette size	1.83	2.28	F=5.651*
Number of smokers in the home	.45	.52	F=0.247
Number of smokers at work	3.45	1.90	F=8.607**
Enjoy smoking	2.26	2.35	F=0.330
Motivation	3.12	3.21	F=0.516
Trouble expected while quitting	2.90	3.01	F=0.751
Been told to quit by doctor	2.05	2.04	F=0.000
General health	3.36	3.18	F=2.099
First cigarette	1.29	1.46	F=1.171
When attended clinic in past	.55	.89	F=1.460
Past difficulty scale	3.00	3.11	F=0.094
Social support scale	12.02	12.14	F=0.134

Table 13: (cont.)

V	Se		Test of
Variable	Males	Females	Significance
Why Do You Smoke?			
Stimulation	7.90	8.37	F=0.564
Handling	6.86	6.56	F=0.354
Crutch	10.50	12.37	F=17.967***
Craving	10.86	11.90	F=6.116**
Habit	8.00	7.99	F=0.001
Pleasure	10.90	10.99	F=U.039
<u>Self-Efficacy</u>			
Confidence	81.81	74.30	F=5.133*
Health Locus of Control			
Internal	27.02	28.45	F=2.926
Chance	16.00	15.72	F=0.073
Powerful others	16.26	15.62	F=0.315
Most Important Reason to Quit			
% Health	71.4	70.4	
% Family pressure	11.9	9.9	
% Social pressure	0.0	2.8	x ² =4.915
% No longer enjoy	2.4	1.4	DF=6
% Save money	7.1	2.8	
% Physical symptoms	4.8	2.8	
% None of above	2.4	9.9	
Spouse's Smoking Status			
% Never smoked	33.3	19.7	_
% Exsmoker	16.7	22.5	$\chi^2 = 5.223$
% Trying to quit	19.0	11.3	DF=4
% Not trying to quit	9.5	16.9	
% Does not apply	21.4	29.6	

Table 13: (cont.)

		Sex ^a	Test of
Variable	Males	Females	Significance
Presently Under Care of			
Physician			•
% Yes	19.0	31.0	x ² =1.365
% No	81.0	69.0	DF=1
Difficulty Refraining Where Smoking is Forbidden			_
% Yes	33.3	18.3	$\chi^2 = 2.501$
% No	66.7	81.7	DF=1
Cigarette Hate Most to Give Up			
% First in morning	28.6	23.9	_
% During/after meals	40.5	39.4	$\chi^2 = 2.410$
% During/after stress	19.0	28.2	DF=4
% During/after social	11.9	7.0	
% None of above	0.0	1.4	
Smoke More During Morning			
% Yes	47.6	33.8	$\chi^2 = 1.577$
% No	52.4	66.2	DF=1
Previously Attended Clinic			0
% Yes	23.8	29.6	x ² =0.199
% No	76.2	70.4	DF=1
Marital Status			0
% Currently married	78.6	62.0	$\chi^2 = 2.629$
% Not currently married	21.4	38.0	DF=1

aNumber of subjects: Males = 42, Females = 71
*p < .05
**p < .01
***p < .001
Note. F-test DF = (1,111)

Table 14: Comparison of Participants on Demographic Variables by Length of Their Abstinence

	Len		ior Abstir		Test of
Variable	Q1	Q2	Q3	Q4	Significance
Age in years	41.62	41.24	39.14	40.36	F=0.290
Weight in pounds	146.67	153.88	144.28	143.50	F=0.895
Number of children	2.29	2.21	1.83	1.71	F=0.699
Occupation score	3.62	3.33	2.92	3.14	F=1.356
Education score	2.86	2.83	2.50	2.86	F=0.701
SES score	2.81	2.71	2.44	2.71	F=1.018
Years smoked	21.86	21.62	20.64	20.07	F=0.129
Cigarettes per day	32.10	34.00	27.06	27.14	F=2.447
Number of quit attempts	.43	2.26	2.53	3.38	F=9.506**
Time thinking of quitting	3.95	4.38	4.47	4.36	F=0.443
Nicotine content of cigarette (milligrams)	.95	.96	.81	.77	F=1.817
Cigarette size	2.33	1.98	2.19	2.00	F=0.753
Number of smokers in the home	.38	.60	.50	.36	F=0.632
Number of smokers at work	2.43	3.00	2.08	2.00	F=0.856
Enjoy smoking	2.38	2.50	2.11	2.21	F=1.658
Motivation	3.10	3.14	3.28	3.14	F=0.433
Trouble expected while quitting	2.95	2.98	3.00	2.93	F=0.049
Been told to quit by doctor	1.95	2.19	2.14	1.50	F=0.783
General health	3.29	3.21	3.25	3.29	F=0.083
First cigarette	1.14	1.33	1.44	1.86	F=2.171
When attended a clinic in past	.52	1.10	.72	.21	F=1.637
Past difficulty scale	.48	3.69	3.75	3.36	F=28.660**
Social support scale	12.25	12.04	11.76	12.94	F=1.791

Table 14: (cont.)

			or Absti		Test of
Variable	Q1	Q2	Q3	Q4	Significance
Why Do You Smoke?					
Stimulation	7.29	8.57	8.14	8.57	F=0.850
Handling	6.33	6.45	6.69	7.79	F=1.140
Crutch	11.38	11.26	12.25	11.85	F=1.208
Craving	11.48	11.81	11.17	11.54	F=0.542
Habit	7.43	8.40	7.86	7.92	F=0.659
Pleasure	11.62	11.26	10.69	9.62	F=3.013*
Self-Efficacy					
Confidence	74.05	75.45	79.31	80.86	F=0.751
Health Locus of Control					
Internal	28.05	27.57	28.22	28.00	F=0.154
Chance	15.95	15.79	15.36	16.93	F=0.291
Powerful Others	15.95	15.05	16.53	16.43	F=0.463
Most Important Reason to Quit					
% Health	71.4	64.3	86.1	50.0	
% Family pressure	9.5	16.7	5.6	7.1	
% Social pressure	0.0	2.4	0.0	7.1	$\chi^2 = 28.506*$
% No longer enjoy	4.8	0.0	0.0	7.1	DF=18
% Save money	14.3	2.4	2.8	0.0	
% Physical symptoms	0.0	4.8	0.0	14.3	
% None of the above	0.0	9.5	5.6	14.3	
Spouse's Smoking Status					
% Never smoked	19.0	23.8	27.8	28.6	
% Exsmoker	14.3	14.3	33.3	14.3	χ ² =12.248
% Trying to quit	19.0	19.0	11.1	0.0	DF=12
% Not trying to quit	9.5	16.7	11.1	21.4	
% Does not apply	38.1	26.2	16.7	35.7	

Table 14: (cont.)

	1	h of D	Al-ad-		Took of
Variable	Q1	n of Pri Q2	or Absti Q3	nence [∞] Q4	Test of Significance
Presently Under Care of					
Physician					
% Yes	28.6	21.4	36.1	14.3	$\chi^2 = 3.376$
% No	71.4	78.6	63.9	85.7	DF=3
Difficulty Refraining Where Smoking is Forbidden					
% Yes	23.8	28.6	22.2	14.3	χ ² =1.271
% No	76.2	71.4	77.8	85.7	DF=3
Cigarette Hate Most to Give Up					
% First in morning	23.8	23.8	25.0	35.7	
<pre>% During/after meals</pre>	52.4	42.9	30.6	35.7	$\chi^2 = 6.665$
<pre>% During/after stress</pre>	19.0	26.2	27.8	21.4	DF=12
<pre>% During/after social</pre>	4.8	7.1	13.9	7.1	
% None of the above	0.0	0.0	2.8	0.0	
Smoke More During Morning					_
% Yes	25.0	38.0	50.0	22.2	$\chi^2 = 6.983$
% No	75.0	62.0	50.0	77.8	DF=3
Previously Attended Clinic					_
% Yes	19.0	38.1	25.0	14.3	$\chi^2 = 4.463$
% No	81.0	61.9	75.0	85.7	DF=3
Marital Status					_
% Currently married	57.1	71.4	75.0	57.1	$\chi^2 = 2.939$
% Not currently married	42.9	28.6	25.0	42.9	DF=3

^aNumber of subjects: Q1 (Never quit) = 21, Q2 (Quit up to four weeks) = 42, Q3 (Quit one month to twelve months) = 36, Q4 (Quit one year plus) = 14.

^{*}p < .05

^{**}p < .001 Note. F-test DF = (3,109)

.40 at .05 level of significance. Thus, it is probable that all three of these significant differences were chance differences.

The comparison by sex, as presented in Table 13 shows that there were seven significant differences at the .05 level. Two of these significant differences were related to expected sex differences (see NCSH, 1976).

- Weight. A significant difference (p < .001) indicated that men weighed more than women.
- Cigarette size. A significant difference (p < .05)
 indicated that women smoked cigarettes longer is size.

Table 13 also shows that significant differences between the sexes were also obtained on: (a) number of smokers at work, (b) crutch scale, (c) craving scale, and (d) confidence scale. Men reported more smokers at work and a higher level of confidence not to smoke. Women scored higher on the crutch, and craving scales. Sakoda et al. indicate that four significant differences at the .05 level of significance in a series of forty-two significance tests could be expected to occur with a probability between .10 and .20. Thus, it is likely that these four significant differences could have occurred by chance.

The comparisons between length of prior abstinence, as presented in Table 14, showed four significant differences at the .05 level.

Two of these significant differences were not unforeseen as they were allied with expected prior abstinence differences.

 Number of quit attempts. Those who had never quit had obviously quit significantly less than the other three levels. Past difficulty scale. Those who had never quit
 also scored significantly lower on this scale than
 the other three levels.

Table 14 shows that significant differences for length of prior abstinence were obtained on (a) the pleasure scale, and (b) the most important reason to quit. Table 14 showed that never quitters (Q1) scored the highest on the pleasure scale (e.g., mean = 11.62), followed by Q2 (mean = 11.26), Q3 (mean = 10.69), and Q4 participants (mean = 9.62). In addition, 86.1% of Q3, 71.4% of Q1, 64.3% of Q2, and 50% of Q4 participants rated health as their most important reason for wanting to guit on this attempt.

Sakoda et al. (1954), again, indicated that two significant differences at the .05 level of significance in a series of forty-one significance tests could be expected to occur with a probability of less than .50 at the .05 level. Thus, it is probable that these two significant differences could have occurred by chance.

The above results indicate that the study's process of randomization was successful in equating persons in treatment conditions, sex, and length of prior abstinence on the demographic variables assessed during the intake session. Therefore, any significant differences between treatment conditions, sex, or length of prior abstinence which might be found later can be given reasonable credibility.

Testing the Experimental Hypotheses

Comparative analyses of the dependent variables were done for each of the six major hypotheses and two sub-hypotheses in the study. The alpha level was set at .05 for a test of significance.

Hypothesis One: The Innovative Package Program will be more effective (e.g., a lower percent of baseline rate, lower relapse rate, greater reduction in number of cigarettes per day, and more smoking abstinence) than the American Lung Association Program.

<u>Sub-Hypothesis One</u>: The Innovative Package Program will be more effective than the traditional comparative group.

<u>Sub-Hypothesis Two:</u> There will be no significant differences between levels of prior abstinence.

Hypothesis Two: Participants in the Innovative Package Program will have a higher level of self-efficacy (e.g., more confidence not to smoke) than the American Lung Association condition.

Hypothesis Three: There will be no significant differences in personality characteristics between participants in the Innovative Package Program and the American Lung Association treatment programs.

<u>Hypothesis Four:</u> Participants' evaluation of the effectiveness of the two smoking cessation programs will show the Innovative Package Program to be significantly more effective when compared to the American Lung Association Program.

<u>Hypothesis Five</u>: The Innovative Package Program will result in a more cohesive group than the American Lung Association Program.

<u>Hypothesis Six</u>: There will be no significant differences between responses to treatment by sex.

The several variables used in testing each hypothesis were analyzed by single or repeated measures of analysis of variance or chi-square, depending on the nature of the variable. The analyses of variance for repeated measures reported below were performed with the BALANOVA computer package available at Michigan State University. These analyses are based on algorithms presented in Scheffe (1959).

As a result of attrition, one cell (i.e., IPP condition, males, never quit) was left empty. Because of the limitations of the

BALANOVA package, analyses were computed twice for each dependent variable. The first presents results for condition and sex comparisons and the second presents results for condition and prior abstinence comparisons. No interactions for the results of sex by prior abstinence could be assessed. The results of all comparative analyses are presented below.

Analysis of Hypothesis One

Hypothesis One stated that the Innovative Package Program (IPP) will be found to be more effective than the American Lung Association (ALA) Program. In addition, sub-hypothesis one stated that the IPP model will be more effective than the traditional comparative group (TCC). Finally, sub-hypothesis two stated that there would be no differences between levels of prior abstinence. Four variables were used to test this hypothesis (see Table 1 for detailed listing).

Cigarettes Per Day

Number of cigarettes smoked per day was analyzed using a 3x2x4 (treatment by sex by time) and a 4x3x4 (prior abstinence by condition by time) analysis of variance with repeated measures. Table 15 to 18 and Figure 1 summarize the analysis of cigarettes smoked per day data.

Table 15 shows that the number of cigarettes consumed per day was significantly different for the three treatment conditions, time and treatment by time interaction. A change at the means in Table 16 shows that the consumption rate dropped most in the IPP treatment (mean = 13.54), had its second largest drop in the ALA treatment (mean = 18.95) while the comparative group dropped relatively little

Table 15: Repeated Measures Analysis of Variance of Cigarettes Consumed Per Day for Treatment Conditions^a

Source	DF	MS	<u> </u>	Prob.
Treatment	2	6545.05	11.387	.0005
Sex	1	34.80	.061	.806
Treatment by Sex	2	339.77	.591	.555
Subjects	107	574.78		
Time	3	6388.13	94.270	.0005
Treatment by Time	6	727.17	10.731	.0005
Sex by Time	3	149.82	2.211	.087
Treatment by Sex by Time	6	101.68	1.501	.177
Subjects by Time	321	67.76		

aNumber of subjects: Innovative = 31, American Lung = 35, Comparative = 47

Table 16: Four Means of Cigarettes Consumed Per Day for Treatment Conditions

Treatment Condition	Time 1	Time 2	Time 3	Time 4	Mean of Means
Innovative	30.56	1.99	9.29	13.54	13.84
American Lung	30.18	10.12	14.96	18.95	18.55
Comparative	31.54	25.56	26.11	27.61	27.45
Mean of Means	30.76	12.22	16.79	20.03	19.95

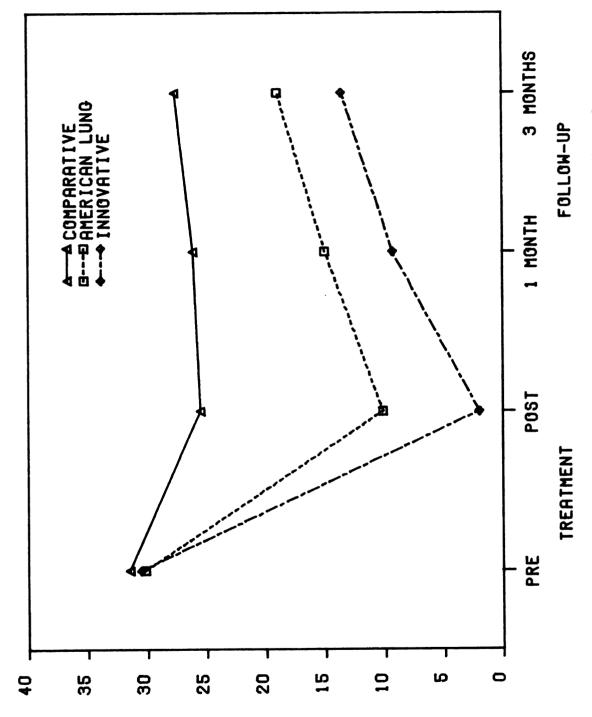
Table 17: Repeated Measures Analysis of Variance of Cigarettes Consumed Per Day for Level of Prior Abstinence^a

Source	DF	MS	F	Prob.
Prior Abstinence	3	1307.40	2.356	.076
Treatment	2	4612.72	8.312	.0005
Prior Abstinence by Treatment	6	579.80	1.045	.401
Subjects	101	554.92		
Time	3	4893.40	72.169	.0005
Prior Abstinence by Time	9	63.10	.916	.512
reatment by Time	6	458.10	6.756	.0005
rior Abstinence y Treatment by ime	18	78.61	1.159	.294
ubjects by Time	303	67.80		

aNumber of subjects: Never quit = 21, Quit up to four weeks = 42, Quit one to twelve months = 36, Quit one year plus = 14

Table 18: Four Means of Cigarettes Consumed Per Day for Level of Prior Abstinence

Prior Abstinence	Time 1	Time 2	Time 3	Time 4	Mean of Means
Never Quit	31.33	14.59	20.22	25.76	22.97
Quit Up to Four Weeks	34.15	14.40	18.64	21.23	22.11
Quit One to Twelve Months	26.26	10.48	15.10	18.28	17.53
Quit One Year Plus	26.22	7.78	12.44	12.78	14.81
Mean of Means	29.49	11.81	16.59	19.51	19.35



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Cigarettes smoked per day rates for the three conditions from pretreatment through three months follow-up. Figure 1.

(i.e., 31.54 to 27.61). These results show the effectiveness of the treatment conditions contrasted with the comparative group. The greatest effect was shown by the IPP treatment.

All treatments dropped over time as shown in Table 16, however, there was little drop in the comparative group, contrasted with the two treatments mentioned above. The treatment by time interaction effects appears to be due to the increase in cigarettes following treatment termination, as shown in the mean of means for all time periods.

Table 17 presents the analysis of variance with level of prior abstinence included. The 4x3x4 analysis of variance presented a similar treatment, time, and treatment by time significant differences, as discussed above. A marginal effect for prior abstinence was found. Subjects who had longer periods of prior abstinence tended to be smoking fewer cigarettes as shown in Table 18. This trend is especially noticeable between subjects who had never quit contrasted with those who had quit for one year or more. No significant interaction effects for prior abstinence were found.

Percent of Pretreatment Smoking

The percentage of each subject's pretreatment smoking rate was used to reflect changes in cigarette consumption. Percent of pretreatment smoking rate was analyzed using a 3x2x3 (treatment by sex by time) and a 4x3x4 (prior abstinence by treatment by time) analysis of variance with repeated measures. Tables 19 to 22 and Figure 2 summarize the analysis of the percentage of pretreatment data.

Table 19 shows that the percentage of pretreatment smoking was significantly different for the three treatment conditions, time,

Table 19: Repeated Measures Analysis of Variance of Percent of Pretreatment Smoking for Treatment Conditions

ource	DF	MS	F	Prob.
reatment	2	80368.40	25.001	.0005
ex	1	1341.37	.417	.520
eatment by Sex	2	2508.61	.780	.461
bjects	107	3214.64		
me	2	17862.80	45.365	.0005
eatment by Time	4	2181.69	5.541	.0005
by Time	2	48.33	.123	.885
eatment by Sex Time	4	239.74	.609	.657
bjects by Time	214	393.76		

Number of subjects: Innovative = 31, American Lung = 35, Comparative = 47

Table 20: Three Means of Percent of Pretreatment Smoking for Treatment Conditions

Treatment Condition	Time 2	Time 3	Time 4	Mean of Means
Innovative	6.18	33.43	44.40	28.00
American Lung	31.19	46.45	62.11	46.92
Comparative	78.65	82.45	88.08	83.06
Mean of Means	38.67	54.44	64.86	52.66

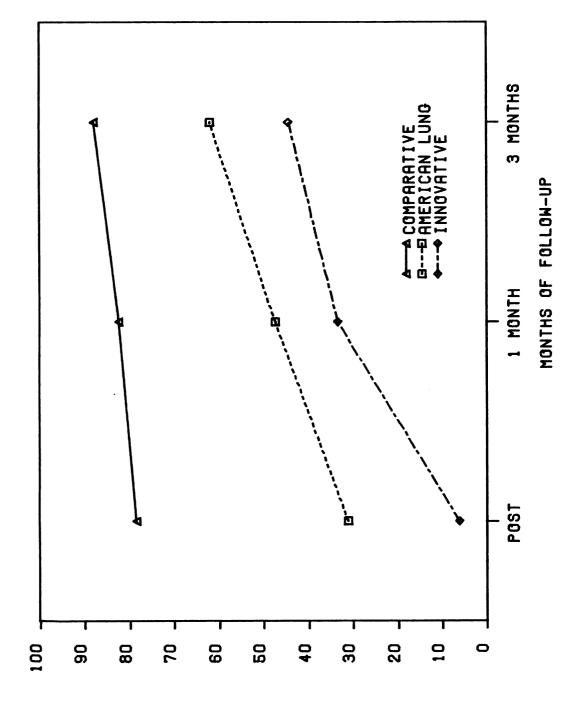
Table 21: Repeated Measures Analysis of Variance of Percent of Pretreatment Smoking for Level of Prior Abstinence^a

Source	DF	MS	F	Prob.
Prior Abstinence	3	7032.51	2.341	.078
Treatment	2	60962.20	20.289	.0005
Prior Abstinence by Treatment	6	5844.98	1.948	.081
Subjects	101	3004.65		
Time	2	15038.40	37.587	.0005
Prior Abstinence by Time	6	485.42	1.213	.301
Treatment by Time	4	2247.31	5.617	.0005
Prior Abstinence by Treatment by Time	12	182.58	.456	.938
Subjects by Time	202	400.09		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

^aNumber of subjects: Never quit = 21, Quit up to four weeks = 42, Quit one to twelve months = 36, Quit one year plus = 14

Table 22: Three Means of Percent of Pretreatment Smoking for Level of Prior Abstinence

Prior Abstinence	Time 2	Time 3	Time 4	Mean of Means
Never Quit	48.02	62.48	82.72	64.40
Quit Up to Four Weeks	41.85	56.53	62.77	53.71
Quit One to Twelve Months	35.90	53.66	66.41	51.99
Quit One Year Plus	27.78	44.22	45.56	39.19
Mean of Means	38.39	54.22	64.36	52.32



PERCENT

Percentage of pretreatment smoking rates for three conditions from end of treatment through three months follow-up. Figure 2.

and treatment by time interaction. A change at the means in Table 20 shows that percent of pretreatment smoking dropped most in the IPP treatment (mean = 44.40), had its second largest drop in the ALA treatment (mean = 62.11) while the comparative group dropped relatively little (mean = 88.08). Again, these results show the effectiveness of the treatment conditions contrasted with the comparative group. The greatest effect was shown by the IPP treatment.

All treatments dropped over time as shown in Table 20, however, the drop was smaller for the comparative group contrasted with the two treatments. Again, the treatment by time interaction appears to have resulted from the increase in smoking following the end of treatment, as shown in the mean of means across time periods.

Table 21 presents the analysis of variance with level of prior abstinence included. The 4x3x3 analysis of variance with repeated measures presented a similar treatment, time and treatment by time significant differences, as discussed above. Marginal effects for prior abstinence < and prior abstinence by treatment interaction < were found. Subjects who had longer periods of prior abstinence tended to be smoking at a lower percent of pretreatment as shown in Table 22. The marginal effect for prior abstinence by treatment seems to have resulted from the greater reduction levels for the two treatments compared to the comparative group.

Abstinence Rates

Group. As indicated by Lando (1977), "a more stringent, statistically valid, and clinically meaningful measure of treatment effects" (p. 364) is represented by the percentage of totally abstinent subjects across post-treatment intervals (see Table 23).

At the end of the programs, 26 of 31 IPP subjects (83.9%), 16 of 35 ALA subjects (45.7%) and 8 of 47 TCC subjects (17.0%) had remained abstinent from the quit date (one month prior). These differences at the end of the programs were statistically significant $\chi^2(2) = 33.88$, p < .001.

At the one month follow-up, 14 of 31 IPP subjects (45.2%), 12 of 35 ALA subjects (34.3%), and 5 of 47 TCC subjects (10.6%) had remained abstinent from the quit date (two months prior). The differences at one month follow-up were significant, $\chi^2(2) = 12.38$, p < .01.

Table 23: Percentage of Subjects Achieving Total Smoking Abstinence

	End of Treatment				One Month Three Month Follow-Up Follow-Up				
Group	n	%	(%)	n	%	(%)	n	%	(%)
IPP	26	83.9	(61.9)	14	45.2	(33.3)	10	32.3	(23.8)
ALA	16	45.7	(30.1)	12	34.3	(28.6)	8	22.9	(19.0)
TCC	8	17.0	(17.0)	5	10.6	(10.6)	4	8.5	(8.5)

Note. Figures in parentheses indicate quit rates with drop outs (i.e., those who attended one to three sessions only) included.

The three months follow-up analysis revealed that 10 of 31 IPP subjects (32.3%), 8 of 35 ALA subjects (22.9%), and 4 of 47 TCC subjects (8.5%) had maintained abstinence from the quit date (four months prior). These differences at three months follow-up were again significant, (χ^2 [2] = 7.09, p < .05).

As shown in Table 23, both treatments had higher proportions of persons abstinent at each assessment point contrasted with the

comparative group. Also, Table 23 shows that the highest proportion of nonsmokers at each assessment point favored the IPP condition.

<u>Sex.</u> Nonsignificant differences were found for abstinence rates and sex. At the end of the programs, 22 of 42 males (52.4%) and 28 of 71 females (39.4%) has remained abstinent from the quit date (χ^2 [1] =1.31, p > .05). At the one month follow-up, 13 of 42 males (31%) and 18 of 71 females (25.4%) were abstinent (χ^2 [1] = .18, p > .05). Again, at three months follow-up, 8 of 42 males (19%) and 14 of 71 females (19.7%) remained abstinent (χ^2 [1] = .01, p > .05).

Length of prior abstinence. Nonsignificant differences were found between the length of prior abstinence and smoking status at the end of the programs ($\chi^2[3] = 4.66$, p > .05); and at the one month follow-up ($\chi^2[3] = 4.84$, p > .05). However, at the three months follow-up, statistically significant differences were found.

At the three months follow-up, 2 of 21 Q1 subjects (9.5%), 7 of 42 Q2 subjects (16.7%), 6 of 36 Q3 subjects (16.7%), and 7 of 14 Q4 subjects (50.0%) remained abstinent. These differences at three months post-treatment were significant, χ^2 [3] = 10.04, p < .05. In addition, the proportion of nonsmokers in Q4 (i.e., quit one year plus) was significantly higher than for the other three levels of prior abstinence combined (i.e., 50% versus 15.2%, χ^2 (1) = 7.41, p < .01).

To assess the relationship of smoking status across time (i.e., relapse) and interaction effects, status was used as a dependent variable in a repeated measures analysis of variance. Smoking status (smoking = 0, not smoking since quit date = 1) was first examined using a 3x2x3 (treatment by sex by time) and then a 4x3x3 (prior

abstinence by treatment by time) analysis of variance. Tables 24 to 27 and Figure 3 and 4 summarize the data.

Table 24 shows that abstinence rate was significantly different for the three treatment conditions, time, and treatment by time interactions. At Time 4 (three month follow-up), Table 25 shows that the IPP treatment had the highest abstinence rate (mean = .32), followed by the ALA condition (mean = .24) while the comparative group was the lowest (mean = .07). These results show the effectiveness of the treatment conditions contrasted with the comparative group. The greatest effect was shown by the IPP treatment.

All treatments dropped over time as shown in Table 25, however, the largest drop (i.e., relapse) was in the IPP treatment. The treatment by time interaction effects appears to be due to the relapse rate following treatment termination, as shown in the mean of means for all time periods. No treatment by sex, sex by time or treatment by sex by time interaction were found.

Table 26 presents the analysis of variance with prior abstinence included. Abstinence rates was significantly different for the four levels of prior abstinence, treatments, time, and treatment by time. A marginal effect for prior abstinence by treatment was noted. Overall, persons abstinent for a year or more had the highest abstinence rate (.60) followed by prior abstinence from 1-12 months (.32), prior abstinence up to four weeks (.32), and lastly--never quitters (.19). These results indicate that having a longer period of prior abstinence seems to be an asset in quitting. The largest effect was shown for subjects who quit for one year or more in the past, as shown in Table 27.

Table 24: Repeated Measures Analysis of Variance of Smoking Status for Treatment Conditions^a

Source	DF	MS	F	Prob.
Treatment	2	4.90	12.509	.0005
Sex	1	.33	.851	.358
Treatment by Sex	2	.42	1.068	.347
Subjects	107	.39		
Time	2	2.29	38.023	.0005
Treatment by Time	4	.45	7.516	.0005
Sex by Time	2	.10	1.701	.185
Treatment by Sex by Time	4	.001	.015	1.000
Subjects by Time	214	.06		

^aNumber of subjects: Innovative = 31, American Lung = 35, Comparative = 47

Table 25: Three Means of Smoking Status for Treatment Conditions

Treatment Condition	Time 2	Time 3	Time 4	Mean of Means
Innovative	.85	.46	.32	.55
American Lung	.49	.37	.24	.37
Comparative	.17	.10	.07	.11
Mean of Means	.50	.31	.21	.34

Note. Not smoking = 1, Smoking = 0

Table 26: Repeated Measures Analysis of Variance of Smoking Status for Level of Prior Abstinence

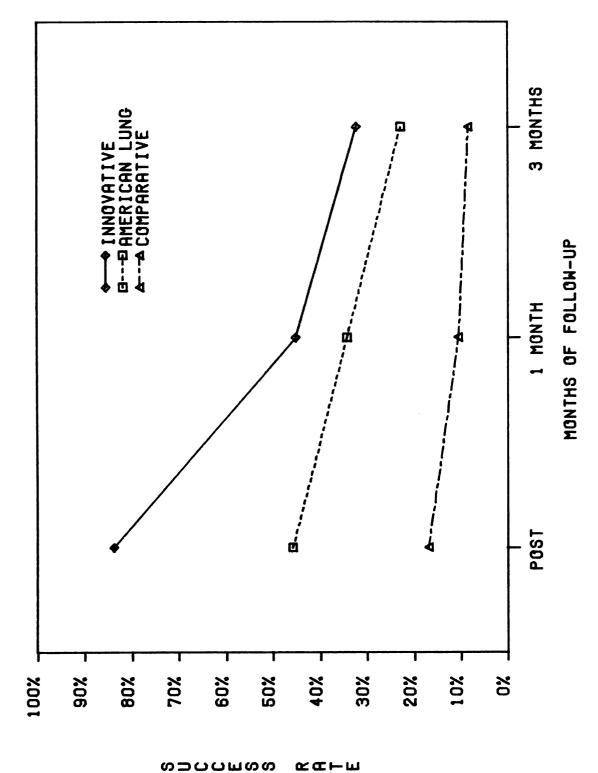
Source	DF	MS	F	Prob.
Prior Abstinence	3	2.03	5.668	.001
Treatment	2	3.57	9.977	.0005
Prior Abstinence by Treatment	6	.71	1.994	.073
Subjects	101	.36		
lime .	2	1.46	24.983	.0005
Prior Abstinence by Time	6	.03	.521	.792
reatment by Time	4	.28	4.784	.001
rior Abstinence y Treatment by ime	12	.08	1.288	.228
ubjects by Time	202	.06		

aNumber of subjects: Never quit = 21, Quit up to four weeks = 42, Quit one to twelve months = 36, Quit one year plus = 14

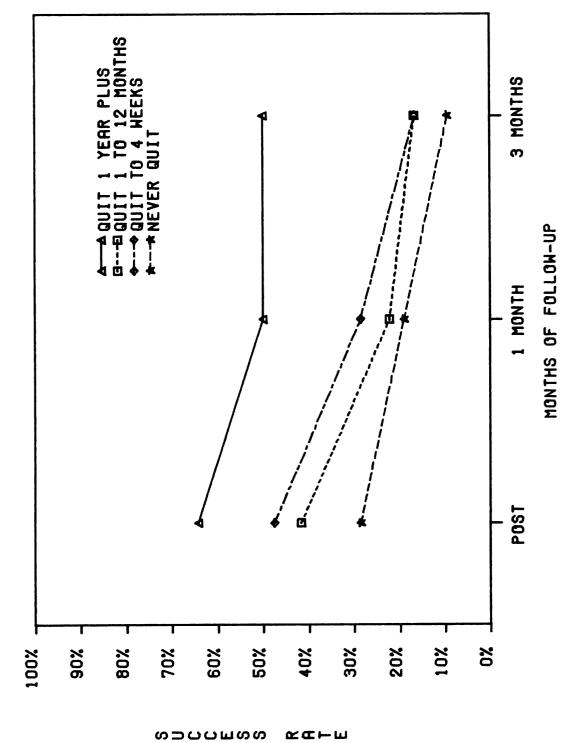
Table 27: Three Means of Smoking Status for Level of Prior Abstinence

Prior Abstinence	Time 2	Time 3	Time 4	Mean of Means	
Never Quit	.30	.17	.08	.19	
Quit Up to Four Weeks	.50	.30	.17	.32	
Quit One to Twelve Months	.49	.28	.21	.32	
Quit One Year Plus	.72	.54	.54	.60	
Mean of Means	.50	.32	.25	.36	

Note. Not smoking = 1, Smoking = 0



Success rates (percent abstinent) for three conditions from end of program through three months follow-up. Figure 3.



Success rates (percent abstinent) for four levels of prior abstinence from end of program through three months follow-up. Figure 4.

All levels of prior abstinence relapsed over time as shown in Table 27, however, there was fewer relapses for subjects who quit for a year or more contrasted with the other three levels. The treatment and treatment by time interaction effects follow a similar trend as discussed in Table 24.

In conclusion, evidence was found to support the hypothesis that the IPP condition was more effective than the ALA condition. In addition, sub-hypothesis one which stated that the IPP condition would be more effective than the comparative group was also supported by the data. However, sub-hypothesis two which stated that no differences would be found between level of prior abstinence was not supported by the data.

Analysis of Hypothesis Two

Hypothesis Two stated that participants in the IPP condition would have a higher level of self-efficacy than those in the ALA condition. One variable was used to test this hypothesis (see Table 1 for detailed listing).

Confidence Scale

The confidence scale was analyzed using a 3x2x4 (treatment by sex by time) and a 4x3x4 (prior abstinence by treatment by time) analysis of variance with repeated measures. Tables 28 to 31 summarize the data.

Table 28 shows significant effects for sex and time. Males had a higher level of confidence not to smoke than females. Table 29 shows that both treatments increased in confidence level from pretest

Table 28: Repeated Measures Analysis of Variance of Confidence Scale for Treatment Conditions

Source	DF	MS	F	Prob.
reatment	1	3302.78	1.765	.189
Sex	1	7543.62	4.031	.049
reatment by Sex	1	1975.08	1.055	.308
ubjects	62	1871.38		
ime	3	9225.48	20.549	.0005
reatment by Time	3	41.02	.091	.965
ex by Time	3	561.45	1.251	.293
reatment by Sex y Time	3	62.91	.140	.936
ubjects by Time	186	448.96		

aNumber of subjects: Innovative = 31, American Lung = 35

Table 29: Four Means of Confidence Scale for Treatment Conditions

Treatment Condition	Time 1	Time 2	Time 3	Time 4	Mean of Means
Innovative	81.10	112.38	100.30	94.52	97.08
American Lung	76.01	103.37	92.75	86.96	89.77
Mean of Means	78.55	107.88	96.63	90.74	93.42

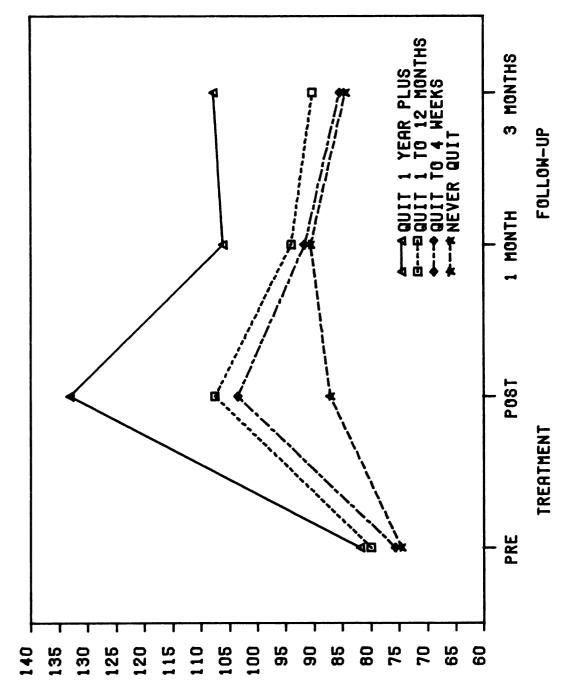
Table 30: Repeated Measures Analysis of Variance of Confidence Scale for Level of Prior Abstinence^a

Source	DF	MS	<u> </u>	Prob.
Prior Abstinence	3	5105.91	2.690	.055
Treatment	1	2809.64	1.480	.229
Prior Abstinence by Treatment	3	1504.51	.793	.503
Subjects	58	1898.08		
Time	3	7788.08	17.260	.0005
Prior Abstinence by Time	9	643.93	1.427	.180
Treatment by Time	3	15.63	.035	.991
Prior Abstinence by Treatment by Time	9	316.85	.702	.706
Subjects by Time	174	415.25	. 7 02	.700

aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 31: Four Means of Confidence Scale for Level of Prior Abstinence

Prior Abstinence	Time 1	Time 2	Time 3	Time 4	Mean of Means
Never Quit	74.57	87.13	90.59	84.44	84.18
Quit Up to Four Weeks	75.61	103.54	91.62	85.42	89.05
Quit One to Twelve Months	79.94	107.54	94.04	90.27	92.95
Quit One Year Plus	81.93	133.17	106.13	107.83	107.27
Mean of Means	78.01	107.84	95.59	91.99	93.36



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Confidence scores for length of prior abstinence from pretreatment through three months follow-up. Figure 5.

to end of program, then dropped gradually over post-treatment follow-ups.

Table 30 shows the analysis of variance with prior abstinence included. A significant effect for time and a marginal effect for prior abstinence was found. Table 31 shows that the time effects appears to be due to increase in confidence level at the end of program. As shown in Table 31, subjects who has longer periods of prior abstinence tended to have higher levels of confidence in their ability not to smoke. Figure 5 graphically shows this marginal relationship between level of prior abstinence and confidence.

In sum, no evidence was found to support the hypothesis that participants in the IPP condition had a higher level of self-efficacy than ALA participants.

Analysis of Hypothesis Three

Hypothesis Three stated that there would be no significant difference in perception of personality characteristics between participants in the IPP condition and those in the ALA condition. Nine variables were used to test this hypothesis (see Table 1 for detailed listing).

Internal Health Locus of Control

The Internal scale was analyzed using a 2x2x4 (treatment by sex by time) and a 4x3x4 (prior abstinence by treatment by time) analysis of variance with repeated measures. Table 32 to 35 summarize the data.

Table 32: Repeated Measures Analysis of Variance of Internal Health Locus of Control Scale for Treatment Conditions^a

Source	DF	MS	F	Prob.
Treatment	1	117.53	1.932	.170
Sex	1	2.90	.048	.828
Treatment by Sex	1	58.91	.968	.329
Subjects	62	60.84		
Time	3	3.98	.401	.752
Treatment by Time	3	10.99	1.109	.347
Sex by Time	3	7.30	.736	.532
Treatment by Sex by Time	3	2.00	.202	.895
Subjects by Time	186	9.14		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 33: Four Means of Internal Health Locus of Control Scale for Treatment Conditions

Treatment Condition	Time l	Time 2	Time 3	Time 4	Mean of Means
Innovative	28.71	27.89	28.35	28.34	28.33
American Lung	27.04	27.76	26.38	26.61	26.95
Mean of Means	27.88	27.83	27.37	27.47	27.64

Table 34: Repeated Measures Analysis of Variance of Internal Locus of Control Scale for Level of Prior Abstinencea

ource	DF	MS	<u> </u>	Prob.
ior Abstinence	3	54.13	.900	.447
eatment	1	300.94	5.003	.029
ior Abstinence Treatment	3	90.58	1.506	.223
bjects	58	60.15		
me	3	5.63	.569	.636
or Abstinence Time	9	8.39	.849	.572
atment by Time	3	9.64	.974	.406
or Abstinence Treatment by e	9	4.59	.464	.897
ects by Time	174	9.89		

aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 35: Four Means of Internal Health Locus of Control Scale for Level of Prior Abstinence

Prior Abstinence	Time 1	Time 2	Time 3	Time 4	Mean of Means
Never Quit	28.27	27.81	29.33	27.54	28.21
Quit Up to Four Weeks	28.46	28.50	27.88	27.58	28.11
Quit One to Twelve Months	27.44	27.48	25.98	28.13	27.26
Quit One Year Plus	26.87	26.40	29.97	24.77	26.00
Mean of Means	27.76	27.55	27.26	27.00	27.39

Table 32 shows the summary of the analysis of variance and Table 33 the means for each treatment condition. There were no significant main or interaction effects for treatment, sex, or time.

Table 34 shows the analysis of variance with prior abstinence included. A significant effect for treatment was found. The IPP treatment had a higher level of internal control than the ALA treatment. There were no effects for prior abstinence.

Powerful Others Health Locus of Control

The Powerful Others scale was analyzed using a 3x2x4 and a 4x3x4 analysis of variance with repeated measures. Tables 36 to 39 summarize the data.

Table 36 presents a summary of the analysis of variance and Table 37 shows the group means for treatment condition. An inspection of Table 36 shows a significant effect for time. Table 37 shows that this effect appears to be due to the increased level of powerful others locus of control at the end of treatment. No significant main effects for treatment or sex were found.

Tables 38 and 39 presents a summary of the analysis of variance results with prior abstinence included. A significant effect for time was found. This effect, as noted above, appears to be due to the increased level of powerful others locus of control at end of program. No significant effects were found for prior abstinence or treatment.

Chance Health Locus of Control

Tables 40 and 41 presents a summary of the 2x2x4 (treatment by sex by time) repeated measures analysis of variance for the Chance

Table 36: Repeated Measures Analysis of Variance of Powerful Others Health Locus of Control Scale for Treatment Conditions

Source	DF	MS	F	Prob.
Treatment	1	5.92	.060	.807
Sex	1	8.90	.090	.765
Treatment by Sex	1	29.67	.301	.585
Subjects	62	98.64		
Time	3	29.48	3.820	.011
Treatment by Time	3	11.84	1.535	.207
Sex By Time	3	4.91	.636	.592
Treatment by Sex by Time	3	1.72	.223	.881
Subjects by Time	186	7.72		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 37: Four Means of Powerful Others Health Locus of Control Scale for Treatment Conditions

Treatment Condition	Time l	Time 2	Time 3	Time 4	Mean of Means
Innovative	16.18	17.53	15.59	15.93	16.31
American Lung	15.41	16.47	15.27	16.85	16.00
Mean of Means	15.79	17.00	15.43	16.39	16.15

Table 38: Repeated Measures Analysis of Variance of Powerful Others Health Locus of Control Scale for Level of Prior Abstinence^a

Source	DF	MS	F	Prob
Prior Abstinence	3	20.41	.196	.899
Treatment	1	12.42	.119	.731
Prior Abstinence by Treatment	3	6.31	.061	.980
Subjects	58	104.15		
Time	3	31.21	4.127	.007
Prior Abstinence by Time	9	8.75	1.158	.325
Treatment by Time	3	10.10	1.331	.266
Prior Abstinence by Treatment by Time	9	5.57	.736	.675
Subjects by Time	174	7.56		

aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 39: Four Means of Powerful Others Health Locus of Control for Level of Prior Abstinence

Prior Treatment	Time 1	Time 2	Time 3	Time 4	Mean of Means
Never Quit	15.46	18.56	17.17	16.34	16.88
Quit Up to Four Weeks	14.81	16.10	14.54	16.42	15.61
Quit One to Twelve Months	16.69	17.21	15.77	16.81	16.62
Quit One Year Plus	16.90	18.13	15.53	15.67	16. 56
Mean of Means	15.96	17.49	15.75	16.31	16.38

Table 40: Repeated Measures Analysis of Variance of Chance Health Locus of Control Scale for Treatment Conditions^a

Source	DF	MS	F	Prob.
Treatment	1	48.36	.736	.386
Sex	1	.81	.013	.910
Treatment by Sex	1	111.81	1.765	.189
Subjects	62	63.36		
Time	3	1.41	.144	.933
Treatment by Time	3	6.28	.639	.591
Sex by Time	3	9.13	.929	.428
Treatment by Sex by Time	3	7.14	.727	.537
Subjects by Time	186	9.82		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 41: Four Means of Chance Health Locus of Control Scale for Treatment Conditions

Treatment Condition	Time l	Time 2	Time 3	Time 4	Mean of Means
Innovative	15.76	15.56	14.94	15.20	15.36
American Lung	15.76	16.49	16.43	16.32	16.25
Mean of Means	15.76	16.03	15.68	15.76	15.81

scale. No significant main or interaction effects were found between treatment, sex, or time.

Tables 42 and 43 presents a summary of the 4x2x4 (prior abstinence by treament by time) analysis of variance with repeated measures.

Table 42 shows significant differences for treatment and prior abstinence by treatment. There was also a marginal effect for prior abstinence. The ALA treatment was higher on Chance locus of control than the IPP treatment. Significant prior abstinence by treatment effects appear to have been caused by the disparity in mean scores for length of prior abstinence. Table 43 shows that subjects who quit for one year or more tended to score higher on the Chance scale when compared with never quitters.

Why Do You Smoke Test

The Why Do You Smoke Test was administered during the orientation session (intake). A review of Table 12 shows that the conditions were statistically different on only one of the six scales. IPP subjects scored higher on the Stimulation Scale than did ALA subjects $(F\ 2,112=5.84,\ p<.01)$.

In summary, evidence was found to support the hypothesis that no differences in personality characteristics exist between experimental treatments.

Analysis of Hypothesis Four

Hypothesis Four stated that the participants' evaluation of the effectiveness of the two treatment conditions would show the IPP condition to be more effective than the ALA condition. Eight

Table 42: Repeated Measures Analysis of Variance of Chance Health Locus of Control Scale for Level of Prior Abstinence^a

Source	DF	MS	F	Prob.
Prior Abstinence	3	146.82	2.568	.063
Treatment	1	227.74	3.983	.051
Prior Abstinence by Treatment	3	236.51	4.136	.010
Subjects	58	57.18		
Time	3	2.65	.270	.847
Prior Abstinence by Time	9	6.02	.613	.785
Treatment by Time	3	11.01	1.121	.342
Prior Abstinence by Treatment by Time	9	10.50	1.069	.388
Subjects by Time	174	9.82		

aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 43: Means of Chance Health Locus of Control Scale for Prior Abstinence by Treatment Condition

Prior Abstinence	Innovative	American Lung	Mean of Means
Never Quit	15.85	13.64	14.69
Quit Up to Four Weeks	15.50	16.19	15.85
Quit One to Twelve Months	14.72	16.85	15.79
Quit One Year Plus	14.70	22.58	18.64
Mean of Means	15.19	17.29	16.24

variables were used to test this hypothesis (see Table 1 for detailed listing).

Expectations of Group Leader

The Expectations of Group Leader scale, administered at the end of session one, was analyzed using a 2x2x4 (treatment by sex by prior abstinence) analysis of variance. Table 44 shows significant differences for sex and prior abstinence by sex interaction. Table 45 shows that overall, women held more positive expectations of the group leader than did men. Significant sex by prior abstinence effects appear to have been caused by the higher levels of expectations for women in all levels of prior abstinence except for never quitters where this trend was reversed (see Table 45). No significant effects for treatment or prior abstinence were found.

Attendance

Total number of treatment sessions attended was analyzed using a 2x2x4 (treatment by sex by prior abstinence) analysis of variance. Table 46 shows a significant treatment by sex interaction. An inspection of Table 47 shows that this treatment by sex effects appear to have been caused by the mean attendance reversals for sex. IPP women attended more sessions than IPP men and ALA women. ALA men attended more sessions than ALA women and IPP men.

Additional Measures of Treatment Effectiveness

Four additional scales: (a) Satisfaction with Group Leader;
(b) Large Group Atmosphere; (c) Group Leader Was; and (d) Program

Evaluation were all analyzed using a 2x2x4 (treatment by sex by prior abstinence) analyses of variances. None of these scales resulted in any significant effects.

Table 44: Analysis of Variance of Expectation of Group Leader Scale^a

Source	DF	MS	F	Prob.
Treatment	1	1.626	.638	.428
Sex	1	17.631	6.922	.011
Prior Abstinence	3	4.630	1.818	.156
Treatment by Sex	1	.131	.051	.822
Treatment by Prior Abstinence	3	2.017	.792	.504
Sex by Prior Abstinence	3	15.766	6.189	.001
Treatment by Sex by Prior				
Abstinence	2	1.813	.712	.496
Error	51	2.547		

aNumber of subjects: Innovative = 31, American Lung = 35

Table 45: Means of Expectation of Group Leader Scale for Prior Abstinence by Sex

Prior Abstinence	Men	Women	Mean of Means
Never Quit	26.00	29.22	27.61
Quit Up to Four Weeks	28.69	29.31	29.00
Quit One to Twelve Months	27.33	29.79	28.56
Quit One Year Plus	29.67	26.80	28.24
Mean of Means	28.16	29.15	28.77

Table 46: Analysis of Variance of Attendance

Source	DF	MS	F	Prob.
Treatment	1	.346	.369	.546
Sex	1	.246	.262	.611
Prior Abstinence	3	.653	.696	.559
Treatment by Sex	1	7.752	8.268	.006
Treatment by Prior Abstinence	3	. 584	.623	.603
Sex by Prior Abstinence	3	.991	1.057	.376
Treatment by Sex by Prior	_			
Abstinence	2	.005	.006	.994
Error	50	.938		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 47: Means of Attendance for Treatment by Sex

Treatment Condition	Men	Women	Mean of Means
Innovative	5.42	6.28	5.93
American Lung	6.38	5.82	6.03
Mean of Means	5.92	6.02	5.98

In addition, two scales: (a) Satisfaction with Program and (b) Recommended Program were both analyzed using a 2x2x2 (treatment by sex by time) and a 4x2x2 (prior abstinence by treatment by time) analysis of variance with repeated measures. Again, no significant effects were found. Thus, neither treatment surpassed the other on these measures. All participants indicated they were satisfied with their respective programs and group leader; and would recommend their program to others who wanted to quit.

In summary, little evidence was found to support the hypothesis that IPP subjects viewed their treatment as more effective when compared with ALA subject's evaluation of their program.

Analysis of Hypothesis Five

Hypothesis Five stated that the Innovative Package Program (IPP) would result in a more cohesive group than the American Lung Association (ALA) program. Three variables were used to test this hypothesis (see Table 1 for detailed listing).

Small Group Attendance

Table 48 shows a significant interaction effect for treatment by sex by prior abstinence and a marginal effect for treatment condition. Table 49 shows that although not significant, IPP subjects tended to have a higher level of perceived group atmosphere.

Support Phone Calls

At the end of program, 20 of 31 IPP subjects (64.5%), and 6 of 29 ALA subjects (17.1%) had made at least one support phone call.

Table 48: Analysis of Variance of Small Group Atmosphere Scale^a

Source	DF	MS	F	Prob
Treatment	1	162.186	3.101	.084
Sex	1	21.301	.407	.526
Prior Abstinence	3	91.074	1.741	.170
Treatment by Sex	1	2.057	.039	.844
Treatment by Prior Abstinence	3	76.180	1.457	.237
Sex by Prior Abstinence	3	41.936	.802	. 499
Treatment by Sex by Prior				
Abstinence	2	297.960	5.697	.006
Error	51	52.301		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 49: Means of Small Group Atmosphere Scale for Treatment by Sex

Treatment Condition	Men	Women	Mean of Means	
Innovative	48.08	47.89	47.97	
American Lung 43.92		44.68	44.40	
Mean of Means 45.92		46.17	46.12	

These differences at the end of program were statistically significant, $\chi^2(1) = 13.53$, p < .001. However, at three months follow-up this effect was no longer present. At three months follow-up, 4 of 26 IPP subjects (13.3%) and 1 of 34 ALA subjects (2.9%) made telephone support calls since the end of program ($\chi^2[1] = 1.24$, p > .05).

To assess interaction and time effects, calls made vs. no calls (no calls made = 0, made a call = 1) was used as the dependent variable in a repeated measure analysis of variance. "Calls made" was first analyzed by a 2x2x2 (condition by sex by time) and then a 4x2x2 (prior abstinence by condition by time) analysis of variance with repeated measures. Tables 50 to 53 summarize the data.

Table 50 shows that "calls made" was significantly different for treatment conditions, time and treatment by time interaction. Also, a marginal sex by time interaction was noted. Table 51 shows that the IPP treatment was more successful in getting subjects to make support phone calls. Both treatments dropped in calls made over time as shown in Table 51. The treatment by time interaction appears to be due to the decrease in calls made following treatment termination, as shown in the mean of means for both time periods.

Table 52 presents the analysis of variance with level of prior abstinence included. The 4x2x2 analysis of variance with repeated measures showed a similar treatment, time and treatment by time effects as noted above. No main or interaction effects for prior abstinence were found.

Table 50: Repeated Measures Analysis of Variance of Support Phone Calls for Treatment Conditions^a

Source	DF	MS	F	Prob.
Treatment	1	2.88	17.323	.0005
Sex	1	.02	.115	.736
Treatment by Sex	1	.17	.994	.323
Subjects	62	.17		
Time	1	2.89	31.847	.0005
Treatment by Time	1	.97	10.606	.002
Sex by Time	1	.31	3.457	.068
Treatment by Sex by Time	1	.07	.795	.376
Subjects by Time	62	.09		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 51: Two Means of Support Phone Calls for Treatment Conditions

Treatment Condition	Time 2	Time 4	Mean of Means	
Innovative	.63	.15	.39	
American Lung	.15	.02	.09	
Mean of Means	.39	.09	.24	

Note. No = 0, Yes = 1

Table 52: Repeated Measures Analysis of Variance of Support Phone Calls for Length of Prior Abstinence^a

Source	DF	MS	F	Prob.
Prior Abstinence	3	.06	.385	.764
Treatment	1	1.98	13.140	.001
Prior Abstinence by Treatment	3	.34	2.226	.095
Subjects	58	.15		
Time	1	2.44	24.905	.0005
Prior Abstinence by Time	3	.04	.377	.770
Treatment by Time	1	.93	9.515	.003
Prior Abstinence by Treatment by Time	3	.05	.529	.664
Subjects by Time	58	.10		

aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 53: Two Means of Support Phone Calls for Level of Prior Abstinence

Prior Treatment	Time 2	Time 4	Mean of Means
Never Quit	.37	.00	.19
Quit Up to Four Weeks	.46	.12	.29
Quit One to Twelve Months	.35	.04	.20
Quit One Year Plus	.30	.10	.20
Mean of Means	.37	.06	.22

Note. No = 0, Yes = 1

Autonomous Meetings

At the end of the program, 4 of 27 IPP subjects (12.9%) and 6 of 29 ALA subjects (17.1%) had met outside of the program for social support. These differences at the end of program were not significant, χ^2 (1) = .02, p > .05. At the three months follow-up, 2 of 28 IPP subjects (6.7%) and 0 of 35 ALA subjects (0%) had met since the end of the program. Again, no significant differences were found χ^2 (1) = .69, p > .05.

To assess sex, prior abstinence, time and interaction effects, autonomous meetings (no meetings = 0, any meetings = 1) was used as the dependent variable in a repeated measures analysis of variance. Autonomous meetings was analyzed by both a 2x2x2 (treatment by sex by time) and 4x2x2 (prior abstinence by treatment by time) analysis of variance design. Tables 54 to 57 summarize the data.

Table 54 shows that time produced a significant effect. Both treatments reduced in autonomous meetings over time, as shown in Table 55.

Table 56 presents the analysis of variance with prior abstinence included. Again, an effect for time was found. All levels of prior abstinence reduced in autonomous meetings over time.

Overall, little evidence was found to support the hypothesis that the IPP treatment resulted in a more cohesive group than the ALA treatment.

Analysis of Hypothesis Six

Hypothesis Six stated that there would be no significant differences between response to treatment by sex. All 18 treatment scales were used

Table 54: Repeated Measures Analysis of Variance of Autonomous Meetings for Treatment Conditions

Source	DF	MS	<u> </u>	Prob
Treatment	1	.01	.133	.717
Sex	1	.07	.942	.336
Treatment by Sex	1	.02	.283	.597
Subjects	62	.08		
Time	1	.43	5.090	.028
Treatment by Time	1	.04	.434	.512
Sex by Time	1	.001	.006	.938
Treatment by Sex by Time	1	.19	2.307	.134
Subjects by Time	62	.08		

^aNumber of subjects: Innovative = 31, American Lung = 35

Table 55: Two Means of Autonomous Meetings for Treatment Conditions

Treatment Condition	Time 2	Time 4	Mean of Means
Innovative	.14	.05	.09
American Lung	.15	.00	.08
Control			
Mean of Means	.14	.03	.09

Note. No meetings = 0, Any meetings = 1

Table 56: Repeated Measures Analysis of Variance of Autonomous Meetings for Level of Prior Abstinence

Source	DF	MS	F	Prob.
Prior Abstinence	3	.02	.196	.899
Treatment	1	.04	.551	.461
Prior Abstinence by Treatment	3	.10	1.289	.287
Subjects	58	.08		
Time	1	.43	5.311	.025
Prior Abstinence by Time	3	.03	.419	.740
Treatment by Time	1	.002	.031	.862
Prior Abstinence by Treatment by Time	3	.20	2.530	.066
Subjects by Time	58	.08		

^aNumber of subjects: Never quit = 12, Quit up to four weeks = 26, Quit one to twelve months = 20, Quit one year plus = 8

Table 57: Two Means of Autonomous Meetings for Level of Prior Abstinence

Prior Abstinence	Time 2	Time 4	Mean of Means
Never Quit	.17	.00	.09
Quit Up to Four Weeks	.08	.04	.06
Quit One to Twelve Months	.17	.06	.11
Quit One Year Plus	.20	.00	.10
Mean of Means	.15	.03	.09

Note. No meetings = 0, Any meetings = 1

in the analysis of this hypothesis. The significant sex differences found for these scales are discussed in the analysis of each of the comparative hypotheses. The results of these analyses are summarized in Table 58.

Table 58 indicates that a total of three (3) sex differences were found. According to Sakoda et al. (1954), the probability of obtaining these significant sex differences at the .05 level of significance is greater than .05. Thus, it is probable that these significant differences were chance differences. Therefore, Hypothesis Six, which stated that there would be no significant differences in response to treatment by sex, is supported by these data.

<u>Verification of Self Reported Smoking Behavior</u>

The Pearson Product Moment correlation between CO concentrations and smoking behavior appears in Table 59. A multiple regression equation using (a) subject's reported frequency that day and (b) reported time since smoking as independent variables to predict CO level at end of program produced a multiple R of .88 (p < .001). An analysis of variance comparing abstinent and smoking subjects' CO levels was significant on Quit Night (F[1,61] = 88.31, p < .001) and again at the end of program (F[1,50] = 81.05, p < .001). Mean CO levels for smokers (n = 19) were 17.32 ppm on Quit Night and 20.75 ppm (n = 16) at end of program. For nonsmokers, CO levels were 3.41 ppm (n = 44) on Quit Night and 3.14 ppm (n = 36) at end of program. It appears that the measurement of CO concentrations in expired air is a fairly meaningful verification of abstinence.

Table 58: Results of Significance Testing for Sex Differences

		-
	Number of Significant	•
	Differences Found ^a	
Scales	Sex Interactions	

Outcome

Cigarettes Per Day Percent of Abstinence Relapse

Self-Efficacy

Confidence 1-RM

Health Locus of Control

Internal Powerful Others Chance

Program Evaluation

Satisfaction/Group Leader Group Leader Was Large Group Atmosphere Program Evaluation Satisfaction/Program Recommend Program Attendance

1-CxS

Group Cohesion

Small Group Atmosphere Autonomous Meetings Telephone Calls 1-CxSxP

aS = Sex; T = Time; RM = Repeated Measures; C = Condition,

P = Prior Abstinence

Table 59: Correlations Between CO Concentrations and Smoking Behaviors

	Quit Night (n = 63)	Last Session (n = 52)
Smoking	= .77*	= .79*
No. cigarettes that day	= .82*	= .83*
Time since last cigarette	=61*	=81*

^{*}p < .01

Associative Analysis

The findings reported in the preceeding discussion were sufficient as far as assessing the efficacy of the smoking cessation models but they provide little insight into what produced these results. To complement the principal findings, a correlational analysis, using Tryon and Bailey's (1970) method, was done to determine what may have contributed to the success or failure seen in the social change outcome measures.

Throughout the course of the experiment, well over 150 variables were measured. Depending on the particular variable, measurements were assessed from one to four times. Reducing these variables to a more manageable set was a rational-empirical process which was accomplished in several stages. First, all variables were stratified into rational dimensions based on item content. Second, the major outcomes and the variables which were found to be in association with those outcomes were assembled. Third, these variables along with samples from each rationally created dimension were submitted to an empirical V-analysis (Tryon and Bailey, 1970). Defining

variables (most Collinear set), along with another sample of the data were again submitted to a V-analysis. This process was repeated until all measures had an opportunity to demonstrate their empirical relationship to the outcomes and other domains which were formed. A measure was deleted from further consideration if its loading was less than .30 or if its communality was below .20. These limits eliminated the most trivial measures while ensuring that those most significant would be retained for further analysis. The results of this initial data reduction process resulted in a final set of 77 variables for the entire sample of 146 subjects.

Analyses of these data was continued; using Tryon's method, the final set of 77 variables were submitted to both an empirical V-analysis and pre-set key cluster analysis. Finally, a typological analysis based on the defining variables from the pre-set analysis was performed to establish response types to the pre-set clusters.

Results of Correlational Analyses

The pre-set analysis identified seven empirical dimensions that characteristized the data set. These dimensions were:

- I. Smoking Behavior
- II. Powerful Other Health Control
- III. Age
- IV. Social Support
- V. Internal Health Control
- VI. Program Satisfaction
- VII. Chance Health Control

The seven pre-set dimensions from the present analysis are presented in Table 60. The correlations between the oblique cluster domains are presented in Table 61. The seven factorial dimensions are described below.

Smoking Behavior (I)

This cluster was termed smoking behavior because its major definers were made up of the social change outcomes. The underlying dimension reflected persons who are cigarette smokers who have little confidence in and low expectations of their ability to quit or maintain abstinence. This cluster had a high reliability of .95 and domain validity (accuracy of factor estimate) of .98; and correlated -.26 with Cluster 4 and -.42 with Cluster 6. This combination seemed to characterize smokers who received little social support and thus experienced failure, which resulted in a negative impression of their treatment program. The moderate relationship with Cluster 4 (Social Support) seemed to indicate that smokers' social support networks are important in abstinence behavior.

Powerful Others Health Control (II)

This domain was termed "powerful other health control" because its definers were derived all from the Powerful Others Health Locus of Control scales and administered Time 1 through Time 4. Its highest relationship was with Cluster 7, Chance Health Control (.24). The reliability for this domain was .92 with a domain validity of .96. This domain was relatively independent of the Outcome Domain (-.04).

Table 60: The Seven Pre-set Clusters

Cluster	······································	Loading
Cluster	1: Smoking Behavior	reliability = .95
1.	Higher percentage of baseline smoking, T3 (D)	.92
2.	Higher percentage of baseline smoking, T4 (D)	.91
3.	Smoking more cigarettes, T3 (D)	.88
4.	Tendency to be smoking, T3 (D)	.85
5.	Smoking more cigarettes, T4 (D)	.84
6.	Higher percentage of baseline smoking, T2 (D)	.84
7.	Tendency to be smoking, T2 (D)	.84
8.	Smoking more cigarettes, T2 (D)	.82
9.	Lower Confidence Score, T3	.82
10.	Tendency to feel unable to control urges, T2	.81
11.	Tendency to have made little effort towards staying quit	.79
12.	Tendency to feel program was not helpful	.79
13.	Tendency to feel unable to control urges, T4	.78
14.	Tendency to have decided to cut down on daily cigarette intake, T3	.76
15.	Tendency to be smoking, T4 (D)	.75
16.	Lower Confidence Score, T4	.75
17.	Lower Confidence Score, T2	.73
18.	Tendency to have made little effort towards quitting	.73

Table 60: Cont.

Cluster		Loading
19.	Higher carbon monoxide level, T2	.72
20.	Tendency to have decided to cut down on daily cigarette intake, T2	.72
21.	Expects to be smoking in two months, T2	.66
22.	Tendency to feel program was not helpful in getting them to quit	.64
23.	Tendency to have relapsed prior to end of treatment	.61
24.	Higher carbon monoxide level, quit night	.59
25.	Expects to be smoking in one month, T2	.55
26.	Tendency to have attended fewer treatment sessions	.53
27.	Tendency to have relapsed soon after treatment ended	.46
28.	Experienced difficulty while quitting	.46
29.	Tendency to feel it was not easier to quit with the aid of their program	.42
30.	Tendency to have not made a commitment to quit	.35
Cluster 2	: Powerful Others Health Control rel	iability = .92
1.	Higher Powerful Others Locus of Control, T2 (D)	.89
2.	Higher Powerful Others Locus of Control, T3 (D)	.89
3.	Higher Powerful Others Locus of Control, T4 (D)	.86
4.	Higher Powerful Others Locus of Control, Tl (D)	.77

Table 60: Cont.

Cluster	Loading
Cluster 3: Age	reliability = .85
1. Older in age (D)	.94
2. Smoked more prior years (D)	.90
3. Tendency to have more children (D)	.51
Cluster 4: Social Support	reliability = .87
 Higher Social Support Score, T3 (D) 	.96
2. Higher Social Support Score, T4 (D)	.87
3. Higher Social Support Score, T2 (D)	.76
4. Small Group Atmosphere	.47
5. Tendency to have quit during the program	.45
6. Higher Expected Social Support Score, Tl	.45
Cluster 5: Internal Health Control	reliability = .88
 Higher Internal Locus of Control, Tl (D) 	.88
2. Higher Internal Locus of Control, T4 (D)	.80
3. Higher Internal Locus of Control, T3 (D)	.78
4. Higher Internal Locus of Control, T2 (D)	.64
Cluster 6: Program Satisfaction	reliability = .87
1. Tendency to be satisfied with program (D)	.85
Tendency to say they would recommend progr (D)	ram .78
Higher Satisfaction with Group Leader Score (D)	.77
Tendency to be satisfied with group leader (D)	.71
5. Higher Large Group Atmosphere Score (D)	.65

Table 60: Cont.

Cluster	Loading
Cluster 7: Chance Health Control	reliability = .86
1. Higher Chance Locus of Control, T3 (D)	.86
2. Higher Chance Locus of Control, T2 (D)	.80
3. Higher Chance Locus of Control, T4 (D)	.79
4. Higher Chance Locus of Control, Tl (D)	.63

Note. (D) denotes variables which are cluster definers.

Table 61: Correlations Between the Oblique Cluster Domains

	Cluster 1	Cluster 1 Cluster 2 Cluster 3 Cluster 4 Cluster 5	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Cluster 1		04	02	26	.02	42	90
Cluster 2	04	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	.05	.01	.01	03	.24
Cluster 3	02	.05	! ! ! !	.04	01	.05	08
Cluster 4	26	.01	.04	! ! !	.01	.30	18
Cluster 5	.02	.01	01	.01	1 1 1 1	08	39
Cluster 6	42	03	.05	.30	08	8 8 8 8	.03
Cluster 7	90	.24	08	18	39	.03	

Age (III)

This cluster contained three variables: (a) age, (b) number of years of smoking, and (c) number of children. The underlying dimension reflected on individuals who was older, who had maintained a smoking habit for more years and tended to have had more children. Its reliability was .92 and domain validity .92. It was relatively independent of Smoking Behavior (-.02) as well as with other clusters. This relationship seemed to indicate that prior experience with smoking (i.e., number of years one has smoked) is unrelated to quitting or not quitting. Therefore, long-term and short-term smokers would not be expected to differ in cessation maintenance.

Social Support (IV)

This domain reflected the participants' social support networks through treatment and maintenance. It correlated .30 with Cluster 6 (Program Satisfaction) and -.26 with Cluster 1 (Smoking Behavior). This suggested, in part, that positive social support from spouses, friends, and co-workers tends to facilitate nonsmoking behavior. Reliability for this cluster was .87 and its domain validity .95.

Internal Health Control (V)

This Cluster contained four variables, all from the Internal Health Locus of Control Scales from Time 1 through Time 4. High scores on this domain reflected persons who believed that they control their own health. Its highest relationship was with Cluster 7 (Chance Health Control) -.39, a relationship that makes good rational sense. It was found to be unrelated to Smoking Behavior

(r = .02) and showed a high relaibility (.88) and high domain validity (.94).

Program Satisfaction (VI)

This cluster was termed program satisfaction because its definers consisted of questions related to internal evaluation of subjects cessation programs. It was found to be inversely related to Smoking Behavior (r = -.42). This relationship makes good rational sense (i.e., the more one is smoking the more likely they are to be dissatisfied with their treatment). Reliability was .87 and domain validity was .93.

Chance Health Control (VII)

This cluster contained all four measurements from the Chance Health Locus of Control Scale. The domain of variables was relatively independent from the outcome domain (Cluster I), r = -.06. Reliability and validity for this domain were .86 and .93, respectively.

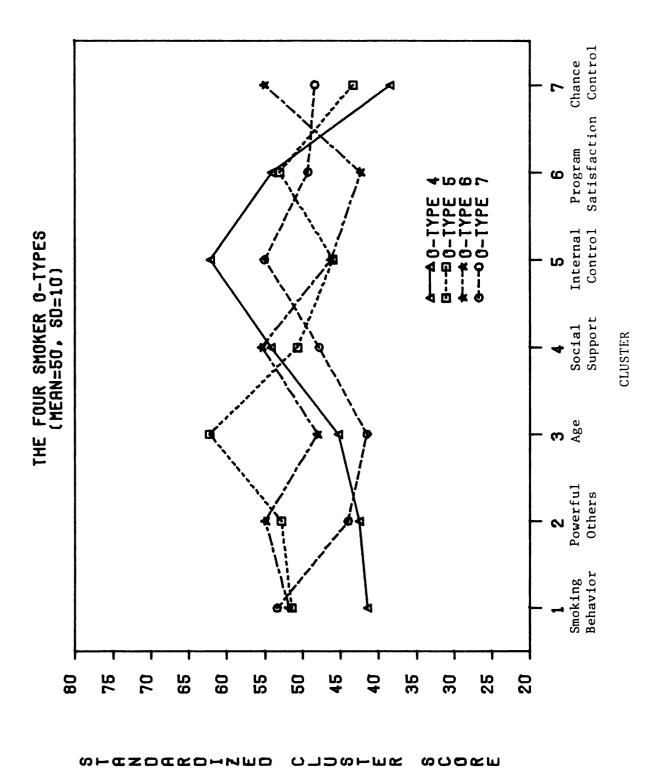
Typological Analysis

A typological analysis using Tryon and Bailey's (1970) method was also conducted. This analysis (e.g., 0-Type), provides a technique whereby objects or persons can be grouped into clusters based on scores on the defining variables from a pre-set analysis. This procedure provides a way in which typologies or "types" can be constructed based on similar patterns of characteristics. With respect to the present experiment, profiles were based on participants' scores on the definers from the seven pre-set clusters discussed in the preceeding section.

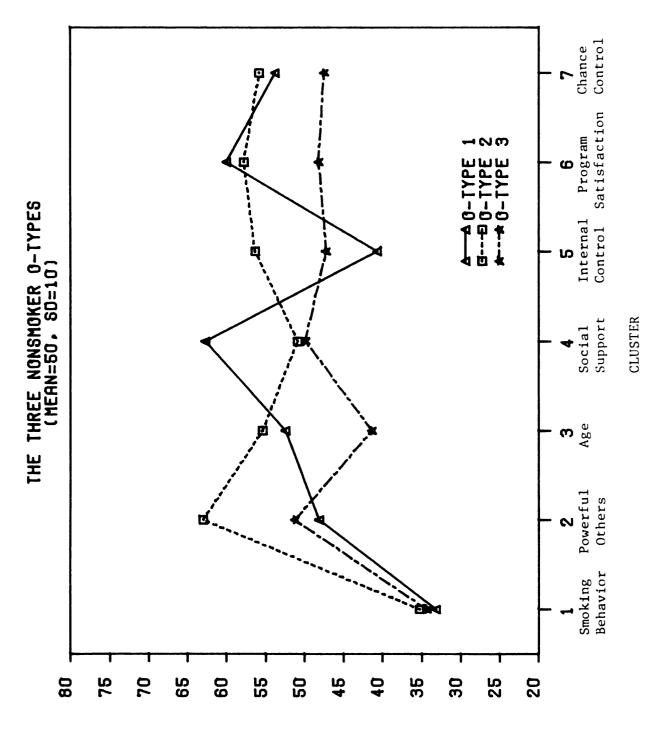
This analysis sought to consolidate the profile types into as few as possible, while still maintaining interpretable differences among the resulting types. In this study, nine 0-Types which accounted for 53 out of the 66 participants were defined. Thirteen participants lacked scores on one or more of the seven domains due to missing data and as a result could not be considered for the final profile types. Two of the final nine 0-Types were dropped from further analysis in this section since they contained fewer than five individuals, which would have made it difficult to determine underlying characteristics for the final two groupings. These final 0-Types are presented graphically for smokers in Figure 6 and nonsmokers in Figure 7. The numbers of members within each typology. along with its overall homogeneity are presented in Table 62. Means, standard deviations, and homogeneity for each O-Type within each cluster are presented in Table 63. A comparison of O-Types on selected demographic and outcome variables in presented in Table 64.

Nonsmoking O-Types

O-Type 1: Social Support Nonsmoker. This type of nonsmoker scored high on the Social Support domain (+1 s.d.), indicating that for them their social support network seems to be an important element in their cessation maintenance. Their response to the locus of control domains suggests that they have a tendency to endorse more chance health beliefs. This type consisted largely of ALA males. They also had the longest period of prior abstinence; more prior attempts at quitting than the other O-Types (see Table 64).



A graphical representation of the four smoker 0-Types. Figure 6.



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A graphical representation of the three nonsmoker 0-Types. Figure 7.

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Table 62: 0-Types Derived from the Typological Analysis

)-Type	Number of Members	Overall Homogeneity
1	5	.8049
2	6	.8120
3	5	.8726
4	7	.8861
5	6	.8755
6	8	.7561
7	9	.8066
8*	4	.8205
9*	3	.8490

^{*}Subsequent dropped from further analysis since n was less than 5.

Table 63: Means, Standard Deviations, and Homegeneity of the Nine O-Types Derived from the Analysis

0-Types	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
-	33.2032	48.1124	52.4051	62.6788	40.7773	60.0633	53.8403
	2.0236	4.6716	3.8370	2.6403	12.0222	2.7323	6.8459
	.9793	.8842	.9235	.9645	6673	.9619	.7289
8	35.2215	63.0072	55.3678	50.8883	56.3735	57.8509	55.8434
	4.6503	6.0939	4.1309	5.5581	4.9460	6.4780	8.0816
	.8853	.7929	.9107	.8313	.8691	.7618	.5890
ო	34.3498	51.2872	41.3735	49.9442	47.2430	48.2441	47.5669
	2.7282	3.5671	5.7638	5.0070	6.6904	5.7755	3.2246
	.9621	.9342	.8172	.8656	.7432	.8164	.9466
4	41.5105	42.5909	45.2765	54.2195	62.1482	54.0956	38.4384
	4.9202	4.3202	5.4255	4.5249	1.8120	6.4072	3.6497
	.8706	.9019	.8400	.8918	.9834	.7678	.9310
ιΩ	51.4789	52.8474	62.2900	50.6964	45.9697	53.0713	43.4038
	6.8550	4.1419	4.7489	4.1954	6.0415	4.2322	2.1766
	.7281	.9102	.8800	.9077	.7969	.9060	.9760
9	51.8255	54.9755	48.0283	55.4160	46.2457	42.3883	55.0951
	5.3033	7.3812	4.9740	8.5204	4.7730	5.4785	8.1879
	.8478	.6747	.8675	.5235	.8787	.8366	.5741
7	53.3955	44.0295	41.5535	47.8456	55.0430	49.3054	48.4174
	4.8545	6.9450	4.7888	7.6881	5.7242	6.3110	4.2619
	.8743	.7195	.8779	.6395	.8200	.7757	.9046
ω	35.7738	40.4076	52.0052	43.3599	42.6504	56.0771	54.4738
	3.6820	4.0788	5.1878	8.1347	2.0772	5.3208	8.5345
	.9297	.9130	.8549	.5816	.9782	.8467	.5212
о	53.7242	53.4160	54.4052	32.9271	47.6667	24.9189	52.4967
	3.9304	3.6608	7.0676	5.2436	2.2527	7.0361	5.8821
	.9195	.9306	.7075	.8515	.9743	.7106	.8087

Table 64: Comparison of O-Types on Selected Demographic and Outcome Variables

				0-Types			
Variables	<u> </u>	2	3	4	5	6	7
% Level of prior							
abstinence Q1 Q2 Q3 Q4	0 40 40 20	0 50 33 17	20 20 40 20	14 57 29 0	50 33 17 0	13 25 38 25	25 50 25 0
% IPP Condition	40	67	80	57	83	38	50
% Males	80	17	60	57	50	38	38
Mean Age	42.8	44.7	31.6	35.1	54.8	36.8	32.6
% Married	100	100	60	100	100	50	63
Mean Years Smoked	24.8	26.0	14.6	17.1	35.3	20.4	11.5
Mean Cig/Day (Pre)	27.6	26.5	25.0	30.0	30.8	31.3	30.6
Mean No. Prior Quit Attempts	4.0	1.7	1.8	1.6	2.0	3.3	2.0
Longest Abstinence (days)	248.2	137.3	157 . 4	35.6	11.7	149.5	33.6
% Attended Another Clinic	20	33	40	14	83	25	25
% Abstinent (EOP)	100	100	100	100	50	63	13
<pre>% Abstinent 1 Month F.U.</pre>	100	83	100	43	0	0	0
% Abstinent 3 month F.U.	80	67	60	14	0	0	0
<pre>% Baseline 3 month F.U.</pre>	6.6	16.7	15.2	56.7	79.8	93.3	84.0

Absent from this type were Q1 (i.e., never quit) subjects. In general, the outcome results for this type tends to support accustomed findings that older males do better with maintaining abstinence.

O-Type 2: Powerful Others Nonsmokers. This type of nonsmoker scored high on the Powerful Others domain (+1 s.d.), suggesting that being aided by an authority figure seems important for their cessation maintenance. This O-Type consisted mainly of IPP subjects and females. They were also the oldest of the three nonsmoking types. Again, absent from this O-Type were Q1 (i.e., never quit) subjects.

O-Type 3: Younger Nonsmokers. This was the youngest of all the O-Types. Their members consisted mainly of the IPP treatment and males. Forty percent of this type attended another clinic.

Smoking 0-Types

O-Type 4: Internal Control Smoker. This type of smoker scored high on the Internal Health domain (+1 s.d.). This suggests, in part, that this type of smoker is internally controlled. The members of this type had the lowest percent of baseline smoking at three month follow-up compared to all smoker O-Types. All of its members were abstinent at the end of program. However, at one month follow-up over half had relapsed. Membership in this O-Type was made up equally of both treatment conditions and sexes. Absent from its membership were Q4 (i.e., quit one year plus) subjects.

O-Type 5: Older Chronic Smoker. This smoker type scored the highest of all O-Types on the Age domain, indicating that they were older in age. Compared to the other O-Types, this type of smoker was found to be: (a) the oldest, (b) longer habit, (c) shorter prior abstinence in days, and (d) higher percentage of members who previously

attended another cessation clinic (see Table 64). Fifty percent of their members were Q1 (never quit) subjects. At the end of program, only 50% were able to achieve abstinence from the quit date. At the one month follow-up, all who were abstinent at the end of program had relapsed. Absent from its membership were Q4 (quit one year plus) subjects.

O-Type 6: High Relapse Smoker. This smoker type was labeled high relapse because at the end of treatment 63% were abstinent from the quit date, but when smoking was again assessed at one month follow-up, all had relapsed. Their highest domain score was on the Social Support cluster. This seems to indicate that social support may be important in getting this type of person to quit during treatment. However, the nature of this relationship after treatment ends is less clear. Their lowest score was on the Program Satisfaction domain. Membership consisted largely of ALA subjects and females.

O-Type 7: Young Smoker. This smoker type was labeled young smoker because of their low score on the Age domain. The mean years smoked was 11.5 which was the lowest of all O-Types. Their highest domain score was on the Internal Health scale. At end of program only 15% of its members were able to maintain their nonsmoking behavior from the quit date. At one month follow-up, all had relapsed.

CHAPTER FOUR

DISCUSSION

In this chapter, answers to the six hypotheses which were posed by this study will be examined, and the implications of these answers will be explored. Second, conclusions concerning attrition will be investigated. Third, the correlational analysis will be analyzed. Fourth, a critique of the study will be presented. Finally, future directions of research will be outlined.

The first concern of this chapter is the six major hypotheses. These hypotheses focused on several aspects of smoking behavior and response to treatment. These areas were: (a) treatment effectiveness, (b) self-efficacy, (c) personality factors, (d) participant satisfaction, (e) group cohesiveness, and (f) sex differences in response to treatment. Each of these areas will be discussed in the following section.

The first hypothesis of the study concerned treatment effectiveness. It was hypothesized that the IPP condition would be more effective than both the ALA and control conditions. In addition, no differences between level of prior abstinence were expected.

The results of the present investigation revealed incremental improvement in treatment outcome as a result of the Innovative Package Program (IPP) when compared with the American Lung Association

program (ALA) and a traditional comparative group. Three months after treatment, the IPP treatment had produced a percentage of baseline smoking of 44.4 percent and an abstinence rate of 32.3 percent. The ALA treatment and comparative group produced percentages of baseline smoking of 62.1 percent and 88.0 percent; abstinence rates of 22.9 percent and 8.5 percent, respectively, at three months follow-up. Cigarettes-per-day smoking rates followed a similar pattern at three months, with the IPP treatment (mean = 12.5) lower than the ALA treatment (mean = 18.9) and both treatment conditions lower than the comparative group (mean = 27.6).

The overall magnitude of change observed for both treatments compares favorably with the results from smoking cessation clinics in general. McFall and Hammer's (1971) mean end-of-treatment abstinence rates of 26 percent and 13 percent at one and six months follow-up, derived for a representative sample of studies, is a commonly used benchmark. Both treatments surpassed these benchmarks (see Table 23), with the IPP treatment demonstrating greater efficacy. Danaher (1980) has suggested a 30 percent abstinence level as a benchmark against which the incremental efficacy of cessation program should be measured. In this study, only the IPP treatment surpassed this figure (see Table 23). Alternatively, considering maintenance, Hunt and Bespalec's (1974) review reports that approximately 75 percent of initially successful quitters ultimately relapsed. In this study, 50 percent of ALA quitters and 61.5 percent of IPP quitters subsequently relapsed. Again, both treatments compared favorably in maintaining abstinence with smoking cessation clinics in general.

Although the results of this study compare favorably with prior cessation clinic efforts, the results are lower than those obtained in other recent multiple technique investigations (Best, 1975; Delahunt and Curran, 1976; Lando, 1977). The major differences between this study and the previous investigations, which may have affected overall average outcome, were the stringent criteria used in determining success, the sample size and the independent verification of self-report information.

Success in this study was defined as continuous abstinence from the assigned "quit date." In other studies, success has been defined as abstinence for some specified period of time (e.g., one day, two days, etc.) at each assessment period, or some established level of reduction in percentage of baseline smoking (e.g., 80 percent, 90 percent). It was reasoned from the start of this experiment that if a treatment was effective it should heighten subjects' motivation enough to quit entirely on an assigned date, and that the maintenance component should enable subjects to continue to abstain through the remainder of treatment contact and posttreatment follow-ups.

The second difference, sample size, has been relatively small in most previous studies (i.e., 10 or 15 subjects per condition), which tends to foster nonsignificant results because of large variations in posttreatment smoking rates. In this study over 30 subjects were included in each condition, minimizing within-group variance.

Third, almost all other programs, clinics or research studies have relied primarily on univerified self-report data for their critical dependent measure, which is inherently subject to false

reporting. To help assure the accuracy of subjects' self-report data, unannounced tests of subjects' carbon monoxide levels were done from breath samples during treatment. Although CO measurement has a short half-life (i.e., two to six hours), is affected by environmental sources, and shows high diurhal variability, informal discussions with subjects indicated that it did deter false self-reporting. Correlations between CO levels and self-reports of smoking behavior were moderately high, supporting its value as an independent measure for corroborating self-report data. In the estimation of the researcher, these differences allowed this study to more accurately assess program effects and cessation behavior, than the less reliable data some prior studies have reported.

Outcome results for the IPP treatment showed the greatest effect at the end of treatment (e.g., 83.0% abstinence versus 45.7% for ALA); relapse rates at three months posttreatment, however, were higher than the ALA treatment. A possible explanation is that when smokers comply because of coercion (e.g., surveillance by support group), or the power of a money reward or loss, individuals may partially attribute their compliance to the external incentives and take less personal responsibility for their own health. By contrast, the ALA treatment may have produced greater internalization of the group leader's recommendations.

The IPP treatment might be improved by gradually altering the termination of treatment controls over time; and extending treatment sessions. The shock of terminating all controls at once, after only a short period with controls, seems to invite failure. Follow-up

discussions with participants in this condition supported this observation.

The moderately high relapse rates found for both treatments is not limited to this study or smoking cessation research overall. In fact, this phenomenon has been found in the treatment of obesity, alcohol and drug abuse (Stone et al. 1980). In addition, other areas of health care (e.g., psychiatric rehabilitation and psychotherapy) have noted a similar loss in treatment gains once program contact has ended (Luborsky, Chandler, Auerbach, Cohen, and Bachrach, 1971; Stein and Test, 1976).

The ALA condition in this study replicated ALA's (1981) nation-wide study using the same formal treatment and time in treatment. ALA (1981) showed a continuous abstinence rate, at one month follow-up, of 35% and a three month rate of 25%. In this study, the ALA treatment produced one and three months posttreatment abstinence rates of 34.4% and 22.9%, respectively, indicating that results found in this study were a valid indicator of its efficacy.

The major difference from the nationwide (1981) study was in the number of group leaders. This study used one group leader, while ALA's nationwide study used several small group leaders to facilitate the treatment. Although not evaluated in this study, it would appear that success may not be affected by the number of facilitators used to help carry out ALA treatment techniques.

Future research with the ALA model will need to develop more potent methods, so that smokers attain abstinence and a sense of success rapidly enough to capitalize on the initial motivation to quit. Posttreatment discussions with members of this treatment

condition indicated that, without any immediate external inducements to quit on the specified quit date, they required more self-control to quit and thereby increased their chances of failure. Contingency contracting seems to be one specific technique which can be used effectively to aid the smoker through the initial period of nonsmoking.

The decrease in smoking and abstinence rates found for the comparative group compare favorable with the 5-15% abstinence rate generally found in similar comparative groups (Powell and McCann, 1981). It seems likely that motivated volunteers who decide to participate in a smoking cessation treatment may, on their own, be testing various techniques for ridding themselves of the habit.

One of the unexpected results of the present study was the difference in outcome attributable to level of prior abstinence. It was hypothesized that no difference would be found. However, subjects who had had longer periods of prior abstinence fared better with respect to reducing daily cigarette consumption, percentage of baseline smoking rate; and remaining abstinent. This difference was most noticeable between those who had never quit (9.5% abstinent) and those with prior abstinence of one year or more (50% abstinent) at three months posttreatment. This indicates that the more experience smokers have had with quitting, the more likely they are to achieve abstinence, with treatment, on this attempt. A similar relationship with prior abstinence was found on the confidence scale. The longer the period of prior abstinence, the higher the subject's level of self-efficacy.

A possible reason for these results is that those who have previously abstained for long periods have a better realization of the requirements of abstinence, as well as more personal techniques to cope with urges during stressful experience of quitting. They know what works for them, have had more experience practicing abstinence, and are therefore more confident of their present ability, based on past performance. Smokers who have never quit before have nothing to measure themselves against; their knowledge and expectation may be shaped only by the experiences of others (i.e., external sources).

Smokers' prior experiences with nonsmoking behavior appear to be an important variable to control for in future studies on smoking cessation. Precedent research studies have virtually ignored this variable, only describing its effects in post-hoc correlations (Flaxman, 1978; Keutzer, 1968; Ockene et al., 1982). This is the only study in which this variable has been built into the research design.

Presumably, if smokers with long periods of prior abstinence (or no experience) are, by chance, disportionately included within a treatment condition, results may tend to offer skewed outcomes, possibly misleading the experimenter into falsely advocating or rejecting a treatment model. In future research it will be necessary to replicate and more thoroughly evaluate this potentially predictive variable of treatment outcome.

The second hypothesis of this study stated that the IPP treatment would have a higher level of self-efficacy than the ALA treatment.

The research has shown that subjects in both treatments, at three

months follow-up, had higher levels of self-efficacy than before treatment began. Although these results were nonsignificant between treatments, the IPP condition was higher at all assessment points. Both conditions, as a result of treatment, elevated participants' ability to refrain from cigarette smoking.

The major impact of this finding is that merely participating in a cessation clinic or study can assist in developing greater confidence of personal control over smoking habits. Although this change in personal beliefs does not necessarily indicate behavioral change, results of correlational analysis did show it to be related to smoking behavior. Implications for future research would encourage more individualized treatment. Facilitators could begin to assist individuals to develop coping skills for the situations where individuals feel they are lacking personal control.

The third hypothesis tested in this study stated that there would be no differences due to personality. The <u>Multidimensional Health</u>

<u>Locus of Control</u> (MHLC) and <u>Why Do You Smoke</u>? tests were measures used to evaluate this hypothesis and their results supported it.

Given the theoretical descriptions of the three scales of the MHLC, it could be hypothesized that persons with strong beliefs in external control by powerful others might be expected to comply with treatment requirements, especially if they had high trust in their group leader. Given the same situation, high scorers on the chance scale might abandon their compliance to treatment and drop out of the program or simply continue to smoke. Persons with strong beliefs in internal health locus of control might adhere to treatment

requirements, attain abstinence and then test their personal control by smoking a cigarette or two before attempting to abstain again.

Therefore, in a group cessation treatment conducted by an experienced group leader, those with strong beliefs in external control by powerful others should have a better outcome. Those with strong beliefs in internal controls would be expected to have a higher relapse rate and those trusting to chance would be associated with more smoking behavior.

Why people smoke may influence response to treatment. The Why Do You Smoke? test was used to assess rationale for smoking. Leventhal and Avis (1976) found that increasing a smoker's awareness of smoking resulted in better outcome results with habitual smokers (i.e., those scoring high on crutch, craving and habit scales) than with pleasure smokers (i.e., high scores on stimulation, pleasure relaxation, and handling scales). Assuming that participation in a stop-smoking treatment does heighten awareness, outcome results should be better for habitual smokers than pleasure smokers. For pleasure smokers, continued contact with the cessation program (i.e., follow-up letters, phone calls, and personal appearance data collection) may increase awareness of the missed pleasures of smoking.

The results from this study showed no statistically significant differences due to personality characteristics. The correlational analysis further showed that these personality measures were independent of smoking behavior. A possible explanation is that all persons, regardless of their personality types or beliefs, perceive and evaluate their reasons for stopping smoking in their own idiosyncratic

ways and convert them into attempts which may or may not be successful. The ability to maintain abstinence at this point, seems to cut across personality type considerations.

Hypothesis Four stated that the IPP treatment would be viewed and assessed by participants as more effective than the ALA treatment. Eight aspects of the subjects' evaluations of their treatment were examined. This study showed no overall differences between treatment conditions. Thus, both treatment conditions were perceived by their respective participants as being effective.

One possible explanation for these results may have been social desirability. Subjects knew they were taking part in a research study and may have responded positively toward their treatment programs simply to make the experimenter "look good." On the other hand, perhaps subjects did feel satisfied with their treatment programs. Another explanation may be that those who found their program to be ineffective blamed themselves for the "failures" rather than the treatment. Several posttreatment written comments tended to support this explanation. Comments from those still smoking addressed a similar theme that, "the program didn't fail, I did." Future research will be needed to further investigate possible relationships between social desirability and self-reports of treatment satisfaction.

Hypothesis Five related to group cohesiveness. It was hypothesized that the IPP treatment would result in a higher level of cohesiveness than the ALA treatment. This was reasoned because the IPP subjects met in smaller support subgroups, and because the mildly competitive atmosphere generated by possible monetary gain or loss would likely

lead to closer interpersonal relationships. Although the IPP subjects made more support calls and tended to score higher on the Small Group Atmosphere scale, results showed no overall differences between treatments.

Two alternative explanations may account for this nonsignificant result. First, treatment contact was limited to seven meetings (of l½ hours each) over six weeks and more time may be necessary for cohesiveness to develop. Second, people who attend community smoking cessation clinics, knowing their time limits, tend to seek only group adhesion. That is, volunteers who are virtual strangers come together for treatment with a unity of purpose, but have no desire to put their unity into common action maintained over time. Posttreatment interviews tended to support this explanation; just being part of a group through the same cessation process and knowing they were not the only ones experiencing difficulties, was support enough for many.

Future research may be more successful in developing and maintaining cohesiveness by experimenting with models within established social systems where people have already developed a certain degree of cohesion (e.g., worksites, churches, clubs). Also, extending posttreatment meetings over time or developing an ongoing self-help support group might serve to sustain power of group cohesiveness.

The sixth hypothesis for this study stated that no sex differences would be found with respect to treatment response. Unlike some other cessation studies (Eisinger, 1973; Kanzler et al., 1976; Marston and McFall, 1971), the present study appears to have used two smoking cessation models that show no sex differences, programs in which women are as successful as men.

Although no overall differences by sex were found, several differences on pretreatment measures merit attention. Women came to treatment with higher expectations of the male group leader and the treatment process; scored lower in self-efficacy before, during and after treatment; and smoked for different reasons than men.

Interactions between sex and the subjects' expectations of the male group leader and their treatment remain undefined by this study. Apparently, subjects' expectations of the treatment program or the group leader do not affect their response to treatment. At the end of treatment, both sexes responded positively to their leader and treatment. It is possible that treatment effects were minimized in men by the presence of the male group leader. Glasgow (1978) found that female group leaders were effective with either sex; male group leaders were more effective with males than with female participants.

Women consistently scored lower in self-efficacy than men. This could be a result of the differential socialization of males and females with respect to independence and achievement (Block, 1976), which may give men more confidence in their ability to affect important outcomes, such as cessation of smoking, and leave women more inclined to attribute outcomes to external factors.

Further research will be needed to explore any differential treatment effects due to the sex of the group leader. In addition, research is needed to develop and implement innovative techniques especially aimed at women smokers. For example, Flaxman (1978) found that additional time in treatment prior to quitting was beneficial for women. Perhaps more time should be used to strengthen internal efficacy beliefs in women.

The second concern of this chapter is subject attrition. The following section will discuss this aspect of program participation.

Subject attrition has been one of the biggest methodological problems in smoking cessation research (McFall, 1978) and seriously undercuts the ability to generalize outcome results to other smokers and settings. Rates of attrition have been found to reach as high as 50% of those who initially sought treatment (Leventhal and Cleary, 1980). Researchers have made an effort to alleviate this problem by requiring subjects to post a refundable "data deposit," to insure that they will be around at the end of treatment (Best et al., 1978; Foxx and Axelroth, 1983; Lando, 1978). Despite the use of this method, attrition rates have continued to be high, ranging from 21% to 44% (see Best et al., 1977; Elliott and Denney, 1978; Foxx and Brown, 1978; Lando, 1978).

Despite a similar attendance contingency in this study, subject attrition at posttreatment was moderately high (e.g., 33%). Although this result was within the commonly accepted range for smoking cessation studies in general, a comparison between the "attrition group" and the "participant group" was undertaken to ascertain any meaningful differences between them. It was felt that analysis would be more meaningful if this group were divided into two subgroups based on their differential responses. On subgroup, the "no-shows," were persons who volunteered for the study, but failed to attend any of the treatment sessions. The second subgroup, the "drop outs," were persons who volunteered and came to treatment, but discontinued before completing four treatment meetings. In spite of the serious implications for smoking cessation research, no other study has sought

to assess meaningful differences between those volunteers who dropped out and those who did not. It was hoped that, by comparing them, predictor variables might emerge to aid future researchers to identify and encourage these people to follow up their initial interest. The first subgroup (e.g., no-shows) had lower social class, occupation and education ratings. They also tended to score lower on the Motivation to Quit scale.

Research has shown that lower socioeconomic groups have a higher prevalence of smokers and a lower success rate among those who attempt to quit. It is possible that social support networks are not available to these individuals to provide verbal support and reinforcement for abstinence. They could also have received negative reinforcement from their milieu during the week between the orientation meeting and their first treatment session, which influenced their decision not to accept treatment.

A tendency to score low on the motivation rating scale indicated that they might have been only modestly inclined to change in the first place. They may value something at a perceived low level of personal time investment, but fail to follow through. It is also possible that "no-shows" were just not motivated enough to follow through at the time when treatment was offered. They may not have been ready for treatment. Best (1975) has argued from his data that treatment must occur when smokers first become well motivated for self-change.

The second subgroup of attrition were drop outs. Results from pretest analysis, along with measures administered at the end of session one, showed "drop outs" to be those who had fewer smokers

in their home environments and who were <u>not</u> externally controlled in their health beliefs (e.g., low chance score). In addition, they tended to have smoked for more years prior to treatment, they felt less optimistic about the efficacy of their program and were less confident concerning their expectation to be abstinent at treatment termination. No-shows were more dependent on smoking and were more apt to have lower expectations, both of themselves and their program. The two significant differences between "drop outs" and "participants" (i.e., "smokers in the home" and "chance" scale) may suggest persons who live alone (i.e., single, divorced, widowed), feel little need for others and, as a result, drop out of treatment thinking that they can quit by themselves without outside help. It may also be that "drop outs" made a serious quit attempt during their treatment contact, realized that they could not maintain abstinence and withdrew, to avert probable failure.

If any of these post-hoc explanations are valid, future research will need to devise methods to further assess their effects. Although meaningful generalizations are limited, the results indicate a need for future research to consider the implications of attrition and nonattrition in evaluating cessation programs. It is apparent that cessation clinics are failing to adequately treat a considerable percentage of potential nonsmokers. More work is needed to develop effective techniques to accommodate the unique needs of both "no-shows" and "drop outs."

The next section will discuss the results from the associative analysis. Both the cluster analysis and O-Type analysis will be examined.

Using Tryon's cluster analytic method of factor analysis, seven domains were described which characterized the data set. Results showed no evidence that related age, sex, years smoked, pretreatment smoking rate, pretreatment motivation, weight gain or previous quit attempts, to giving up smoking. Although others (Best et al., 1976; Eisinger, 1972; Marston and McFall, 1971; Pomerleau, Adkins, and Pertschuk, 1977) have found these relationships.

The Smoking Behavior domain (e.g., Cluster I) contained 30 variables critical to maintaining the smoking habit. This domain of variables described smoking behavior (i.e., cigarettes per day, percentage of baseline rate) both during and after treatment; general and specific self-efficacy expectations assessed after treatment began; and treatment reactions. Persons who were more likely to be smoking were in fact smoking during or after treatment, low in self-efficacy ratings, had stronger expectations they would be smoking in the future, attended fewer treatment meetings, and experienced more difficulty while quitting. The confidence scale, assessed at the end of treatment and again during both follow-ups, had cluster loadings of .7264 to .8208 on this domain, indicating that efficacy expectations may be useful in multivariate prediction of treatment outcome. The findings from this cluster suggest that subject under consideration for treatment may provide their own best predictions of success.

The Smoking Behavior cluster was further found to be inversely related to Cluster IV (Social Support) and Cluster 6 (Program Satisfaction). In terms of smoking cessation, this suggests that receiving continued positive support from one's social support network (e.g., family, friends, co-workers, treatment group) is an important

factor in abstaining and maintaining abstinence. The relationship with Cluster 6 makes rational sense; if individuals are able to obtain their goals set prior to treatment (e.g., quitting or reduction) they will be more satisfied with the treatment process. Smoking behavior, however, was independent of age (Cluster 3), and the Health Locus of Control domains.

The O-Analysis of the 146 subjects who volunteered for the study generated seven distinct typologies. Although interpretation seems to be limited by the small number per O-Type, it did offer insightful information. The results indicated that these O-Types could be rationally grouped into two general classes, based on their scorings on the Smoking Behavior cluster.

First, three O-Types scored low on Cluster I, indicating that they were nonsmokers. For O-Type 1, social support appeared to be an important factor in attaining and maintaining abstinence. Background information indicated that this type of nonsmoker had made more efforts in the past to attain nonsmoking status, and had had longer periods of prior abstinence than other O-Types. O-Type 2 scored higher on the Powerful Others domain, which would suggest that the presence of an authority figure (i.e., group leader) is an important factor in their abstinence. The last nonsmoking profile was O-Type 3. These nonsmokers were mainly younger persons. It may be that their brief experience with smoking behavior was an asset. These results indicated that varied factors may be interacting within these three O-Types which enable them to reach nonsmoking status.

Second, four 0-Types scored high on Cluster I indicating that they were smokers. 0-Type 4 scored highest on the Internal domain, indicating that they were internally controlled in their health beliefs. Their reaction treatment and abstinence behavior was similar to the general theory for internal persons proposed by Wallston et al., (1978). All members in O-Type 4 were abstinent at the end of treatment. However, by one month posttreatment over 50% had relapsed. It may be that the most critical antecedent of relapse was their need to test their abstinence, at which they were unsuccessful. Future treatments may need to incorporate specific coping skill strategies aimed at averting their testing behavior. For 0-Type 5, long experience with smoking may be a factor negating continued change. Of all the O-Types, this type of smoker appeared to be the most addicted. It may be that the suppression of smoking in this person type leads to cravings or intense urges produced by a combination of physiological and psychological factors which are more potent than the treatments were designed to overcome. The 0-Type 5 smoker may do better in a more intense treatment conducted over an extended time period. For the 0-Type 6 smoker, social support appear to be an important factor for them to initially achieve abstinence (e.g., 63%). However, once treatment ended and group support (and possible support in general) ceased, relapse followed (e.g., 100% relapsed). For this type of smoker, continued group support after treatment (i.e., booster meetings, autonomous self-help groups) might extend treatment gains. The final O-Type, compared with the other six, showed the fewest benefits from treatment. Only 13% of its members were able to maintain abstinence at the end of treatment. It is possible that these smokers simply do not accept

that continued smoking puts them at any risk, an assumption supported by the presence of other smokers in treatment who are much older and apparently in good health.

The typological analysis, although limited in its generalizations because of the small membership per 0-Type, did indicate that, not only is smoking behavior multivariate, but so are smokers. What is important for success in one smoker may not be necessary for another. Different types of smokers may require different levels of treatment and maintenance strategies. Specific smoking typography variables that predict such needs require definition. For the individual smoker, the functions may be complex and varied, supporting the need in smoking cessation for multiple techniques, and a concern for tailoring treatment to the individual characteristics. Future research will need to replicate these preliminary findings as well as the development of treatments tailored to individual differences.

This section presents a critical evaluation of the study. First, this study did not draw its subjects from all persons who may have desired to quit smoking. Rather, the subjects were volunteers who read the newspaper article, heard the radio spots, viewed the television spots, were in church during the ad campaign, or received a flyer announcing the study. As a result, all smokers may not have had an opportunity to volunteer. The relationship of volunteers in this study to the parent population of smokers or aspiring quitters was undetermined. Further, the results may be a function of the subject's willingness to volunteer or availability to attend the treatment. There is no guarantee that the same results would be achieved with smokers who chose not to volunteer.

Another possible weakness of this study may be the fact that it employed a three month follow-up instead of a six month or one year follow-up. However, research has shown that initial abstinence rates decline rapidly during the first month posttreatment, continue to decrease sharply until the third month, and then begin to level off (Danaher, 1980; Lichtenstein et al., 1973; Schwartz, 1969).

The study's outcome results were based on those subjects who completed four or more sessions, rather than all those who volunteered. It was reasoned from the outset that the efficacy of a treatment could only be judged by its effects on the volunteers who completed it. One would be assessing various aspects of motivation rather than treatment efficacy if results were based on all volunteers who sought treatment, regardless of whether or not they completed it. A principle objective of this study was to investigate the effects of two different treatments. It did not appear reasonable to evaluate the effects of treatment on volunteers who did not participate long enough to receive the benefits of the treatments.

There was also a problem in the reliability and validity of measurements. This study relied on subjects' estimates of daily cigarette consumption, rather than controlled self-monitoring during and after treatment. The advantage of subject reports is that no one is in a better position to determine the subject's smoking behavior than the subject. A disadvantage is that the subjects' estimates may be inaccurate. However, self-monitoring has been found to be reactive. In addition, although CO measurement was used to validate smoking behavior during treatment, it was not used during follow-up meetings. Therefore, follow-up data may be overestimated. The major

reason why validation was not done during follow-up was due largely to the availability of the measurement device, which was on loan to the researcher, rather than for some rational reason opposed to its use.

Lastly, the study is open to criticism because the researcher served as group leader in both treatments and was not blind to the hypotheses of the study and the conditions being compared.

Finally, this last section will explore future research directions. There are a number of research areas which might be stimulated by the work presented here. The major objective of the present research was to demonstrate the effectiveness of the Innovative Package Program as a viable treatment package. Results showed that overall, the IPP model was more effective than the ALA model or the comparative group. Although the IPP model demonstrated high abstinence behavior during treatment, the effects were short-lived. More work is still needed on methods to maintain abstinent behavior.

Research on methods to assure that smokers who quit successfully have the coping skills and environmental supports needed to maintain nonsmoking, is currently at a very primitive stage. Novel maintenance procedures such as booster sessions, access to prerecorded telephone instructions and reinforcements, extended sessions, and continued group facilitator phone contact could all be explored by controlled field experiments. For example, Tongas (1979) gradually faded out a maintenance support group over a 12 month time period and achieved a two year abstinence rate of 62%. Also, Chapman, Smith, and Layden (1971) demonstrated the effectiveness of an 11 week maintenance support group, as contrasted with a two week one. These studies

tend to support the notion that longer maintenance sessions foster greater treatment efficacy. Danaher (1977) has even gone as far as to recommend that treatment should continue until the smoker no longer has any urges to smoke a cigarette.

Research from the area of community mental health also supports the added benefits derived from long-term treatment contact within supportive environments. Fairweather et al. (1969) found that persons assigned to his "lodge" community treatment were able to remain within the community as long as they remained a part of the support network created in the experiment. In psychotherapy, Luborsky et al. (1971) found that longer patient contact with therapy was related to positive treatment outcome. In the area of alcohol rehabilitation, Finney and Moos (1979) also recommend long-term treatment contact within an atmosphere of social support.

It appears that from some individuals, regardless of the behavior(s) under consideration, long-term supportive maintenance is needed in order to maximize treatment gains. Therefore, more research in the area of ongoing support networks for recent nonsmokers is needed. This might be accomplished by helping abstainers to form autonomous, self-help support groups, similar to the format used by Alcoholics Anonymous (AA) or Overeaters Anonymous.

There has been considerable evidence that self-help support groups are a significant, cost-effective approach for health care delivery systems (Houpt et al., 1979). Self-help groups provide members with added social support through the creation of a caring community. They also increase members' development of coping skills through the provision of information and the sharing of problem

solutions and experiences. In the present study, nonsmokers at the end of the three month follow-up began to form a support group on their own and several meetings did take place. Although this was not empirically assessed, it would seem to be a natural next step after treatment and maintenance officially ends.

Recruitment of volunteers for smoking cessation programs remains largely unexamined. The best method of announcing or publicizing smoking cessation programs has yet to be determined. Lando (1982) has investigated this area and determined that news releases, letters to employers, and word of mouth produced the greatest response rate. In this study, a newspaper article asking for volunteers produced 179 responses within a 72 hour time period. This response rate outdistanced all other methods used to secure volunteers. More study is still needed to find the most cost-effective technique for recruitment of potential volunteers.

There is also a need for the study of the perceptions of smoking cessation programs and factors affecting the use of these services by the potential consumer, the smoker. Program developers have left the consumer out and the consequences of their exclusion may be serious. For example, survey results have found that the most commonly offered methods of quitting are the least acceptable to smokers who wish to stop (Schwartz, 1967). Consequently, the high attrition rates experienced across treatments may reflect inadequate acceptance of the method.

Also, efforts to evaluate specialized cessation programs for selected subgroups, such as expectant mothers, blacks, blue collar workers, and lower socioeconomic groups, which are known to be at a

high health risk, require immediate attention. Empirical research is desperately needed on recruitment, treatment, and maintenance methods which take into account the uniqueness of each subgroup. Prior research and survey data have indicated that these subgroups have been underrepresented in the designing of models and participation within treatment programs.

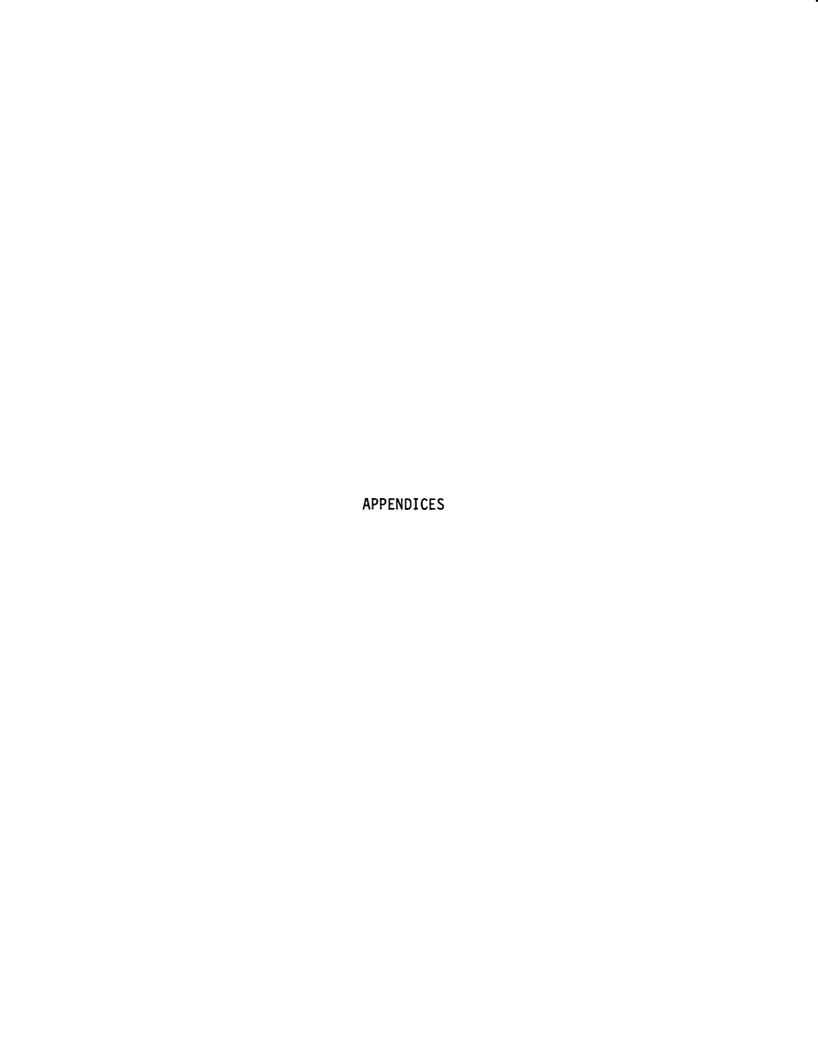
In the present study, approximately 75% of the recruitment campaign was directed toward one such subgroup, blacks. As a result of the high prevalence of smoking among blacks, it was felt that this extensive recruitment effort would increase their presentation in the study sample. However, a less than enthusiastic response was noted. Although this initial attempt to attract an "at risk group" was disappointing, it is quite possible that an atmosphere of increased awareness for change did develop later. It is clear that more effective techniques for creating an atmosphere of motivation and change should be directed toward these subgroups. In addition, specially designed treatment models for "at risk" subgroups will need controlled validation. It may be that these special groups will not seek out treatment—treatment may have to be taken to them.

Treatment success is sometimes better realized with less, rather than more, program contact. This, along with the treatment gains found in tailoring treatment methods to the characteristics of individual smokers suggests another potentially useful direction for future research. In two studies (e.g., Best, 1975; Best and Steffy, 1975), findings regarding the results of tailoring treatment to subjects' level of motivation and locus of control have shown

interactions between type of treatment and locus of control. The typological analysis from this study has also suggested the importance of packaging treatment components so that they are more amenable to individual differences. The timing of interventions; the efficacious size and composition of treatment groups, needs to be considered carefully in controlled research. Participants' subjective evaluations of program elements, self-efficacy, and prior experience with the smoking behavior all need to be considered further.

Cessation programs conducted in occupational settings may hold promise as an alternative to the more commonly used community-wide clinics. Using the organizational features of the worksite to facilitate recruitment, maintain contact with smokers over an extended period, support, encourage, and reinforce nonsmoking behavior would go beyond a typical clinic program which offers meetings held once a week. The organizational and social factors that may be activated to reinforce nonsmoking in such settings, appear encouraging (Orleans and Shipley, 1982). This study has indicated the positive effects between social support and nonsmoking behavior. If a worksite milieu were able to more effectively use the social support potential, nonsmoking behavior would be likely to show more resistance to relapse.

In addition to current attempts to modify existing smoking patterns, an increased emphasis should be placed on the prevention of smoking. This would necessitate the increased targeting of smoking prevention program to nonsmokers or preaddicted smokers, beginning with preteenaged children and progressing to teenagers.



APPENDIX A

I.P.P. FACILITATOR'S GUIDE AND PROGRAM MANUAL

A COMMUNITY-BASED SMOKING CESSATION TREATMENT: THE INNOVATIVE PACKAGE PROGRAM (I.P.P.)

Facilitator's Guide and Program Manual

Richard J. Coelho, Project Director

Michigan State University

Department of Psychology

1982

INTRODUCTION

This six-week (7 session) multi-component smoking cessation treatment program is based on a model proposed by Stachnik and Stoffelmayr (1981) of the Department of Psychiatry at Michigan State University. The model has undergone pilot testing within a wide variety of subject populations (chronic smokers) over the past five years. Results have indicated that the program is most effective if all program components are utilized as described in the following manual.

Program Overview

The program is divided into treatment and maintenance phases. During the treatment phase smokers are helped to cut down and, finally, to stop smoking on a prearranged date. The purpose of the maintenance phase is to help each individual stay off cigarettes.

During the treatment phase, smokers are taught a number of techniques for stopping. There are techniques which have been developed by researchers nationwide and are the most effective to date.

Program participants are divided into small teams of seven persons; the task of these teams is to provide mutual support to a membership attempting to give up cigarettes. It has been found that most persons are able to give up cigarettes if they do so in a supportive group.

In order to elicit social support for persons taking part in the program, participants inform 5 to 10 friends and relatives, in writing, of their intent not to smoke during the maintenance period. This letter also includes a statement indicating that the participants have agreed to allow the stop-smoking program staff to contact the recipients of the letter, to inquire about the participants' smoking status.

All participants are required to post \$40 deposit to support their pledges not to smoke. Persons who do not smoke throughout the maintenance period are refunded the \$40 deposit they invested in themselves. For every smoking incident, one-half of the money in that person's account (initially \$40) will be distributed among the members of nonsmoking teams). The monetary incentives are designed to provide an extra challenge to smokers, to encourage smokers to stay off cigarettes and to increase team cohesiveness.

During the meetings, any smoking incidents are announced to the group as a whole. The team in which the smoking incident occurred is identified.

Finally, throughout the program, information on why one should stay off cigarettes and on things participants can do to improve their general health is provided by selected community health professionals.

Group Facilitator

The group facilitator has the very distinguished undertaking of administering the I.P.P. model. It is that person's responsibility to introduce the program component and quitting techniques to the participants, institute the session activities, and thus help to insure positive group interaction. By names of his/her interest, commitment, concern, and enthusiasm, the facilitator is given the task of helping to maintain the participants' motivation and commitment to quitting and remaining abstinent at a high level. The facilitator is the essence of the treatment program, keeps it running, maintains its smooth operation, and assists participants to help themselves toward abstinence from smoking.

The facilitator, however, is not expected to function as a "group therapist." That is not the purpose or the underlying premise of this model. Nor is one expected to be a smoking cessation expert, this is taken care of by the health education component which allows for experts from the community to address specific areas of concern to smokers. Therefore, both professional and nonprofessional facilitators can achieve the desired results with this program.

MODEL OF SCHEDULING FOR PROGRAM SESSIONS

Session	Time Lapse	Date		
1		May 12, 1982		
2	One Week	May 19, 1982		
3 ("Quit Day")	One Week	May 26, 1982		
4	Two Days	May 28, 1982		
5	Five Days	June 2, 1982		
6	One Week	June 9, 1982		
7	One Week	June 16, 1982		

I.P.P. SMOKING CESSATION PROGRAM

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SECTION A

SMOKING CESSATION PROGRAM: I.P.P.

Facilitator's Guide

Richard J. Coelho
Director
1982

I.P.P. PROGRAM OUTLINE

SESSION I

A. Group Meeting

- Introduction
- (2) Overview of session
- (3) Overview of treatment period
- (4) Overview of stop-smoking techniques
- (5) Overview of the role of social support and monetary incentives
- Completion of consent forms and questionnaires (6)
- Explanation of teams
- (8) Team assignments
- (9) Discussion of mutual support techniques

B. Team Meetings

- Review of smoking behavior
- (2) (3) Review of number of cigarettes smoked
- Plans for mutual support
- (4) Plans for completion of assignments

C. Assignments

- (1) Every participant should bring 5-10 names of friends and relatives to Session II.
- (2) Every participant should bring envelopes addressed to these persons.
- Every participant should choose a personalized stopsmoking program.
- (4) Participants will write the number of cigarettes smoked (every week) on the forms provided and hand in each week.
- (5) Participants will complete a behavioral analysis of their smoking.
- (6) Teams need to develop, in writing, a plan for mutual support.
- Comply with chosen stop-smoking techniques.
- (8) Develop further plans for mutual support.

SESSION I

A. Group Meeting

(1) Introduction:

Introduce yourself to the group and then give the following statement:

Each of you is here for the obvious purpose of giving up cigarettes, regardless of your personal reasons for wanting to do so. The treatment program is intended to help you do this in the most effective and painless way possible. It is very important to keep in mind that smoking is a learned activity. Even though the smoking habit may be quite deeply ingrained within your day lifestyle, it is still only a habit. Just as habits can be learned, they also can be unlearned. The treatment program you will participate in has been designed specifically to make it easier for you to break the smoking habit and stay off cigarettes thereafter.

There are numerous ways in which habits can be broken. One problem with smoking is that for many people it has become essentially automatic. It is something you do almost instinctively, usually without conscious thought. The treatment program is intended to change the nature of your smoking so that it is not so overlearned and so automatic. One fairly simple way of doing this is to require you to stop smoking on a specific day and time. This will make you more aware of your smoking because you will be deliberately forcing yourself to set a goal for which you can prepare.

Have any of you tried to cut back on your smoking without stopping?... What happened? (Pause for participants to respond)... Right. Almost no one can cut down on smoking permanently and continue to smoke at a lower level. As you smoke less and less, each cigarette becomes more rewarding to you. If you just cut down on your smoking, you are training youself to appreciate each cigarette you do smoke that much more. All too often you find yourself reverting to your old level of smoking.

This treatment program is intended to produce exactly the opposite effect from cutting down. Of course, there is no magic and will require your personal effort if it is to be successful for you.

(2) Overview of session:

Explain that meetings will be divided between sessions of the whole group and team meetings.

(3) Overview of treatment period:

The purpose of treatment period for the first two sessions is to help participants to reduce smoking and to be able to stop on the stop-smoking date. Be reminded of the fact that smokers can stop smoking on a stop-smoking date. It is important that the smokers' expectations that they will stop be firmly supported by you.

(4) Overview of stop-smoking techniques:

The stop-smoking techniques described in the manual fall into two broad categories: (a) cutting down; and (b) switching brands. In addition, a number of other hints which are useful are given. Important to both techniques is that smokers keep records of number of cigarettes smoked. The package includes forms from such count. In addition, smokers should be encouraged to fill out the form which deals with a behavioral analysis of smoking, (i.e., the description of the situations in which they smoke). There are forms for this in the package too.

The most important thing is that each smoker devise a plan and stick to it. We assume that you will have to point out to smokers different sections in the Stop-Smoking Manual. It is also important that you be conversant with the tips given.

(5) Overview of the role of social support and monetary incentives:

In order for smokers to elicit social support, they will provide the names of between five and ten persons. These persons will get letters similar to the ones included in the package and thereby be asked to participate in an indirect fashion in the program. Please note that the letters are somewhat legalistic and if your group decides to change them, they should remain roughly similar to the one given. Also, remember that you will not be contacting the smokers' support persons, but that this will be organized by the program staff.

The monetary support system is explained in the rules and regulations. Review those rules with the smokers.

(6) Completion of consent forms and questionnaires is selfexplanatory.

(7) Explanation of teams:

The purpose of teams is to provide mutual support to those who give up smoking. You will encourage teams to develop techniques for mutual support specific enough so they can be written down. Also, be reminded that all techniques which are described ought to be tried out before the stop-smoking date. Persons who have never visited someone before are unlikely to do so if they are in difficulty.

(8) Team assignment:

The team assignment could happen in several different ways: Along friendship patterns or by random assignment. It is important that you, in conjunction with the smokers, decide how to do it. Groups must be numerically as equal as possible (otherwise all financial transactions will become skewed).

(9) <u>Discussion of mutual support techniques</u>:

Most persons have heard of techniques used by AA and Weight Watchers. They will have heard of "buddy systems" and of the cheering which does on during Weight Watchers' meetings. In fact, many of the participants would have already experienced another cessation treatment which may have relied on mutual support. It is important that you point out to the participants that although any suggestions, whatever their source, are useful, it is nevertheless important that persons develop their own techniques. Furthermore, try to encourage team-based techniques rather than just methods which rely on a one-to-one support (e.g., buddy system). Although mutual support is a team activity it is nevertheless discussed during the program meeting here and at other places throughout the first few meetings because participants will need a variety of suggestions for such mutual support which best come from the whole program.

Explain to the participants that mutual support techniques for which they are planning and which they will describe in their written mutual support plan must be tried out prior to the "Quit Date." A simple example to be given is that it is often difficult for persons to call someone up in a moment of need if they have never made a phone call to that person's house before. Similar previous practicing must occur of visiting or having meals together or going out for a drink together. If teams do not practice, then the chances that they will actually use those techniques are minimal.

(10) Reiterate the need for a written mutual support plan:

At the next session each team is expected to produce a written mutual support plan. The point of this is to focus everyone's attentions on this most important activity.

B. Team Meetings

Here is the place where the facilitator goes into action. As a facilitator you must help the different teams to develop plans and to complete their assignments. This is accomplished, in part, by circulating from team to team encouraging team discussions. Remember that you do not lead the teams, but want to encourage the teams' independence.

(1) Review of smoking behavior:

Have a general discussion on what people notice about their smoking, situations they smoke in, where it is easiest to cut out cigarettes, and with whom they smoke most often. You will find enclosed some work sheets; hand them out to all. They will be required to hand them in each week. If you look at the work sheet, you will notice that it provides space to write down dates, time, day. These work sheets can be cut up so that they fit easily into a cigarette pack. Under amount smoked you will see first the number and then a line for people to fill in how much of a cigarette they smoked.

(2) Review number of cigarettes smoked:

Go around the team and ask everyone to tell everyone else how many cigarettes they smoked during the last week. Ideally, they ought to have a day-by-day record. In addition to the forms which you just handed out, it might be useful for people to have little notebooks. It is important that everybody realize again that quitting smoking is a very intensive activity. Stopping suggests something passive, but, in actual fact, quitting smoking is exceedingly active. The greater the participants' involvement is in cutting down and stopping, the stronger will be their commitment to stay off once they have stopped.

(3) Mutual support techniques:

Have each team discuss viable support techniques that may be considered (i.e., extra meetings at someone's home, phone calls to each other, specific techniques from the manual they may use, etc.). This should be a brainstorming time when each team member becomes familiar with the others' likes and dislikes.

(4) Completion of assignments:

The focus here should be on making sure all team members know what is expected from the assignments. If needed, you may have to go over each assignment so there is no confusion about what is due next week. Most of the assignments are self-explanatory but persons ought to be shown how to record the number of cigarettes on the form provided, and how one goes about analyzing one's behavior. Give simple examples such as smoking while on the phone, smoking in the car, or smoking when angry.

SESSION II

A. Team Meetings

- (1) Review mutual support techniques(2) Review of progress participants made in complying with their chosen stop-smoking program
 (3) Complete written proposal for mutual support
 (4) Review plans for quitting smoking

B. Group Meeting

- Film, "Lets Call It Quits"
- (2) Completion of contracts(3) Completion of envelopes
- (4) Collection of \$40.00 per participant
- (5) Review tips for maintenance
- Discuss need for autonomous meetings

C. Assignment

(1) Stop smoking at MIDNIGHT before next meeting

SESSION II

A. Team Meetings

(1) Review of mutual support techniques:

The key is that team members develop ways by which they will give each other support during the time immediately following the stop-smoking date. The problem people will face is that they will want a cigarette but will have committed themselves not to smoke. (It is very important that people do not even sneak a drag. It is easiest to stay off cigarettes if they do not have even a drag once they have stopped.) It is at these moments that the help of other team members is required. For example, persons in other programs have made arrangements to call each other, to visit each other, and to meet regularly (even daily) for short periods of time during the first two weeks of not smoking. Other ideas are to have dinner together, arrange for short meetings at given times such as late at night, start an exercise program, etc. To develop effective mutual support techniques is the most important function of the team.

(2) Review of progress people made in complying with chosen smoking cessation programs:

Again, each member ought to report to the team on how they are doing. The important thing is that everyone <u>have</u> a plan, not which one. Different plans can be used, but people should not just flounder.

(3) Complete written proposal for mutual support:

Encourage teams to write down what they would be doing under which kinds of circumstances. Somebody who has not been part of the team discussions should be made to understand what they will be doing.

Work on ways to practice the procedures which have been described. As we point out during previous meetings, if somebody has never visited someone before, it is extremely difficult to do so when under stress.

(4) Review plans for quitting smoking:

All team members should tell everyone else how they are going to do it.

B. Group Meeting

The purpose of this meeting is, of course, to support everyone's pledge to stop smoking at the stop-smoking date which is MIDNIGHT BEFORE THE NEXT MEETING.

(1) Film, "Lets Call It Quits"

Simply watch the film, but do not spend a great deal of time discussing it. The film makes it quite clear, while in a humorous fashion,

that people can stop smoking if they set their mind to the task.

(2) Completion of contracts:

This is busy work, but must be done.

(3) Completion of envelopes:

Your program director is going to give you a set of envelopes and, as he will have told you, if postage becomes an issue, the program will provide it. Remember also that we expect between five and ten names. Participants cannot name other participants in the program, but ought to include persons who live with them and other people who are important to them and with whom they have regular contact, such as family and co-workers.

(4) Collection of \$40.00 per participant:

Please obtain from your program director a receipt pad. Each participant must be given a receipt once he has handed over the \$40.00. If there should be a problem with the \$40.00, we have discussed the possibility of installment plans. These, however, are much more complicated and therefore not recommended. If the need for one should arise, please talk to your program director.

(5) Review tips for maintenance:

If you have reviewed page 8 of "Stop Smoking Techniques," you will notice that those tips are aimed at (a) the removal of all temptation; (b) coping with the urge; and (c) controlling weight.

To start with the last point first, weight really is not as much of a problem as most people think. The smokers who do gain weight do so because they start eating at times when they previously had a cigarette. Therefore, the techniques important to this issue have to do with having "munchies" such as celery, carrots, etc. available. Oral gratification (nonfattening of course) also helps with the urge. You will note there is advice on drinking water, brushing teeth, etc.

(6) Discuss need for autonomous meetings:

We have noticed that program participants like to have frequent meetings during the first week, just after the stop-smoking date. Frequent meetings might be one of the techniques of mutual support already listed by the team, but is also one procedure they should be encouraged to use. It is our understanding that you as facilitators are in no way required to take part in those meetings but you might wish to do so. These meetings ought to be short, as their function is to provide support, not to teach anyone anything. More frequent, shorter meetings are much more valuable than long, infrequent ones.

C. Assignment

STOP SMOKING AT MIDNIGHT BEFORE THE NEXT MEFTING!

SESSIONS III THROUGH VII

While the particular themes and the overall emphasis change as these meetings advance, the format of all of them is similar. When the participants begin arriving at the meeting room, they find the tables arranged in clusters with just enough chairs to accommodate the members of their teams (e.g., 7-8 people). Therefore, prior to the group meeting, teammates have the opportunity to converse with one another about the subject matter of their choice. They should be encouraged by the group leader to discuss specific procedures they might use to support each other in maintaining abstinence. The group leader should also remind teams to review their written proposals for mutual support which they completed during session two. However, conversations will sometimes focus on events unrelated to smoking that have occurred at home, the workplace or with friends which concern some or all of the team members. This is expected, especially during later sessions when participants are not as anxious about their ability to control their smoking and when a sense of "community" has developed. During the first two meetings of the program, their conversation constantly focuses on specific aspects of their smoking (e.g., unusually strong urges to smoke, situations that test their self-control, how they are handling smoking friends, etc.). During this time, support from their teammates comes, not only in the form of encouragement to remain abstinent, but also as specific suggestions as how to best cope with various problem situations. For teams which are not as spontaneous as others in their development of group support, the group leader may help facilitate this atmosphere by interacting with the team in order to help get going. Specific attention may have to be focused on individual members, in a supportive way, to make them feel a part of the group.

When the meeting is called to order, the first formal activity is announcements by the group leader. The most important announcement concerns whether or not there have been any smoking incidents in any of the teams, and thus whether or not any team has gained or lost money as called for in the rules of the program. (Remember, NEVER, announce individual names--identify only the team). Although initially of great interest, the anticipation of that announcement diminishes as the program progresses since smoking incidents and thus the movement of money from one team to another, are rare. Interest in the bankbook with the entire group's money will similarly decline. Additional announcements deal with the health education topic of the next meeting, participants who were unable to attend, articles about smoking that appeared in the local newspaper, etc. After determining if anyone has any additional announcements to make, the meeting moves to the next activity: introduction of the guest speaker or the film on some aspect of health education to be shown that evening. The speakers are typically employees of local heart, cancer, or lung

associations or professional volunteers from the community whose names are obtained from the above agencies. Local educational institutions, and agencies of state and local government are also sources of knowledgeable speakers who are usually willing to volunteer their time. When films rather than guest speakers are utilized, they are also obtained from the above agencies.

The topics and film employed during the first two sessions focus on the smoking habit, its effects on one's health, and ways to quit. Starting on the "quit date", smoking <u>per se</u> gets less attention and is replaced by more generic health issues, e.g., stress management techniques, weight control, proper diet, exercise, etc.

In sum, the agenda for sessions THREE through SEVEN is essentially constant, except for the health education topic, and includes the following activities:

- 1. Team meetings
- 2. Call to order
- 3. Announcements
- 4. Film or guest speaker on health education topic
- 5. Adjournment

Program Topics: Treatment and Maintenance Components

Sessions one and two are held during succeeding weeks and constitute the "treatment" component of the program. Session three is the "quit day" and begins the "maintenance" component, which lasts for five sessions. During the quit week (i.e., third week), two meetings are held within 48 hours of each other. This takes place in order to offer added support during the first few critical days of abstinence. All participants should be reminded of this fact and strongly encouraged to attend. Thereafter, the remaining three meetings are held weekly. The topics and objects of each session are summarized below.

I.P.P. TREATMENT FORMAT

Session Number	Week Number	Topic		Objective(s)
1	1	Introduction to program	1. 2. 3. 4. 5.	Review of program Discuss quitting techniques Review manual Team selection Questionnaire
2	2	Film distributed by American Cancer Society titled "Lets Call it Quits"	1.	Complete program contracts Review team plans

Session Number	Week Number	Topic		Objective(s)
			1.	FILM Point out dangers of sneaking a cigarette in humorous way Reassure participants that quitting is achievable
3	3	Talk & Demonstration: Dr. Parker, M.S.U., Department of Education on Stress Reduction	 2. 3. 	can be used to reduce stress Introduce a positive addiction for possible cultivation by participants
4	3	Film distributed by American Lung Assoc. titled "Is It Worth Your Life"	1.	relationship between smoking and lung cancer
5	4	Talk & Discussion: Ms. Martinelli, Lansing Dietetic Assoc. on nutrition and weight control	1.	Assist those who are gaining weight Develop a more healthful diet
5	5	Talk & Discussion: Dr. Graskin, Ingham Medical Center on relationship between smoking (nonsmoking) and heart/lung function	 2. 3. 	level about healing effects of nonsmoking on the body (i.e., heart/lungs) Build awareness that smoking is linked to heart disease

Session Number	Week Number	Topic		Objective(s)
7	6	Talk & Demonstration: (involving program participants) on aerobic exercise by instructor from YMCA, Ms. Hall		Introduce a positive addiction for possible cultivation by participants Contribute to an emerging wellness gestalt that will compete with a smoking relapse
		Distribution of bond money and general dis- cussion of how parti- cipants will preserve smoking abstinence	 2. 3. 	ment of those completing the program Remind participants about dangers of relapse at this early stage

Letter Mailings and Phone Checks

At the end of session two, each participant will give to you their list of "support persons" with whom you will be in contact concerning their smoking behavior. Make sure you have the support person's name, address and telephone number(s). Starting with the third session (Quit Day) you are to mail out two (2) "surveillance letters" (see manual) and make two (2) telephone checks of these support persons each week during treatment. At the point when you start to make these checks, all support persons would have been notified by the participant and given permission to speak with you. For telephone checks, you should use the following format:

Hello, my name is _____ and I am calling for the the Stop-Smoking Project. As you know, ____ is a member of a group who are committed to quit smoking. She/he has given your name as a support person who we should check with to make sure his/her pledge is upheld. I would like to know if you have seen ____ smoking? (If yes, fill out incident report with all critical information.)

Thank you very much for your cooperation. As you know, we do make periodic calls and letter checks during the program. So, during the next few weeks you will probably receive another call or receive a letter asking for the same information.

For further reading:

IPP Model:

- 1. Coelho, R.J., A cluster analytic investigation of an innovative smoking cessation program: The M.S.U. smoking project. Unpublished manuscript, Michigan State University, Department of Psychology, 1981.
- 2. Stachnik, T.J., & Stoffelmayr, B.E. Is there a future for smoking cessation programs? <u>Journal of Community Health</u>, 1981, 7, 47-56.
- 3. Stachnik, T.J., & Stoffelmayr, B.E. A smoking cessation program that works. <u>Michigan Hospitals</u>, 1982, January, 12-14.

Deposit Systems:

- 1. Elliott, R., & Tighe, T. Breaking the cigarette habit: Effects of a technique involving threatened loss of money.

 <u>Psychological Record</u>, 1968, <u>18</u>, 503-513.
- 2. Spring, F.L., Sipich, J.F., Trimble, R.W., & Goeckner, D.J. Effects of contingency and noncontingency contracts in the context of a self-control-oriented smoking modification program. <u>Behavior Therapy</u>, 1978, 9, 967-968.
- 3. Tighe, T., & Elliott, R. A technique for controlling behavior in natural life settings. <u>Journal of Applied Behavior Analysis</u>, 1968, <u>1</u>, 263-266.
- 4. Winett, R.A. Parameters of deposit contracts in the modification of smoking. <u>Psychological Record</u>, 1973, <u>23</u>, 49-60.

Social Contracts:

- 1. Bornstein et al. Reduction of smoking behavior: A multivariate treatment package and the programming of response maintenance.

 <u>Psychological Record</u>, 1977, 27, 733-741.
- 2. Janis, I.L., & Hoffman, D. Facilitating effects of daily contact between partners who make a decision to cut down on smoking.

 Journal of Personality and Social Psychology, 1970, 17, 25-35.
- 3. Lawson, D.M., & May, R.B. Three procedures for the extinction of smoking behavior. Psychological Record, 1970, 20, 151-157.

Multi-Component Studies:

1. Elliott, C.H., & Denny, D.R. A multiple-component treatment approach to smoking reduction. <u>Journal of Consulting and Clinical Psychology</u>, 1978, <u>6</u>, 1330-1339.

- Flaxman, J. Quitting smoking now or later: Gradual, abrupt, immediate and delayed quitting. Behavior Therapy, 1978, 9, 260-270.
- 3. Lando, H.A. Successful treatment of smokers with a broad spectrum behavioral approach. <u>Journal of Consulting and Clinical Psychology</u>, 1977, 45, 361-366.
- 4. Pomerleau, O.F., & Pomerleau, C.S. <u>Break the smoking habit: A behavior program for giving up cigarettes</u>. Champaign, IL.: Research Press, 1977.

SECTION B

I.P.P. SMOKING CESSATION PROGRAM

<u>Handouts</u>

I.P.P. PROGRAM HANDOUTS*

Session Distributed Material 1 Information Packet: 1. Participant Manual (enclosed), Coelho, 1982. Some Ideas and Suggestions for Quitting the 2. Smoking Habit, American Lung Association of Michigan, Lansing, 1981. Smoking and Teeth? American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611, 1976. 4. What Happens After You Quit? USDHEW, NIH Publication No. 80-1823-A, February, 1980. 5. DANGER, American Cancer Society, 1978. Calling It Quits, USDHEW, NIH Publication No. 80-1824-A, February, 1980. Want to Quit Smoking? Here are Tested Ways, 7. Todays Health, May, 1969, p. 84. Contracts, Program Agreement (see manual), 2 1. Coelho, 1982. Drug Effects Can Go Up in Smoke, USDHEW, HEW 2. Publication No. (FDA) 79-3086, 1979. Coelho's Stress Reduction Formula, Coelho, 1982. 3. How to Help a Friend Quit Smoking. Smoking Withdrawal, Symptoms of Recovery, Don Powell, American Health Foundation, 320 East 43rd Street, New York, NY 10017. 3 Stress Fact Sheet, Beverly Parker, Michigan State University, 1982. Personal Stress Management Profile, Beverly 2. Parker, 1982. 4 Estimating Ideal Body Weight and Calories Needed for Energy. Lansing Dietetic Association, 320 N. Washington Square, Lansing, MI. 2. Techniques for Weight Control, Lansing Dietetic Association. Problems and Solutions Regarding Weight Control, Lansing Dietetic Association.

Your Nutrition and Diet Guide, Shurfine, P.O. Box 1216, Melrose PK, IL 60160, 1980 (Nutritive Value of

American Foods Agriculture Handbook, No. 456).

^{*}Information packet and program handouts are available from the author or from each source upon request.

SECTION C

I.P.P. SMOKING CESSATION PROGRAM

Record Keeping Forms

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STOP SMOKING PROJECT INCIDENT REPORT

Participant's Name:
Today's Date:
Smoking incident reported by:
Summary of phone call, letter or personal contact: (Where did the smoking incident occur? Was the person alone or with friends? How many cigarettes were smoked? How did the person feel both during and after the cigarette was smoked?).

Your Name

(Surveillance Letter Check)

I am writing at to you in r	eference to:
checks about participants' such check. Please take a	op Smoking Program makes periodic smoking behavior and this is one minute to mark one of the boxes me in the enclosed envelope.
Thank you for your support	and assistance.
	I have no knowledge that he/she has smoked.
	I have knowledge that he/she has smoked (Please give details: when, where, who was present, etc.).

Richard J. Coelho, Director Stop SMoking Project

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	Absent (Date)	Smoking Reported/ Date (By Whom)	Amt. of \$ Deducted	Team \$ Total
TEAM:				
Name:				
1.				
2				
 4 				
5.				
6.				
7.				
8.			<u> </u>	
TEAM:				
Name:				
1				
 2. 3. 				
4				
5.				
6				
7.	1			
8.				

Week	of:	to	

ATTENDANCE AND MEMBERSHIP FORM

Program Members		1	2	3	4	5	6	7
NAME	HOME PHONE							
ADDRESS	WORK PHONE	1						
		F	İ		=			ᄅ
NAME	HOME PHONE	1						
ADDRESS	WORK PHONE							
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NAME	HOME PHONE	1						
ADDRESS	WORK PHONE		<u> </u>	<u>_</u>	<u> </u>			
NAME	HOME PHONE]						
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NAME ADDRESS	HOME PHONE	l						
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				l	l	l	l	
NAME	HOME PHONE	1			ļ	1	Ì	
ADDRESS	WORK PHONE	<u>Ļ</u>	<u> </u>	<u> </u>	느	<u> </u>	<u> </u>	<u> </u>
		[
NAME	WORK PHONE	ł		1				
ADDRESS	HONK FROME	는	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	H
NAME	HOME PHONE	ł						
ADDRESS	WORK PHONE	{						
		<u> </u>	+-	 	-	 - -	⊨	H
NAME	HOME PHONE	1						
ADDRESS	WORK PHONE	1						
						4	1	<u> —</u>

Daily Cigarette Tally Sheet

Name:	
Date:	
Day:	Total:
6am	6pm
7am	7pm
8am	8pm
9am	9pm
10am	10pm
llam	11pm
12pm	12am
1pm	lam
2pm	2am
3pm	3am
4pm	4am
5pm	5am

Participant Status Form

Person ID Number:	Group Number:
Last Name:	First:
Address:	
Telephone: (W)	
Sex: Age:	
Years Smoked:	-
Previous Attempts To Quit:	
Previous Cessation Program	Experience:
Date	Now Cigarettes Smoking? Daily
First Session	
Last Session	
One Month Follow-up	
3 Months Later	
6 Months Later	
l Year Later	
Comments and other data:	

SECTION D

PROGRAM MANUAL

LANSING AREA STOP-SMOKING PROGRAM

Program Manual

Richard J. Coelho
Director

Breaking the cigarette habit really isn't so tough. Millions of Americans do it every year. While many have given up smoking, others have not and smoking is still a <u>major risk factor</u> for a variety of serious health problems ranging from heart disease to cancer of the lungs, throat and bladder.

Many people have trouble giving up cigarettes since a number of factors make smoking a difficult habit to break. First, nicotine has some addictive qualities, not unlike other drugs (e.g., alcohol and heroin) that are difficult to give up. Second, cigarette smoking gets linked with a wide variety of pleasurable activities (e.g., good food, coffee, having a good conversation, etc.). After being associated many times with those activities, some of their pleasurable aspects rub off onto the smoking behavior. Further, the smoking becomes woven into a person's total lifestyle to the extent that life without cigarettes seems empty, and just thinking about quitting makes the would-be quitter downright depressed. Third, cigarettes are readily available in our culture, both in their constant access in stores, machines, from friends and also in terms of cost; relative to most Americans' income they are definitely affordable. Finally, cigarette smoking is an extremely well-ingrained habit just in its sheer frequency. A person who has smoked a pack a day for ten years has "practiced" the habit 73,000 times.

With these factors in mind, its obvious a person must be well motivated to become a nonsmoker. Unfortunately, the things that seem to motivate us best are those present in our current lifestyle, not some distance in the future. Thus, the threat of future lung cancer or emphysema or a premature stroke or heart attack usually has little influence on current smoking habits.

In designing a stop-smoking program several points have been taken into account. The most important one is that most smokers are able to give up smoking, especially for short periods of time. For example, among 50 smokers we interviewed, on the average they had stopped smoking seven times. The problem for most smokers is not the act of quitting, but staying off cigarettes. It is for this reason that our program is divided into a "treatment phase" and a "maintenance phase." During the treatment phase you will be helped to give up smoking and the maintenance phase will focus on staying off cigarettes.

An element common to all effective stop-smoking programs is setting a firm date after which no cigarettes will be consumed. Most persons who stop cold turkey, pre-plan such a cut-off date. Others use a variety of techniques to reduce cigarette consumption, but finally this date also arrives. The smoking cessation program you will participate in will have a stop-smoking date.

Although it is now clear to all smokers that they have to give up cigarettes, the thought of never smoking again is a scary one. Therefore, it is common practice to give one's self an initial limited

period for not smoking. The program you are in requires nonsmoking for one month. We would like to tell you that we think that one month is not really long enough for one to be considered a nonsmoker. We chose one month because it is within this time period that most people encounter difficulties in remaining abstinent. However, it is important for you to know that even after not smoking for one month, you are still in grave danger of relapse, and we will help you devise methods for yourselves to stay off cigarettes.

Although there are a number of smokers who give up smoking on their own, many find it helpful to go through the process of giving up cigarettes and learning to be nonsmokers with a group of persons. The group is a source of suggestions on how to cope with giving up cigarettes and remaining nonsmokers, and also a source of support. All of you will, therefore, be in a group. You will be meeting once a week during the treatment phase (two weeks) and during the maintenance phase you will meet twice during the week you guit and then weekly thereafter (three weeks). The chances are that you, like other groups we have worked with, will want to meet more often during the weeks following the stop-smoking date. Therefore, the program will last for six weeks and will include seven scheduled sessions. All meetings organized by program staff will be limited to two hours and will, in addition to giving you the opportunity to discuss your quitting and maintenance strategies with each other, provide you with information on smoking and other health issues.

Persons who cease smoking are frequently interested in changing other health habits as well. For this reason we will present you with information on nutrition and phsyical activity. If there are other topics you would like to learn about, please let us know.

PROGRAM DESCRIPTION

The purpose of the stop-smoking program is to help you stop smoking on a given date and stay abstinent thereafter. The program is divided into two parts--a treatment and a maintenance phase. The treatment phase lasts for two weeks, and it is during this time that you will be helped to alter your smoking to such an extent that you will be able to stop smoking on the "stop-smoking date." The emphasis of the maintenance phase is to help you to stay off cigarettes. The maintenance phase lasts one month.

Group Meetings

You will be meeting with other persons in your church and local community who intend to give up smoking. The purpose of these meetings is twofold: to provide the opportunity for mutual help in the process of giving up cigarettes, and to give you information to encourage abstinence and other measures you can take to improve your health.

To provide for encouragement and mutual support, participants will be divided into <u>teams</u> of about five persons. It is expected that much of the mutual support will come from those teams. During each group meeting, time will be provided for team members to meet together. Even though this is important, it is even more important that team members provide support for each other away from the program meetings. During the group meetings we will be showing you films and providing quest discussion leaders. These films and discussions will deal with issues of smoking and inform you about other methods to improve your health.

Social Support

To help you give up smoking, you will be enlisting the help of friends and relatives, in addition to assistance from your team members.

Before the stop-smoking date you will be sending out form letters to five or ten persons who are important to you, informing them of your intent not to smoke for a period of one month. These letters will contain your request that those persons help in your efforts and, if contacted, provide information on your progress to the program staff. During the program the staff will actually contact some of your support persons each week and inquire about your smoking habits. If a smoking incident has occurred, this will be announced during the group meetings, and your team will be identified.

Bond Money

In order to help you give up smoking, you must each provide a \$40.00 deposit to support your pledge not to smoke. At the start of the program each member will have \$40.00 in their account and team total of \$200.00 (assuming five-member teams).

If a smoking incident occurs, one-half the money in the account of the person who has smoked will be divided among the teams without a smoking incident, thus decreasing the smoker's team total while increasing the totals on nonsmoking teams.

The money is intended to challenge you to become a nonsmoker and, by promoting a friendly competition between teams, to encourage team support of nonsmoking. Exchanges of money will be paper transactions during the one month maintenance phase and the funds will be disbursed at the end of the program.

HOW TO GET STARTED

An important part of any effort to stop smoking is a firm stop-smoking date. A <u>stop-smoking</u> date is an essential part of the program you are enrolled in. There are a number of ways you can prepare yourself for this date. The methods described below are some you may find helpful. What is important is that you choose one or more techniques and stick by them. To measure your progress you should devise a way to record your adherence to the plan. We have attached forms for counting cigarettes and analyzing the situations in which you like smoking.

Stop-Smoking Techniques

(1) Cutting down

- (a) Begin your effort with an analysis of your smoking behavior. Find out where, when and under what circumstances you smoke.
- (b) Decide on the number of cigarettes you will smoke the next day.
- (c) Adhere strictly to the set target number of cigarettes.
- (d) Use your analysis of your smoking behavior to guide your decreases in smoking.
- (e) Helpful hints:

*Make smoking a separate activity that is in no way a part of your daily life. For example:

- -Do not smoke while you are talking on the telephone.
- -Do not smoke while you are watching television.
- -Do not smoke while you are typing.
- -Do not smoke while you are drinking coffee or an alcoholic drink, or at any time when you habitually drink any beverage.
- -Do not smoke after meals.

*Become an expert on your own habit:

- -Know the exact number of cigarettes you smoke per day.
- -Know which cigarettes are the most important and which are the least important.
- -Know your reason for wanting to smoke each cigarette. For example, do you smoke when you are hungry, thirsty, bored, nervous? Do you smoke most in the morning, at night, indoors, outdoors, at work?

*Count out the number of cigarettes you intend to smoke each day and carry only those with you.

*Set up no-smoking periods during each day.

*Give yourself time to decide if you must smoke a particular cigarette. For example, wrap up your cigarette package with arubber band and paper, making the cigarettes hard to get at. This will give you an extra moment to decide if you truly want a cigarette. Put your cigarettes in a difficult-to-reach spot.

*Create a no-smoking environment. Set up no-smoking areas in the bedroom or the car, at your desk, or in your hobby area.

(2) Changing Brands

(a) Locate your brand on the chart provided.

(b) Choose a brand with considerably lower tar content to smoke for the next three days.

- (c) Smoke the cigarettes with lower tar content for three days, but make sure that you do not increase the number of cigarettes per day.
- (d) After three days, change to an even lower tar brand.
- (e) Switching brands is most effective when combined with cutting down techniques.

(3) Further hints

- (a) Do not carry any cigarettes, but "bum" every one that you want to smoke.
- (b) Smoke cigarettes in unusual, awkard ways; for example, if you are right-handed, hold the cigarette in your left hand between the ring finger and the little finger.
- (c) Put a mark on the cigarette and do not smoke beyond it; slowly move the mark toward the end.
- (d) Record the number of cigarettes on a graph and display this graph in a noticeable place.
- (e) When you have an impulse to smoke, delay lighting the cigarette. You can start such a regimen with a delay of one minute and increase it to an hour.
- (f) Punch holes in the cigarette (the principle is somewhat similar to switching brands).

HELPFUL HINTS FOR STAYING OFF CIGARETTES

Immediately after your stop-smoking date you may experience withdrawal symptoms. Once the first withdrawal symptoms have subsides, you still will have to make an effort to control the habit of smoking. The fact is that you are used to smoking in many situations and lighting a cigarette in those situations is an almost automatic impulse. If you apply some of the techniques given, you will be more effective in staying off cigarettes.

(a) Remove all cigarettes and ashtrays from your home and work area.

(b) Make sure you get enough sleep each night.

- (c) Enlist the support of your friends and family. Tell them ahead of time what kind of support you will need. Do you want them to talk about it with you, or not mention it at all? Do you want smokers in your family or among your friends to abstain in your presence? Be a bit selfish about your needs at this time.
- (d) Cut down on your consumtpion of coffee and alcohol. Both of these activities may trigger the desire to smoke.
- (e) Leave the table immediately after each meal and carry out a preplanned activity such as taking a walk. You'll probably be craving a cigarette at this time, but the craving will pass.

(f) Chew sugarless gum or a piece of clove or ginger, or eat low-calorie candy or carrots and celery when you have the urge to smoke.

- (g) Drink plenty of water. This provides oral satisfaction and is healthful at any time. If you wish, substitute fruit juice, club soda, quinine water, or bouillon for water (and for coffee or alcohol).
- (h) Plan ahead to find ways to fill your extra time. You may find that you have one or two hours each day that you formerly used for smoking. Use the extra time to do something special for yourself.

(i) Eat many small light meals.

- (j) Plan to keep yourself busier than usual. Go to a movie, take brisk walks, visit a nonsmoking friend.
- (k) Brush your teeth and use mouthwash after each meal. This reduces the craving to smoke.
- (1) If you have had a favorite place to smoke, find a different place to relax.
- (m) You may feel edgy. This is caused by your withdrawal from nicotine. It takes about three days to get the nicotine out of your system. You may feel light-headed, drowsy, muddleheaded, or slightly disoriented. These, too, are expected symptoms and will disappear within a few days.
- (n) Practice deep breathing and relaxation exercises four or five times a day.

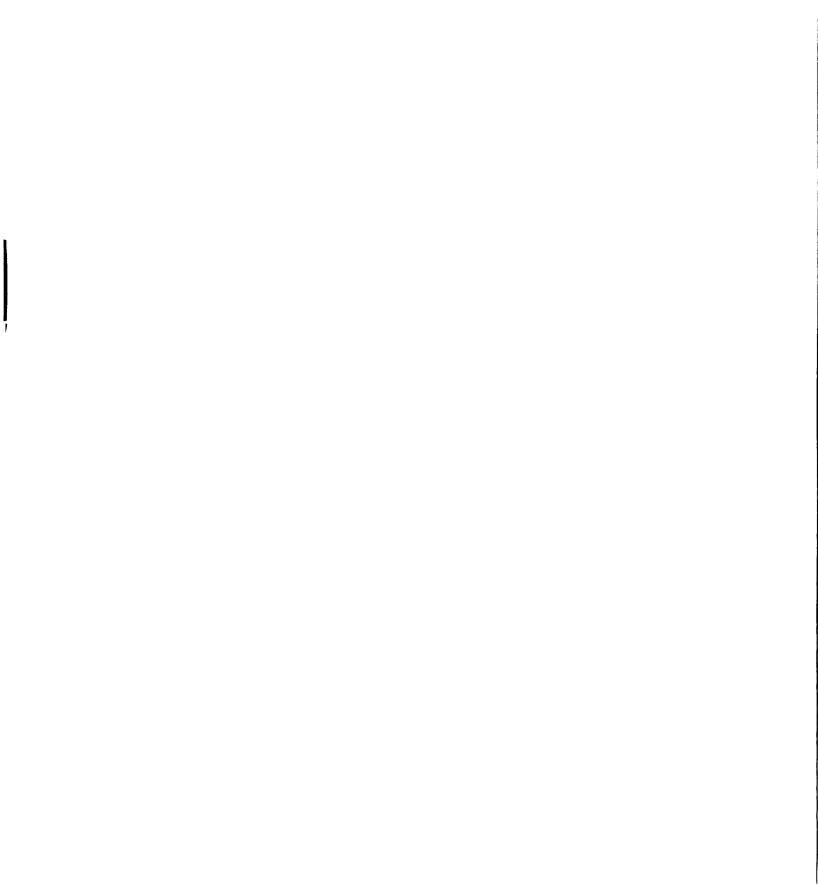
- (o) For some people, taking a multivitamin tablet once or twice a day is helpful when they are trying to quit. Perhaps it is a placebo, but some report benefits.
- (p) Keep raw carrots and celery at hand. When you have the urge to smoke, take several deep breaths. Avoid situations in which you feel particularly tempted to smoke. If you will be in a situation where temptation is high, plan ahead how you are going to cope with the temptation—in particular, how you will refuse a cigarette which is offered to you.
- (q) Spend as much time as possible in libraries, movies, and other places where smoke is forbidden.
- (r) Start an exercise program.
- (s) If you really feel sorry for yourself, call your teammates.

RULES AND PROCEDURES

- 1. Schedule. The actual duration of the smoking project will be six weeks. One session will occur weekly except for the third week when two sessions will take place. Seven sessions will take place over a six week period. The first two sessions will be spent helping participants reduce their smoking as painlessly as possible. Beginning the morning of the third session all participants stop smoking (if they have not already done so) and refrain from smoking for one month.
- 2. <u>Teams</u>. Participants will be assigned to five-member teams.
- 3. Group meetings. Participants will meet weekly for the six weeks of the program except for the third week when two meetings will occur. A total of seven meetings will occur over the six week program.
- 4. <u>Contracts</u>. All participants will be required to sign a contract stipulating that they will not smoke for the duration (one month) of the nonsmoking period. A minimum of five copies of that contract will be sent to family and friends of the participant.
- 5. Bond money. Each participant must post a \$40.00 bond to support their pledge not to smoke. All bond money will be placed in a savings account. The interest from this account will become part of the total sum of money distributed equally among members that have not smoked. If a person smokes, one-half of that person's money is deducted from their account and divided equally among those teams who have not smoked. Smoking incidents are always penalized by deducting one-half of whatever amount of money a person has in his/her personal account. At the end of the project, persons claim the money in their personal accounts.

6. <u>Social Support and Control Procedures</u>

- (a) Participants must agree to have copies of the contract stipulating their pledge not to smoke for the one month period mailed to a minimum of five persons (i.e., family, friends, and co-workers).
- (b) Participants must sign a legally binding agreement which authorizes the smoking project staff to determine whether or not a project rule has been broken and to communicate with persons previously identified by the participant to decide whether or not a rule has been broken. Participants must also sign a concent form.



(c) Participants must report a smoking incident to the staff between 8:00 a.m. and 5:00 p.m. on the day following the incident, or on Monday if the incident occurred on a weekend. One-half of the bond money will be distributed equally among members of teams that have not smoked during the same period. A participant who fails to report a smoking incident loses all bond money and is dropped from the project.

(Letter to Significant Other)

Dear :
is a participant in a Stop Smoking
Project at Michigan State University. In order to assure the success of the Project's procedures, it is necessary that you
be well informed with regard to current smoking habits. Enclosed is a signed contract which gives the Project permission to check with you about smoking habits
During the next four weeks, one of my assistants will call or
write you to ascertain this information. We will want to know if you have seen smoking during the week in question.
I would personally like to thank you and assure you that you are playing a significant role in helpingstop smoking.

Sincerely,

Richard J. Coelho, Director Stop Smoking Project

CONTRACT FOR DISTRIBUTION TO SUPPORT PERSONS

I,											am	deter	min	ed
to stop	smol	king.	То	that	end	, I	am	part	of	a t	eam	that	ha	s
pledged	not	to sm	oke	durin	g tl	he p	peri	od						
to					_• :	To l	nelp	me	keer	o my	ple	edge,	I	ask
that you	ı do	three	thi	ings:										
	(1)			age me speci					duri	ing	the			
	(2)	sta wri may	ff k	ate wi by res n inqu ve in	pond iry	ding abo	g to out	the any	ir t know	ele vled	phor ge 3	ne or you		
	(3)	spe	cifi	see m led ab smoki	ove	, p.	leās	e re	port	th:	at i	fact		
				S	igna	atu	re						_	
DATED:														

PROGRAM AGREEMENT

I,	, have elected
to participate in a smoking rese	earch project, the one page of
rules for which, dated	is attached hereto and
incorporated herein by reference	e. I hereby acknowledge that
I have read the rules, understan	nd them, and agree to abide by
them for the period of the proje	ect,1982
to1982. I also	acknowledge that the decision
as to whether or not I violated	a rule during the duration of
the project will be made by the	research project staff, spec-
ifically Richard Coelho,	
and	in their free and unfettered
discretion and I agree to abide	by their decision in all cases.
I further agree that the a	above-named members of the re-
search staff have my consent to	communicate with any and all
persons known to me in their eff	forts to decide whether I have
violated any rules.	
As witness my hand and sea	al, affixed thisday of
, 1982, in the	City of Lansing, State of Mich-
igan.	
	(SEAL)
Witness	Signature
Witness Address	
77 T T T T T T T T T T T T T T T T T T	

MY PERSONAL REASONS TO STOP SMOKING

There are many reasons to stop smoking. These tend to be personal. The broad groupings typically include social pressures to stop, health reasons, expense, the need to control one's personal behavior, and the desire to set a good example for others. Think about your personal reasons for wanting to quit at this time, and fill in the spaces below so you can make a permanent list. Make your reasons specific and in personal terms. For example, if one reason is to set a good example, write down the name of the person for whom you are setting an example. Or, if one of your reasons is for better health, specify the particular health risk that concerns you and state the improvements in your health that will occur when you stop smoking.

The list which follows is why Istop smoking.	want	to
1		
2		
3		
4		
5		
6		
7		
8		
9		
10.		

MY SMOKING SIGNALS

Once you have begun keeping track of your smoking, you will undoubtedly identify certain patterns in your smoking behavior. Is there something about the time of day in which you smoke more? Is there a place or activity that prompts your smoking? You will discover that certain situations in your lifestyle signal you with the desire to smoke. It is those situations which can lead you back to your old smoking behavior unless you develop a set of strategies to cope with the smoking urges when they arise. The action plan data sheet which follows lists a number of common smoking signal situations, along with alternative strategies to help control your smoking behavior. Decide how your urges relate to your smoking signals and then add your own signals as well as alternative strategies.

ALTERNATIVE STRATEGIES

SMOKING SIGNALS

	Examples:		
1.	While drinking coffee	a.	Drink a fruit juice or eat celery sticks
		b.	Leave cigaretts in an- other room
2.	While on the phone	a.	Do something with your hands, such as doodling on a piece of paper
		b.	Place cigarettes in a hard to reach place
3.	While watching TV	a.	·····
		b.	
4.	During an argument	a.	
		b.	
5.	While tense or anxious	a.	
		b.	

6.	After a meal	a.	
		b.	
7.		a.	
		b.	
8.		a.	
		b.	
9.		a.	
		b.	
10.		. a.	
		b.	
11.		. a.	
		b.	
12.		a .	
		b.	

How do your cigarettes stack up for tar, nicotine, and carbon monoxide?

		Carbos				Cartes	
	Nicetine	Monezie		Ter	Nicotine	Mesesk	.
6)	(mg)	(mg)	Brand	(mg)	(mg)	(mg)	Brand
•	2.3	16	English Ovals (non-fitter, hard pk)	16	1.1	17	Martboro (hard pk.)
	1.8	26	Bull Durham	16	1.3	14	Benson & Hedges (hard pk.)
	1.7	20	Chesterfield* (non-filter)	16	1.0	16	Marlboro (hard pk.)
	1.7	20	Herbert Tareyton (non-filter)	16	1.1	17	Oasis* (menthol)
•	1.7	20	Fatima (non-fitter)	15	1.1	17	Benson & Hedges 100's (100 mm, hard p
5	1.7	17	Philip Morris Commander (non-filter)	15	1.2	19	Kool (menthol)
	1.6	19	Old Gold Straight (non-filter)	15	1.2	18	Newport (menthol, hard pk.)
	1.9	18	Camel* (reg., non-fitter)	15	1.1	20	Viceroy (100 mm)
i	1.5	19	Players (reg., non-filter, hard pk) Pall Mall (non-filter)	15 15	1.1	18	Saratoga (120 mm, hard pk.)
	1.4	19	Raleigh (non-filter)	15	1.0	19	Raleigh
:	1.4	16		15	1.1	19	
3	13	19	Chesterfield* (reg., non-fitter) Lucky Strike (reg., non-fitter)	15	1.1	17	Kool (100 mm, menthol) Eve (100 mm)
	1.4	22	Picayune (reg., non-filter)	15	1.2	18	Tall (120 mm, menthol)
į	1.7	13	English Ovals (reg., non-filter, hard pky	15	1.0	17	L & M (hard pk.)
	1.7	26	More (120 mm)	15	1.0	16	Virginia Slims (100 mm)
	1.3	15	Piedmont (reg., non-filter)	15	1.1	17	Saratoga (120 mm, menthol, hard pk)
	1.5	14	Philip Morris (reg., non-fitter)	15	1.0	16	Alpine (menthol)
2	1.8	26	More (120 mm, menthol)	15	1.0	19	Viceroy
1	1.3	21	Home Run (reg., non-filter)	15	1.0	17	Chesterfield*
•	1.6	18	Half & Half*	15	1.1	16	St. Moritz* (100 mm)
0	1.6	23	Newport (100 mm, menthol)	15	1.1	16	Eve (100 mm, menthol)
•	1.4	21	Winston*	15	1.1	15	Kent Micronite II (100 mm)
•	1.5	20	Salem* (100 mm, menthol)	14	1.0	15	Mariboro (menthol, hard pk.)
•	1.4	21	Came!*	14	1.0	16	Virginia Slims (100 mm, menthol)
1	1.1	19	Spring 100's (100 mm, menthol)	14	1.2	18	Long Johns (120 mm, menthol)
	1.5	20	Old Gold 100's (100 mm)	14	1.0	19	DuMaurier (hard pk.)
•	1.4	20	Winston 100's* (100 mm)	14	1.2	15	Kent Micronite II (100 mm, menthol)
	1.1	15	Kool (reg., non-filter, menthol)	14	0.9	16	Mariboro (menthol)
•	1.5	19	Max (120 mm, menthol)	14	1.1	15	St. Moritz (100 mm. menthol)
1	1.3	18	Winston (hard pk)	14	1.0	17	Tareyton
•	1.2	20	Philip Morris International (100 mm.	14	1.1	18	Tareyton (100 mm)
			hard pk)	13	1.1	15	Eve (120 mm, hard pk)
	1.5	18	Max (120 mm)	13	1.1	12	Winston Lights* Silva Thins (100 mm)
	1.3	18	Winston (100 mm, menthol)	13	1.0	17	Winston Lights 100's (100 mm)
	1.1	19	Philip Morris International (100 mm:	12	1.0	14	Kent Micronite II
			menthol, hard pk)	12	0.0	12	Doral
	1.3	19	Pall Mall (100 mm)	12	1.0	15	Kool Milds 100's (100 mm, menthol)
	1.2	19	Lark* (100 mm)	12	1.0	13	Kent Micronite II (hard pk.)
	1.1	19	Pall Mail	12	1.0	16	Camel Long Lights (100 mm)
	1.3	19	Newport (menthol)	12	1.0	12	Eve (120 mm, menthol, hard pk.)
	1.3	19	Old Gold Filters	12	1.0	13	Pall Mall Lights (100 mm, menthol)
	1.3	19	Long Johns (120 mm)	12	0.9	12	Doral (menthol)
	1.3	21	Tall (120 mm)	12	0.8	13	Multifilter (menthol)
	1.1	18	L & M (100 mm, menthol)	12	0.9	14	Kool Milds* (menthol)
	1.2	19	Salem (menthol, hard pk.)	11	0.9	12	Parliament Light 100's (100 mm)
		18	Mariboro	11	0.9	11	Silva Thins (100 mm, menthol)
	1.1		Salem* (menthol)	11	0.9	13	Pall Mall Lights* (100 mm)
	1.0	18	Galaxy Chesterfield* (101 mm)	11	1.0	13	Salem Lights (100 mm, menthol)
	1.3	18		11	0.8	12	Multifilter
	1.1	20	Kool (menthol, hard pk) Raleigh (100 mm)	11	0.8	14	Marlboro Lights*
	1.1	17	Lark*	11	0.9	16	Vantage* (100 mm)
	1.1	18	Benson & Hedges 100's (100 mm)	11	0.9	14	Salem Lights* (menthol)
	1.1	18	Mariboro (100 mm)	11	0.8	15	Marlboro Lights (100 mm)
	1.1	18	Benson & Hedges 100's (100 mm.	10	8.0	17	Vantage*
	•.•		menthol, hard pk)	10			Vantage* (menthol)
		18		10	0.9	12	Camel Lights*
	1.2		Twist (100 mm, lemon/menthol)	10	0.8	13	Ment (100 mm, menthol)
	1.1	18	Benson & Hedges 100 s (100 mm, menthol)	10	0.8	13	Benson & Hedges Lights (100 mm.
	1.0	18	Montclair (menthol) L & M* (100 mm)	10	0.7	13	menthol) True (100 mm, menthol)

Unless noted all brands are King Size with filter

Corbon Tar Mice (mg) (mg) Newport Lights (menthol) Benson & Hedges Lights (100 mm) 10 0.3 12 14 12 10 10 0 0.8 0.9 0.7 0.7 0.8 0.7 0.8 0.8 0.8 Real Old Gold Lights 11 12 Merit (100 mm) Parliament Light Belair (menthol) True (100 mm) 11 10 11 10 American Lights (120 mm, menthol) Aspen (menthol) Real (menthol) Virginia Slims Lights* (100 mm, menthol, Virginia Silms Lights" (100 mm, meminos, hard pk.) Decade (100 mm) Golden Lights 100's (100 mm) Aspen (100 mm, menthol) Golden Lights 100's (100 mm, menthol) Kool International (100 mm, hard pk.) 10 10 11 ;; 11 Raleigh Lights Lucky Ten Arctic Lights (100 mm, menthol) Arctic Lights (100 mm, menthol) Kool Super Lights (100 mm, menthol) Parliament Light (hard pk.) Raleigh Lights 100's (100 mm) Virginia Slims Lights (100 mm, hard pk.) Viceroy Rich Lights Golden Lights Arctic Lights (menthol) Viceroy Rich Lights (100 mm) Belair (100 mm, menthol) L & M Lights (100 mm) Lark II Merit* American Lights (120 mm) 10 10 12 10 5 12 American Lights (120 mm)

Unless noted all brands are King Size with filter

		Carbon	
Ter	Micetine	Monecki	•
(=6)	(=6)	(mg)	Brand
-	0.7		L & M Lights
	0.7		Golden Lights (menthol)
ŧ	3.0		Lark Lights
7	0.6		Lark Lights 100 s (100 mm)
7	0.7		Brookwood (menthol)
7	0.5	11	Merit (menthol)
7	3.0	•	Kool Super Lights* (menthol)
7	2.0	•	Tareyton Long Lights* (100 mm)
7	0.6		Tareyton Lights*
7	0.6		Tempo
7	0.5 .		Pall Mall Extra Lights
ě	0.5	•	Vantage Ultra Lights
5	8.4	5	Doral II (menthol)
5	0.4	6	True (menthol)
•	0.4	•	True
5	0.4	4	Doral II
5	0.4	4	Decade
4	0.4	3	Decade (menthol)
4	0.5	?	Kent III (100 mm)
4	0.4	•	Carlton 109 s (100 mm)
4	0.4	•	Carlton 100's (100 mm, menthol)
3	0.3	5	Lucky 100's (100 mm)
3	0.3	5	Iceberg 100's (100 mm, menthol)
3	0.4	4	Triumph
3	0.3 0.4		Kent III
3	0.3	3	Triumph (menthol) Now
ź	0.2	;	
2	0.2	i	Now (menthol, hard plu)
2	0.2	i	Now (menthol)
í	0.2	i	Now (hard pk.) Tareyton Ultra Low Tar (menthol)
i	0.1	ż	Cariton*
i	0.1 0.1	í	Benson & Hedges (reg., hard plu
i	0.1 Q.1	i	Cariton (menthol)
<0.5	0.06	•	Cariton (menthol) Cariton (hard pk.)
~U.D	U.UU	4.3	Cariton (naro px.)

Federal Trade Commission, March 1981
The levels instité above nave been determined by standardized machine memoos and thy actual dosages the individual amoners may receive may very according to meri smoking hobits
(1) According to manufacturers, statements, these brands have been reformulated since the FTC samplings were completed in December 1979.

APPENDIX B

A.L.A. Program Outline

A.L.A.'s "FREEDOM FROM SMOKING" Clinica

Underlying Philosophy

This clinic program is based on the underlying premise that smoking is a learned habit—that individuals taught themselves how to smoke and practiced so well and so long that smoking became an automatic behavior for them, almost like breathing, eating or sleeping. Quitting, then, is a process during which individuals must consciously un-learn this automatic behavior of smoking and substitute in its place healthy, new alternatives.

The clinic offers individuals a step-by-step reduction plan to quitting smoking. It does not focus on scare tactics or offer a lot of statistical information. We assume that people who come to the clinic already know that smoking is dangerous to their health. Except for the first session which draws attention to health as a leading motivation to quit, the clinic focuses on how to quit smoking.

During the sessions, different techniques are introduced, based on psychological principles and methods that help the individual gain control over his or her behavior. This makes quitting smoking a less stressful experience, and offers a systematic approach to quitting. All the techniques, tips and tools are outlined in detail in this manual.

The clinic format encourages individuals to work on the process and problems of quitting smoking not only individually but as a group. Group interaction is an extremely important component of the program.

THE SESSIONS

- (1)-- Before smokers can take full, informed responsibility for their behavior and their own efforts to quit, it is crucial that they be involved in an in-depth discussion of the general health effects of smoking, as well as the individual implications for each person. This is done at the first session.
 - It is important to help smokers come to understand that (a) they can change their smoking behavior if they so choose; (b) help and encouragement is available in the program; and (c) quitting smoking is one of the best things they can do for themselves.
- (2)-- The second session focuses on motivation and conditioning and how people can quit smoking. A Plan of Action is introduced.
- (3)-- By the third session, each participant should make the personal commitment to quit smoking, and should do so publicly at the session. A panel of ex-smokers who relate their experiences and also interact with the group can provide a positive note to begin the first days of quitting.

- (4)-- The fourth session, 2 or 3 days after QUIT DAY, explores the transition involved in becoming a nonsmoker. The program focus is on the benefits of quitting, to set an upbeat tone to the remainder of the first week off cigarettes. Possible withdrawal symptoms are discussed. A relaxation exercise with a takehome tape ends the session.
- (5)-- The fifth session emphasizes launching a new lifestyle as a nonsmoker. It features additional activities that augment the decision to quit smoking, such as relaxation techniques, exercise or physical fitness programs, avoiding weight gain, and ways to stay quit.
- (6)-- At the sixth session, techniques to cope with tensions and urges to smoke are emphasized. The importance of continued maintenance is highlighted.
- (7)-- This session is a celebration or fun event, which could be a wine and cheese party, dinner at a restaurant, a champagne get-together or any event ex-smokers select to enjoy their new lifestyle. The issue of secondhand smoke is addressed. Awards are given to everyone who completes the program, and there is an evaluation and review of significant happenings of the last seven weeks.

A more detailed description of the clinic may be found in the "FREEDOM FROM SMOKING: GUIDE FOR CLINIC LEADERS," available from the American Lung Association (1740 Broadway, NY,NY 10019 or local chapters). The above summary was adapted from that manual.



A SMOKING CESSATION CLINIC

SCHEDULE OF SESSIONS

TO BE HELD AT: Ingham Medical Center -- Stanley Wing Auditorium

ESSION		DATE
	ORIENTATION	
1	ON THE ROAD TO FREEDOM • Setting the scene • Understand your habit: recording cigarettes • Health effects of smoking	May 13 7:00 p.m.
2	WANTING TO QUIT • "Why Do You Smoke" Test • Begin small groups and buddies • Triggers and coping skills— your plan of action	May 20 7:00 p.m.
3	QUIT NIGHT Reconfirming decision to quit Panel of ex-smokers Help and support; contracts and rewards Learn to assert yourself	May 27 7:00 p.m.
4	WINNING STRATEGIES • Withdrawal symptoms and benefits of quitting • 48-hour report • Relaxation skills	May 29 Time to be determined
5	THE NEW YOU Lifestyle changes Exercise and Weight Control Social situations Introduction of Maintenance Manual	June 3 7:00 p.m.
•	STAYING OFF • More relaxation and exercise • Coping strategies	June 10 7:00 p.m.
	LET'S CELEBRATE! • Lifestyle changes • New self-image • Evaluation of program • Graduation and celebration	June 17 7:00 p.m.

Sponsored by:

APPENDIX C

Administrative Agreements

CONSENT FORM

- I have freely consented to take part in a study on smoking cessation being conducted by Richard J. Coelho. I understand that the study involves the determination of the effectiveness of two stop smoking programs.
- 2. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.
- 3. I understand that I am free to discontinue my participation in the study at any time. However, if I do discontinue my participation I understand that the \$20.00 post dated check made out to a local charity will be sent to that organization and endorsed.
- 4. I agree to participate in the completion of questionnaires previously described to me, to be administered during the course of the study.
- 5. I understand that the results of the study will be treated in strict confidence. The names of participants in the study will be held confidential. Only group results will be reported; no identification of individuals will be made.
- 6. I understand that my participation in the study does not guarantee any beneficial results to me.
- 7. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

Signed:	Date:	
U		

ADMINISTRATIVE AGREEMENT

The following is a statement of cooperation between Richard J. Coelho, graduate student in Ecological Psychology and Karen Krzanowski, Program Coordinator, American Lung Association of Michigan. The research is being conducted to investigate different models of smoking cessation and their effect on the abstinence behavior of participants' in each model.

In order that the responsibilities of the individuals involved are understood, the following responsibilities of each individual are hereby agreed to:

ON THE PART OF THE PROGRAM COORDINATOR AT THE AMERICAN LUNG ASSOCIATION

- Allow Mr. Richard J. Coelho, graduate student in Ecological Psychology, to conduct a study of the two smoking cessation models as outlined in the document entitled "A Proposed Investigation of the Effectiveness of Three Package Stop-Smoking Programs."
- Agree to assist Mr. Coelho in the implementation of the study through the training of a community volunteer in the operation of your current smoking cessation clinic entitled "FREEDOM FROM SMOKING."
- Allow Mr. Coelho accessibility of posters, pamphlets, and any other educational materials needed in the facilitation of the FREEDOM FROM SMOKING clinic.

ON THE PART OF RICHARD J. COELHO, GRADUATE STUDENT IN ECOLOGICAL PSYCHOLOGY

- Agree to assume full responsibility for the design, implementation, analysis, and publication of the study as outlined in the above mentioned document.
- Agree to follow Michigan State University procedures for insuring the confidentiality of information from participants' in the study.
- Agree to make available all reports on research as they become available.
- 4. Agree to use the information collected from this research to meet doctoral dissertation requirements at Michigan State University.

Richard J. Koelho, Graduate

Student in Ecological

Psychology

Karen Krzanowski, American Lung Association of

Michigan

MICHIGAN STATE UNIVERSITY

UNIVERSITY COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS (UCRIHS) 238 ADMINISTRATION BUILDING (517) 355-2186 EAST LANSING . MICHIGAN . 48624

April 14, 1982

Mr. Richard J. Coelho Department of Psychology

Dear Mr. Coelho:

Subject: Proposal Entitled, "An Evaluation of Three Smoking Cessation Programs on Abstinence Behavior in the Community of Lansing"

I am pleased to advise that because of the nature of the proposed research, it was eligible for expedited review. This process has been completed, the rights and welfare of the human subjects appear to be adequately protected, and your project is therefore approved.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval prior to April 14, 1983.

Any changes in procedures involving human subjects must be reviewed by the UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

Henry E. Bredeck Chairman, UCRIHS

HEB/jms

cc: Dr. Redner

APPENDIX D

Recruitment Materials

DEPARTMENT OF PSYCHIATRY • EAST FEE HALL

EAST LANSING • MICHIGAN • 48824

April 12, 1982

Dear Reverend

I will be conducting a research study beginning the last week in April that test several program models to help motivated people stop smoking. The study has the support of the Pastor's Council of Greater Lansing and Vicinity and the American Lung Association of Michigan. And I am writing this to ask for your help in passing on this information to your congregation. I have enclosed several flyers which gives information for finding out more about the study. If you could include a note about my study in your church bulletin or in some way inform the members of your church and perhaps post these announcements in a readily accessible location, I would be most appreciative.

I feel that this study is especially important since it can directly help people, but it will not be an effective study unless a large number of smokers volunteer. If you can in any way encourage those members of your congregation who are interested in stopping smoking to attend, you, too, will be making a significant contribution.

I thank you in advance for any help that you can give me.

Very sincerely,

Richard J. Coelho, Director

sought for research project 'Stop smoking' volunteers

Whether for health or wealth, smokers have an opportunity to join a new "stop smoking" program that not only could break a habit but help a doctoral student.

Richard Coelho, a Michigan State University graduate student, would like to sign up at least 60 volunteers who are adults and want to quit smoking. Each person participating would help Coelho

in his research for a doctoral degree at random in one of two stop-smoking meth-ods. Coelho wants to find out which PARTICIPANTS WOULD meet for

method is more effective. seven sessions during a six-week period.
Each session would be approximately 11/5, per hours, Coelho sald. He is asking each a participant to pay a \$20 fee which would to be refunded to anyone attending at least A Topercent of the session.

Each participant would be enrolled at

Coelho said his program has been approved through the university and is sponsored in part by the Pastor's Council of Greater Lansing and Vicinity and the Anyone interested in the program may phone Coelho at 393-1224. American Lung Association of Michigan.

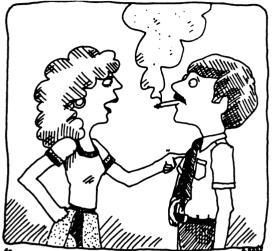
YOU PROBABLY WON'T STOP SMOKING ... on your own



Persons who want to stop smoking cigarettes are invited to participate in a stop smoking project sponsored by the Pastors Council of Greater Lansing and Vicinity and the American Lung Association of Michigan to be held in Lansing. While the primary focus of the project will be stopping smoking, the development of more generally healthful life-styles will also be addressed.

If you are interested in learning more about the project, return the bottom portion or Call 393-1224. You will be contacted and informed of the time and place of the introductory meeting. Persons attending that meeting will not be obligated in any way to participate in the project.

HOME	
	_
	_



WHAT DO YOU MEAN "YOU NOW SHOKERS DON'T KNOW WHAT YOU'RE MISSING? I KNOW WHAT I'M MISSING: LUNG CANCER, HEART DISEASE, EMPHYSEMA ..."

©1979

YOU PROBABLY WONT STOP SMOKING ... on your own.

Persons who want to stop smoking cigarettes are invited to participate in a stop smoking project sponsored by the Pastors Council of Greater Lansing and Vicinity and the American ‡ Lung Association of Michigan to held in Lansing. While the primary focus of the project will be stopping smoking, the development of more generally healthful life-styles will also be addressed.

If you are interested in learning more about the project, return the bottom portion or Call 393-1224. You will be contacted and informed of the time and place of the introductory meeting. Persons attending that meeting will not be obligated in any way to participate in the project.

Return To:	Name		
Richard Coelho Stop Smoking Project	Address		
Department of Psychiatry East Fee Hall, A233D Michigan State University	Phone:	Work	
East Lansing, MI 48824			

APPENDIX E

Scheduling of Treatments

Orientation Meetings May 3,4,5,6

Program:	IPP	ALA
Day:	Wednesday	Thursday
Time:	7:00 - 8:30 p.m.	7:00 - 8:30 p.m.
Place:	M.S.U. Clinical Center (East Lansing)	Ingham Medical Center (Lansing)
	1 10 1000	1 2 1000
Session:	1 May 12, 1982	1 May 13, 1982
	2 May 19	2 May 20
QUIT DAY	3 May 26	3 May 27
	4 May 28	4 May 29
	5 June 2	5 June 3
	6 June 9	6 June 10
	7 June 16	7 June 17

Follow-up:

One-month follow-up: July 14; 15 (M.S.U. East Fee Hall)

Three-month follow-up: September 8; 9 (M.S.U. East Fee Hall

APPENDIX F

Correspondence with Participants

DEPARTMENT OF PSYCHIATRY · EAST FEE HALL

EAST LANSING • MICHIGAN • 48824

Dear

Thank you for your interest in our stop smoking project. Due to the assignment procedures outlined during the introductory meeting, you have been assigned to the delayed program scheduled for this September. I will be contacting you in the near future to check on your smoking and give more details about the Fall program. If I can be of any help prior to the next program, please give me a call. We certainly hope you will be able to attend the next program.

Cordially,

Richard J. Coelho, Director

DEPARTMENT OF PSYCHIATRY • EAST FEE HALL

EAST LANSING • MICHIGAN 48824-1316

June 10, 1982

To Participants' in the Stop Smoking Project:

As you know, I am doing this research study to find out the effectiveness of two stop smoking programs. Although smoking cessation programs have been conducted by various organizations for many years, there is no reliable information on how effective they are or which kinds of people benefit from the group approach.

FAILURE TO REACH PEOPLE AT THE END OF THE PROGRAM AND AT FOLLOW-UP INTERVIEWS HAS BEEN THE MAIN WEAKNESS OF PRIOR STUDIES. THIS IS WHY YOUR PARTICIPATION IN THE END OF PROGRAM TWO FOLLOW-UP INTERVIEWS 1 AND 3 MONTHS AFTER THE PROGRAM ENDS....IS SO IMPORTANT.

I need your input to make any improvement so people in the future will also be helped.

I realize that circumstances may have prevented you from attending all the meetings. Regardless of the circumstances you are part of the study and I want to know what happens to you in the next three months. In other words I want to interview you:

EVEN IF YOU CAME TO ONLY ONE PROGRAM MEETING

EVEN IF YOU DIDN'T STOP SMOKING

Collo

EVEN IF YOU THOUGHT THE PROGRAM WAS NOT A HELP

Please make a special effort and attend the end of program interview. If your program met on <u>Wednesday</u>, come on <u>June 16</u> at 7:00 p.m. to the Michigan State University Clinical Center. If your program met on <u>Thursday</u>, come on <u>June 17</u> at 7:00 p.m. to Ingham Medical Center - Stanley Wing Auditorium.

If there are any circumstances which may prevent you from making this meeting, please give me a call at 393-1224. Thank you for your anticipated cooperation. I look foward to talking with you next week.

Sincerely.

Richard J. Coelho, Director

DEPARTMENT OF PSYCHIATRY · EAST FEE HALL

EAST LANSING • MICHIGAN • 48824

June 16, 1982

To Participants' in the Stop Smoking Project

As you know, I am doing this research study to find out the effectiveness of two different stop smoking programs. Although smoking cessation programs have been conducted for many years, there is no reliable information on how effective they are or which kinds of people benefit from the group approach.

FAILURE TO REACH PEOPLE AT FOLLOW-UP INTERVIEWS HAS BEEN THE MAIN WEAKNESS OF PRIOR STUDIES. THIS IS WHY YOUR PARTICIPATION IN THE TWO FOLLOW-UP INTERVIEWS 1 AND 3 MONTHS AFTER THE PROGRAM ENDS... IS SO IMPORTANT.

Here are the dates for the follow-up interviews. If you intend to be out of town during any of these times please make arrangements to leave a forwarding address or phone number with me so I can get a completed questionnaire from you.

Follow-up 1 July 14 or 15 Time: 7:00 p.m.

Rm. E 109, East Fee Hall, Michigan State University
(Same place where the introductory meeting was held)

Follow-up 2 September 8 or 9 Time: 7:00 p.m.

Rm. E 109, East Fee Hall, Michigan State University

. Collo

If there are any circumstances which may prevent you from making any of the follow-up interviews or if you need directions, please give me a call at 393-1224. I look forward to talking with you at the follow-up meetings.

Sincerely

Richard J. Coelho, Director

403 SEYMOUR AVENUE, LANSING, MICHIGAN 48914 • 517/484-4541

John C. Howell, PhD

Robert G. Smith

June 21, 1982

Dear

We just received your contribution of \$20.00 from Richard Coehlo, clinic leader, after your completion of the smoking withdrawal clinic our association co-sponsored with Michigan State University.

I am writing to thank you for the generous contribution and to wish you continued success in your efforts to stop smoking. It is not an easy habit to break, but you have obviously made great strides by attending the MSU/ALAM withdrawal clinic.

If we can be of additional help in the future, I hope you will call on us.

Sincerely,

Bolun Smith

Robert G. Smith Executive Director

/kjm

DEPARTMENT OF PSYCHIATRY • EAST FEE HALL

EAST LANSING • MICHIGAN 48824-1316

July 5, 1982

Dear Stop Smoking Project Participant:

As we approach the one month follow-up dates of July 14 or July 15, I would like to touch base with you again.

This follow-up interview will be shorter. The end of program interview was rather lengthy because I needed a lot of information about you and your impressions of your program.

In order to get valid results for this study, it depends on obtaining information from everyone. Even if you attended one or two sessions, or if you want to go through the Fall programs or someone else's stop smoking program again, and whether or not you've <u>quit smoking</u>. Sometimes the interviews may seem to be a bit repetitious but the only way I can find out if people change in smoking or anything else is to ask the same questions again.

Please come to Michigan State University, East Fee Hall, Room E 109 (same place where the introductory meeting was held) on <u>either</u> July 14 or July 15 at 7:00 p.m. During that time I will be going further into the two programs used in the study, their components, goals, etc.

Because of your cooperation, I have completed close to 100% of the end of program interviews.

I sincerely thank you for your cooperation. Please remember that if you have any questions, you may call me at 393-1224.

Sincerely.

Richard J. Coelho, Director

J. Collo

DEPARTMENT OF PSYCHIATRY • EAST FEE HALL

EAST LANSING • MICHIGAN 48824-1316

August 27, 1982

Dear Stop Smoking Project Participant:

As we approach the end of the Stop Smoking Project and the three month follow-up dates of September 8 or September 9, I would like to touch base with you again. As you know, this is the last interview to complete my research study. I would like to thank you for your participation and cooperation so far. This last follow-up interview will give me important information on the long term effectiveness of the stop smoking program you were assigned, so it's especially important for you to be there.

Please come to Michigan State University, East Fee Hall, room E 109 (where the introductory meeting and one month follow-up were held) on either September 8 or 9 at 7:00 p.m. The meeting will be short. I will answer further any questions about the two programs as well as making arrangements for the stop smoking programs to be offered later that month. Because many have asked for extended meetings, I will be organizing a maintenance support group for those who are interested. Please make a special effort to attend this important meeting.

Remember that if you have any special questions or concerns, you may call me at 393-1224.

Thank you and good luck.

Sincerely,

Richard J. Coelho, Director

lf. Collo

Stop Smoking Project

AMERICAN LUNG ASSOCIATION of Michigan The Christmas Seal People.

403 Seymour Avenue • Lansing, MI 48914 • 517/484-4541

Joseph F. Smith

President

Robert G. Smith

Executive Director

Hello:

Last spring you contacted me for help in kicking your smoking habit. As you know I was conducting a controlled study, as part of my doctoral dissertation, comparing several smoking cessation programs.

You were either placed in my "delayed group" or you were not able to participate due to scheduling conflicts, etc. I hope that you have made progress in your resolve to quit smoking! However, if you are not yet free of cigarettes, here is another opportunity to quit smoking.

The American Lung Association of Michigan is sponsoring a Freedom From Smoking Clinic beginning Thursday, November 4. This will be a seven-week, seven-session clinic. Each session will meet at 7:30 p.m. and will take $1\frac{1}{2}$ - 2 hours. The leader for this clinic will be Mrs. Toby Salzman, M.S.W. The fee is \$35.00.

A free orientation session will be held on Thursday, October 28 at 7:30 p.m., in the Stanley Wing Auditorium of Ingham Medical Center. There is free parking in the Visitors' Lot.

The Freedom From Smoking Clinic is a program intended for people who benefit from group support in their effort to quit smoking. The clinic emphasizes unlearning a habit and does not involve scare tactics. We will try to make quitting a less stressful experience and help you figure out better ways to cope with situations that ordinarily trigger your lighting up.

If you would like to participate in this clinic please call me prior to October 28. I can be reached between the hours of 9:00 a.m. and 1:00 p.m. at 393-1224. If you can't reach me, please call the American Lung Association at 484-4541 and leave a message.

If you are still smoking, I urge you to participate in this clinic. Be free of cigarettes by the holidays and give yourself and your loved ones the best gift of all!

Sincerely.

Pull Cells

APPENDIX G

Program Questionnaires

DATA COLLECTION SCHEDULE

	Pretest	Session One	Session Three	End of Program	One-Month Follow-up	Three-Month Follow-up
Demographic and Smoking History	×					
Why Do You Smoke Test	×					
Health Locus of Control	X			Х	X	Х
Confidence	X			X	X	Х
End of Program Questionnaire				X		
Large Group Atmosphere				X		
Small Group Atmosphere				×		
Program/Group Leader Expec- tancy		×				

DATA COLLECTION SCHEDULE CONT.

Three-Month Follow-up		X		Х		
One-Month Follow-up		Х	X			
End of Program	×	X			×	×
Session Three		×			×	
Session One		×			×	
Pretest		×				
	Satisfaction with Treatment/ Group Leader	Smoking Status	One-Month Follow-up	Three-Month Follow-up	Carbon Monoxide Level	Program Evaluation

SMOKING PROJECT QUESTIONNAIRE

The following is for the Stop Smoking Project purposes only and will be held in the strictest confidence. Please answer all questions as accurately as possible.

PLEASE PRINT

Name	
Last	First Initial
Address	City/Zip Code
Home Phone No. ()	Business ()
Date of Birth	
Please check the appropriate choice	ce when necessary.
1. Sex: 1. Male;	2. Female
2. What is your current age?	years
3. Your present weight?	lbs.
4. Race: 1. Black;	3. Hispanic;5. Other
2. Caucasian	(Pease specify4. Oriental;
5. What is your present marita	al status:
1. Single;	
2. Married;	4. Separated.
6. If you have children, how n	many do you have?
If none, please signify "0	No. of children
7. What is your religious aff:	iliation?
1. Protestant	5. Methodist
2. Jewish	6. Presbyterian
3. Catholic	7. Other (specify)
4. Baptist	8. None

8.	What is your present occupation? (Please specify)
9.	Which of these groups best describes your occupation? If you are retired,
· .	check your former occupation.
	1. Housewife
	2. Student
	3. Service worker, Laborer
	4. Factory workers, Machine Operator
	5. Craftsperson or Supervisor
	6. Clerical or Office
	7. Sales
	8. Managerial
	9. Professional or Technical
	10. Other
10.	What is the highest level of education you have attained?
	1. Grammer (1-6 years)
	2. Junior high school (7-9 years)
	3. Some high school (10-11 years)
	4. High school graduate (12 years)
	5. Some college/technical school (13-15 years)
	6. College graduate (16 years)
	7. Post-graduate (17+ years)
	SMOKING SECTION
11.	How many years have you been smoking cigarettes? No. of years
12.	On the average, how many cigarettes do you smoke each day?

13.	Approximately how many serious a none, please signify "0".	attempts to	stop smoking have you made?	If
	Number of attempts			
14.	If yes to Question 13, what's th	ne longest y	ou've been able to stop?	
	Number of days, weeks, mor	nths, etc.		
	What difficulties did you encour made you go back to smoking? Pl the following possibilities.			
	the following possibilities.	YES	<u>NO</u>	
15.	Irritability	1	2	
16.	Constant thoughts about or urges for a cigarette	1	2	
17.	Weight gain	1	2	
18.	Trouble staying awake	1	2	
19.	Trouble sleeping	1	2	
20.	Anxiety	1	2	
21.	Depression	1	2	
22.	Unable to concentrate	1	2	
23.	For how long have you been serioutime around? Please check appro			nis
	1. Less than one month		5. 6 months to 1 year	r
	2. About one month		6. 1 year to 5 years	
	3. 1 month to 2 months		7. More than 5 years	
	4. 3 months to 5 months			
24.	Name the brand of cigarettes that the brand if it is a filter cigarettes	at you curre arette; circ	ntly smoke. Circle "F" next le "M" if it is mentholated.	: t o
	Brand of cigarette	M		
25.	What size is that cigarette?			
	1. Regular; 2. Ki	ing size;	3. 100 mm; 4.	120mm.

26.	Do you smoke a pipe?1. Yes;	2.	No
27.	If yes to Question 26, how many pipe bo	owls do yo	u smoke daily? # of bowls
28.	Do you smoke cigars?1. Yes;	2	. No
29.	If yes to Question 28, how many cigars	s do you s	moke daily? # of cigars
30.	The following is a list of factors which reasons for quitting smoking. Please of your case.	_	
	1. Health	5.	Save money
	2. Family pressure	6.	Physical symptoms
	3. Social pressure	7.	Self-esteem
	4. No longer enjoy it	8.	None of the above
31.	How many smokers excluding yourself are	e there in	your home? # of smokers
32.	How many smokers excluding yourself are tion? # of smokers		your immediate work situa-
33.	What is your spouse's or mate's smoking	g status?	
	1. Never smoked	4.	Present smoker, not try- ing to quit.
	2. Ex-smoker	5.	Does not apply
	3. Present smoker, trying to quit		
34.	How much do you actually enjoy smoking	?	
	1. Strong love for smoking	3.	Like smoking
	2. Love smoking	4.	Strong dislike for smoking
35.	How motivated are you to quit smoking a	at this ti	me?
	1. Extremely strong desire to quit	3.	Some desire to quit
	2. Strong desire to quit	4.	No desire to quit

36.	How much trouble do you expect t	to have stopp	oing?
	1. None	3.	Extreme
	2. Moderate	4.	Very extreme
	HEALTH SECTION		
37.	If you have been told to stop so were most recently told? If you		
	Year		
38.	How is your general health?		
	1. Excellent		3. Fair
	2. Good		4. Poor
39.	Are you presently under the care	e of a physic	eian?1. Yes;2. No.
	If so, for what reason?		
		Please	e specify reason
	TOLERANCE SECTION		
40.	How soon after you wake up do yo	ou smoke your	first cigarette?
	1. Within 30 minutes		4. 1-1/2 hours to 2 hours
	2. 30 minutes to 1 hour		5. 2 hours to 3 hours
	3. 1 hour to 1-1/2 hours		6. More than 3 hours
41.	Do you find it difficult to refubidden, e.g. in church, at the		
	1. Yes2.	No	
42.	Which cigarette would you hate i	most to give	up?
	1. First cigarette in the	morning	
	2. Cigarette during or af	ter meals	
	3. Cigarette during or aft	ter stressful	situations

4. Ciga	rette during so	ocial situation	ns	
5. None	e of the above			
How many ciga	rettes a day do	you smoke?		
1. 1-10;	2. 11-2	20;3.	21-30;4.	31 or over
Do you smoke the day?	more frequently	during the mo	orning than dur	ing the rest of
	1. Yes		_2. No	
Do you inhale	e?1. Nev	ver;2.	Sometimes;	3. Always
			ect to receive se circle the a	from the people ppropriate re-
Spouse or hou	semates(s) (if	applicable)		
1 Extremely supportive	4 Supportive	Ambivalent	2 Not supportive	-
Your friends				
1 Extremely supportive	4 Supportive	3 Ambivalent		l Extremely unsupportive
People you wo	ork with (if ap	oplicable)		
l Extremely supportive	4 Supportive	3 Ambivalent	2 Not supportive	l Extremely unsupportive
			a special programme 1. Yes;	am or formal trea
				, and whether it ong you remained

EXPECTATIONS OF GROUP LEADER AND PROGRESS

Please complete the following scales, indicating your expectations based on what you know about your group leader and the Stop Smoking Program.

Agree Agree Agree Disagree Disagree Disagree I think this program is likely to help others to stop smoking. 1 2 3 4 5 6 Strongly Moderately Slightly Slightly Moderately Strongly	Pleasant	<u> </u>	::	_::	Unple	easant		
unhelpful Lacking in knowledge of subject matter on material Supportive and saring caring disinterested Excitable ::::::::::::::::::::::::::::::::::::	Valuable	;_	::_	_::_	Worth	less		
knowledge of subject matter	•	:	::	_::	Very helpful			
Excitable : : : : : : : Calm I think this program will help me to stop smoking. 1	knowledge of	.r:_	::	_::_				
I think this program will help me to stop smoking. 1	• •	.d:_	::	_::_	-	-		
1 2 3 4 5 Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Agree Disagree Disagree Disagree I think this program is likely to help others to stop smoking. 1 2 3 4 5 Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Disagree Disagree Disagree At the end of this program I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit 3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit 2. Be smoking at a reduced rate, but will not quit.	Excitable	<u>:_</u>	::_	_::	Calm			
Agree Agree Disagree Disagree Disagree I think this program is likely to help others to stop smoking. 1 2 3 4 5 6 Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Disagree Disagree Disagree At the end of this program I expect I will:	1	2	3	4	5	_		
I think this program is likely to help others to stop smoking. 1 2 3 4 5 6 Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Disagree Disagree Disagree Disagree At the end of this program I expect I will:	Strongly	Moderately	Slightly	Slightly	Moderately	Strongly		
1 2 3 4 5 6 Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Disagree Disagree Disagree At the end of this program I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit 3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit.	gree	ngree	ngree	Dibagree	Dibagice	Diougico		
Strongly Moderately Slightly Slightly Moderately Strongly Agree Agree Agree Disagree Disagree Disagree At the end of this program I expect I will:	I think this	program is l	likely to he	elp others to	stop smoking.			
Agree Agree Disagree Disagree Disagree At the end of this program I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit 3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit.			_	•		=		
At the end of this program I expect I will: 1. Still be smoking at the same level as I am now. 2. Be smoking at a reduced rate, but will not quit. 3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now. 2. Be smoking at a reduced rate, but will not quit.		_	•	• •	▼	Disagree		
2. Be smoking at a reduced rate, but will not quit. 3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now. 2. Be smoking at a reduced rate, but will not quit.			-					
3. Be a nonsmoker. Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now. 2. Be smoking at a reduced rate, but will not quit.			-					
Six months after this program ends I expect I will: 1. Still be smoking at the same level as I am now 2. Be smoking at a reduced rate, but will not quit.		•	reduced rat	e, but will	not quit.			
 Still be smoking at the same level as I am now. Be smoking at a reduced rate, but will not quit. 	3. Be a	nonsmoker.						
2. Be smoking at a reduced rate, but will not quit.	Six months af	ter this pro	ogram ends I	expect I wi	111:			
	1. Stil	1 be smoking	g at the sam	ne level as l	am now.			
3. Be a nonsmoker.	2. Be s	moking at a	reduced rat	e, but will	not quit.			
	3. Be a	nonsmoker.						

SATISFACTION WITH GROUP LEADER AND PROGRAM

Please complete the following scales, indicating how you perceived your group leader by putting a check above the appropriate place for each item.

My gro	oup leader was:					
1.	Pleasant	:_	::	_::_	Unple	asant
2.	Valuable	:_	::_	_::_	Worth	less
3.	Generally unhelpful	:_	::_	_::_	Very	helpful
4.	Lacking in knowledge of subject matter	:_	::	_::		informed terial
5.	Supportive and caring	:_	::	_ : :		portive and
6.	Excitable	: _	::	_::_	Calm	
7.	Very actively involved	:_	::_	_::	Passi volve	vely in-
8.	The program I to	ook part	in helped me	to stop smo	oking.	
	<u> </u>	2 lerately Agree	3 Slightly Agree	4 Slightly Disagree	5 Moderately Disagree	6 Strongly Disagree
9.	The program I to	ook part	in is likely	to help oth	ners to stop sm	oking.
	•	2 lerately Agree	3 Slightly Agree	4 Slightly Disagree	5 Moderately Disagree	6 Strongly Disagree
10.	At the end of the	ne Stop S	moking Progr	am I was:		
	1. Still s	moking t	he same as w	hen I began.	,	
	2. Smoking	at a re	duced rate,	but did not	quit.	
	3. A nons	oker.				
11.	Six months from	now I ex	pect I will:			
	1. Still b	e smokin	g at the sam	e level as v	when I began th	e program.
	2. Be smol	ing at a	reduced rat	e, but will	not quit.	
	3. Be a no	nsmoker.				
			•			
Name:				D -4		
ame .				Date:		

Confidence Scale

SMOKING SITUATIONS

Listed below are situations that lead some people to smoke. We would like to know:

A) How confident you would be that you would not smoke.

Please check the boxes that best describe your feelings in each situation.

Situation

How confident are you that you would not smoke in this situation?

	40.			,	
1. When alone and feeling depressed.					
2. When I am nervous.					
3. With friends at a party.	1				
4. Over coffee while talking and relaxing.					
5. With my spouse or a close friend who is smoking.					
6. At work when I am experiencing some pressure in my job.					
7. At a bar or cocktail lounge having a drink.			·		
8. When I wake up in the morning and face a tough day.					
9. When I am happy and celebrating.					

Situation

How confident are you that you would not smoke in this situation?

		1	2	3	4
	/•		Se Property of the Property of		
10. When I am bored and have nothing to do.					
11. When I would experience an emotional crisis, such as an accident or death in the family.					
12. When I see that I am gaining weight.					
13. When I am angry at someone close to me.					
14. When I am desiring a cigarette.					
15. When I am craving a cigarette.					
16. When I am extremely anxious and stressed.					
17. When I am frustrated about events in my life.					
18. When I am feeling warm and affectionate with my spouse/lover.					
19. When I am feeling accepted and close to someone.					
20. When I am very angry about something or someone.					
21. When things are just not going the way I want and I am frustrated.					
22. When there are arguments and conflicts with my family.	1				

Situation

How confident are you that you would not smoke in this situation?

	No. ALI	Lion S	derately .	A A A	S Alleger 14
23. When I see someone smoking and enjoying it.				·	
24. When I am in a social situation with a group of people I do not know well.					
25. When others around me are smoking at work.					
26. When I begin to let down on my concern about my health and am less physically active.					
27. When I am really missing the smoking habit and all that goes with it.	·				
28. When I want to test my control over cigarettes and smoke just one cigarette.					
29. When I realize that quitting smoking is an extremely difficult task for me.					
30. When I am extremely depressed.					
31. When I just don't give a darn about anything.					

NAME:		 	
DATE:			

This is a questionnaire to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from "strongly disagree" (1) to "strongly agree" (6). For each item you are to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, the lower will be the number you circle. Please circle only one number. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to answer every item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

9

	Strongly Disagree	FOUCTACETY DISAKIN	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree			
	1 2	2	3	4	5	6			
1.	If I get sick, it is my own behavior which determines how soon I get well again.		1	2		3	4	5	6
2.	No matter what I do, if I am going to get sick, I will get sick.		1	2		3	4	5	6
3.	Having regular contact with my physician is the best way for me to avoid illness.		1	2		3	4	5	6
4.	Most things that affect my health happen to me by accident.		1	2		3	4	5	6
5.	Whenever I don't feel well, I should consult a medically trained professional.	•	1	2		3	4	5	6
6.	I am in control of my health.		1	2		3	4	5	6
7.	My family has a lot to do with my becoming sick or staying healthy.		1	. 2		3	4	5	6
8.	When I get sick I am to blame.		1	2		3	4	5	6
9.	Luck plays a big part in determining how soon I will recover from an illness.		1	2		3	4	5	6

10.	Health professionals control my health.	1	2	3	4	5	6
11.	My good health is largely a matter of good fortune.	1	2	3	4	5	6
12.	The main thing which affects my health is what I myself do.	1	2	3	4	5	6
13.	If I take care of myself, I can avoid illness.	1	2	3	4	5	6
14.	When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
15.	No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
16.	If it's meant to be, I will stay healthy.	1	· 2	3	4	5	6
17.	If I take the right actions, I can stay healthy.	1	2	3	4	5	6
18.	Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

YOUR	NAME:_	
Today	y's Dat	:e

NAM	E:	DATE:
	your opinion about group. For each of phrases. Please pl	a number of questions in which you are to express your relationship to your "team" and the entire the following items, there are five descriptive ace a check mark in front of the one that best vior or attitude. Remember, select only one
1.	The amount of suppo	rt I received from my "team" is best described as
	12345.	None Hardly any support An average amount Quite a bit A great deal
2.	I feel that I respe	cted
	1. 2. 3. 4. 5.	None of my team members Only one other member of my team Only a few members of my team Everyone else in my team somewhat Everyone else in my team a lot
3.	If I was given the	opportunity to change to a different team, I would have
	$ \begin{array}{c} -1 \\ -2 \\ -3 \\ -4 \\ -5 \end{array} $	Wanted to change to another team immediately Had a slight preference for another team Not cared one way or another Had a slight preference for my team Very much wanted to remain a member of my team
4.	I enjoyed being wit	
	2. 3. 4.	Not at all Only slightly A little Quite a bit Very much
5.	I was interested in team was interested	the same things that most of the members in my in
	3. 4.	Hardly ever Rarely Once in a while Sometimes Most of the time

6.	I believe my team w	as
		The worst team One of the worst teams An average team A very good team The best team in the program
7.	I felt I could depe	nd on
	1. 2. 3. 4. 5.	None of the members of my team for support Only one or two team members Some of the team for support A few of the team members Other members of the team
8.	Considering my team	as a whole, I
	1. 2. 3. 4. 5.	Disliked everyone a lot Disliked them more than I liked them Neither liked nor disliked them Liked them quite a bit Liked them very much
9.	All the members in	my team cooperated with each other
		Never Rarely Sometimes Often Almost always
10.		ven adequate consideration during team meetings
	1. 2. 3. 4. 5.	Never Rarely Sometimes Often Almost Always
11.	How free did you fe	el to say what you thought during team discussions?
		Not at all free Slightly free Somewhat free Quite free Very free
12.	How receptive was y by different team m	our team to suggestions about solutions offered embers?
		Not at all receptive Slightly receptive Somewhat receptive Quite receptive Very receptive

The following questions refer to your relationship to the entire group (all teams together). Remember, select only <u>one</u> phrase.

13.	How satisfied were you with the general group discussions
	l. Not at all satisfied2. Slightly satisfied3. Somewhat satisfied4. Quite satisfied5. Very satisfied
14.	How free did you feel to say what you thought during group discussions?
	1. Not at all free2. Slightly free3. Somewhat free4. Quite free5. Very free
15.	How receptive was the entire group to suggestions about solutions offered by different participants?
	1. Not at all receptive2. Slightly receptive3. Somewhat receptive4. Quite receptive5. Very receptive
16.	Do you feel that your opinions were given adequate consideration during the general group discussions?
	1. Never2. Rarely3. Sometimes4. Often5. Almost always
17.	All the members of the entire group cooperated with each other
	1, Never2. Rarely3. Sometimes4. Often5. Almost always
18.	The amount of support I received from the entire group is best described as
	1. None2. Hardly any3. An average amount4. Quite a bit5. A great deal

19.	I enjoyed being with the entire group
	l. Not at all2. Only slightly3. A little4. Quite a bit5. Very much
20.	Degree to which the entire group payed attention to what was being discussed
	1. Never2. Rarely3. Sometimes4. Often5. Always
21.	Degree to which the entire group was able to express humor at appropriate times
	1. Never2. Rarely3. Sometimes4. Often5. Always
22.	Degree to which the entire group was serious about quitting
	l. Never2. Rarely3. Sometimes4. Often5. Always
23.	Degree to which there was a cooperative vs competitive social atmosphere. (Members shared goals and ideas in supporting one another as compared to attempting to hold back on information for one's personal gain).
	1. Never supportive of each other2. Rarely supportive of each other3. Sometimes supportive4. Often supportive5. Always supportive

PROGRAM EVALUATION

DID IT, WAS EX-TREMELY HELPFUL DID IT, WAS VERY HELPFUL Did you do each of the following activities while you were in the Stop Smoking Project (if yes) were they helpful to you? WAS MODER-DID IT, HELPFUL ATELY DID IT, WAS NOT VERY HELPFUL DID IT, WAS NOT HELPFUL AT ALL DIDN'T DO IT fects Can Go Up In Smoke" cigarette count Here are Teated Ideas for Quit-Read: "Drug Ef-Used the daily Read: "Want to ting the Smok-ing Habit" Read: "Calling Quit Smoking? Read: "Some It Quits" sheets Ways" NAME:

DID IT, WAS EX- TREMELY HELPFUL								
DID IT, WAS VERY HELPFUL								
DID IT, WAS MODER- ATELY HELPFUL								
DID IT, WAS NOT VERY HELPFUL								
DID IT, WAS NOT HELPFUL AT ALL								
DIDN'T DO IT								
00	Read: "Smoking and Teeth"	Read: "What Happens After You Quit"	Made: Coelho's Tension Reduct- ion milkshake	Read:"Smoking Withdrawal, Symptoms of Recovery"	Read:"Program Manual"	Filled out: "My Personal Reasons to Stop"	Filled out: "My Smoking Signals	Having to de- posit \$40

j								
DID IT, WAS EX- TREMELY HELPFUL								
DID IT, WAS VERY HELPFUL								
DID IT, WAS MODER- ATELY HELPFUL								
DID IT, WAS NOT VERY HELPFUL								
DID IT, WAS <u>NOT</u> HELPFUL AT ALL								
DIDN'T DO IT								
	Having to send out signed contracts	Having letter/ phone checks made to support persons	Watched Film: Is It Worth Your Life	Watched Film: Lets Call It Quits	Listened to the presentation on "Stress Reduct-ion"	Listened to the presentation on "Diet Control"	Listened to the presentation on "Smoking Heart and Lungs"	Participated in fitness present- ation

STOP SMOKING PROGRAM END OF PROGRAM QUESTIONNAIRE (2)

-	Last		First	Initial
ay y	our program met:	(Circle One)	Wednesday	Thursday
		mark in front of t Remember, select o		describes your
	I am now	1. a cigarett 2. an uncomfo 3. a somewhat 4. a comforta 5. an extreme	rtable nonsmoker comfortable non	SMOKEL
•	If you are sti smoking? If n	ll smoking cigaret one, please signif	tes, how many pe y "0".	r day are you presen
		cigarettes p	er day	
•	If you quit sm	oking, when did yo	u stop?	
		1. I am still 2. I quit aft 3. I quit on 4. I quit bef	smoking <u>er</u> the quit date the quit date <u>ore</u> the quit dat	e e
	If you quit, h	ow did you stop?		
		3. switched t 4. stopped al 5. cut down a	n daily cigarett o low tar/low ni l at once ("Cold nd switched bran	e intake cotine cigarettes Turkey") ds then "Cold Turkey" y)
	I now have	2. a fair amo	sire for a cigar unt of desire fo e for a cigarett	r a cigarette

6.	At this time, I feel I can
	l. definitely cannot control my cigarette urges
	 definitely cannot control my cigarette urges probably cannot control my cigarette urges somewhat control my cigarette urges control my cigarette urges totally control my cigarette urges
	5. totally control my digarette urges
7.	What have you decided to do about your cigarette smoking NOW?
	l. continue to smoke at my present level
	2. cut down some
	4. cut down an extreme amount
	2. cut down some 3. cut down quite a bit 4. cut down an extreme amount 5. quit (or continue to stay off cigarettes)
8.	What have you decided to do about your cigarette smoking DURING THE NEXT FEW MONTHS ?
	1. continue to smoke at my present level
	2. cut down some
	3. cut down quite a bit
	5. guit (or continue to stay off cigarettes)
9.	
	l. poor4. good2. unsatisfactory5. excellent3. satisfactory
	2. unsatisfactory5. excellent
	3. satisfactory
10.	In terms of the amount of difficulty I had in quitting, I would
10.	esv it was:
	1. very difficult4. easy5. very easy3. so-so
	2. difficult5. very easy
	3. so-so
	The state of the s
11.	Did you stop smoking while you were attending the Stop Smoking Program?
	1. No2. Yes
12.	Did you stop smoking while attending the Stop Smoking Program, but
	start smoking again before the program was over?
	1. No2. Yes
	If yes, how long were you off cigarettes before you started back?
13.	Have you had any cigarettes at all since the "quit" date?
	1. No2. Yes
	If yes, indicate the number of:oror
	cigarattes

14.	Have you	smoked any of	the following s	since the "quit'	date?
		Cigars	1. No	2. Yes	
			1. No		
		•			
15.	What is y	our current we			
			No. c	of pounds	
16.	Rate the while yo	amount of supp u were quittin	ort you receive g. (Please circ	d from the peop le appropriate	ole around you response)
	(a) SPOU	SE OR HOUSEMAT	E(S) (If Ap	plicable)	
	5	4	3	2	1
	extremely	4 supportive	ambivalent	2 not	extremely
	supportive			supportive	unsupportive
	(b) Your	FRIENDS			
	5	4	3	2	1
	extremely	4 supportive	ambivalent	not	l extremely
	supportive	••		supportive	unsupportive
	5 extremely	LE YOU WORK WI 4 supportive	TH (If Appl 3 ambivalent	2 not	l extremely
	supportive			supportive	unsupportive
17.	Do you th Stop Smok on your o	ing Program th	an it would hav	king with the he e been if you a	elp of the sttempted it
18.	I am	2. d 3. s 4. s	Program issatisfied wit omewhat satisfi atisfied with t	he Stop Smoking	ing Program p Smoking Program
19.	In genera	l, how helpful	was your progr	am in getting y	ou to quit?
		1. n	ot helpful		
		3. f	airly helpful		
		4. v	lightly helpful airly helpful ery helpful xtremely helpfu		
		5. e:	xtremely helpfu	.1	

20.	In general, how helpful was your program in helping you to stay quit?
21.	How much effort did you make towards quitting? l. I made no effort2. I made some effort3. I made quite a bit of an effort4. I made a strong effort5. I made an extremely strong effort
22.	How much effort did you make towards "staying quit"
23.	Would you recommend the Stop Smoking Program to someone who wanted to quit? 1. definitely would not2. would not3. probably would4. would5. definitely would
24.	Did you pay attention to the material that was discussed during the sessions you attended? 1. not at all2. some of the time3. most of the time4. almost all of the time5. all of the time
25.	Since I quit smoking cigarettes, I have 1. gained weight (indicate # of lbs)
26.	Did you do the homework assignments? 1. not at all2. some of the time3. most of the time4. almost all of the time5. all the time

	No. of Sessions
Since	coming to the Stop Smoking Program, I have (please check only one answer)
	l. continued to smoke at the same level
	when I sarted the program 2. reduced my cigarette intake fromto
	cigarettes per day
	3. been able to stop for a period of time before
	starting back again (please indicate period
	of time off cigarettes before you started again)
	4. quit
Please	indicate your present status in the program
	(please check only one answer)
	1. I have continued to smoke at the same level
	as when I started the program.
	I have reduced my daily cigarette intake
	3. I stopped on the quit date, but started to
	smoke again.
	4. I stopped on the quit date and have not smoked. 5. I stopped before the quit date, but started to
	smoke again.
	6. I stopped before the quit date and have not smoked
	7. I stopped during the program, started to smoke again and then quit.
One mo	nth from now, I expect I will:
	l. be smoking at the same level as when I
	began the program
	2. be smoking at a reduced rate, compared
	to what I smoked before the program 3. be a nonsmoker
•	FOR THOSE WHO ARE STILL SMOKING)
	as the primary reason that prevented you from stopping during rogram?

Progra
make :

THANK YOU FOR COMPLETING
THIS QUESTIONNAIRE

STOP SMOKING PROJECT ONE MONTH FOLLOW-UP QUESTIONNAIRE (3)

PLEA	ASE PRINT				
Name					
	Last		First		Initial
Addr	ess:			City/Zip:_	
	responses sin few words or There are three Everyone shound cigarettes per I & II only.	ply require sentences. ee sections ld completer day, ples If you are SECTION I &	e a check mar below, labe SECTION I. ase answer al smoking at a	k while ot lled SECTI If you are the ques l, then p	question. Some hers ask for a ON I, II and III. presently at "O" tions in SECTION lease answer the begins on page 3,
			SECTION I		
1.	I now have	2. a3. so4. a	great desire fair amount ome desire fo very small d osolutely no	of desire r a cigare esire for	for a cigarette tte a cigarette
2.	At this time	1. de 2. pr 3. so 4. co	finitely can	<u>t</u> control ol my ciga arette urg	es
3.	What is your Indicate the				No. of Pounds
4.	Since the Sto	1. ga 2. lo	_	(indicate ndicate #	# of lbs) of lbs)

5.	Rate the you, <u>sinc</u> response.	amount of suppethe program	ort you receiv ended. (Please	ed from the pe circle the ap	ople around propriate
	(A) SPOU	SE OR HOUSEMAT	E(S)	(If Applicab	le)
	5 extremely supportive	4 supportive	3 ambivalent	2 not supportive	l extremely unsupportive
	(B) Your	FRIENDS			
	5 extremely supportive	4 supportive	3 ambivalent	2 not supportive	l extremely unsupportive
	(C) PEOP	LE YOU WORK WI	тн	(If Applicab	le)
	5 extremely supportive	4 supportive	3 ambivalent	2 not supportive	l extremely unsupportive
6.	I am	2. d 3. s 4. s	Program issatisfied wi omewhat satisf atisfied with	th the Stop Smied with the Stop Smoki	top Smoking Program
7.		recommend the		Program to	
		2. w 3. p 4. w	efinitely woul ould <u>not</u> robably would ould efinitely woul		
8.	Two month	2. b	e smoking at t I began the pr e smoking at a	he same level	compared

***If you are not smoking, go to SECTION II

***If you are smoking, go to SECTION III

SECTION II

For those at "0" cigarettes per day

9.	I am now
	4. a comfortable nonsmoker
	5. an extremely comfortable nonsmoker
10.	In terms of the amount of difficulty I had in quitting smoking, I would say it was:
	l. verv difficult
	2. difficult
	3. so-so
	4. easy
	1. very difficult2. difficult3. so-so4. easy5. very easy
	Nove were had any advantable at all adman audition?
11.	Have you had any cigarettes at all since quitting?
	1. No2. Yes
1.2	The way has CUECTION 11 annual material when many did you have?
12.	If yes to QUESTION 11, approximately how many did you have?
	No. of Cigarettes
	The second control of
13.	If yes to QUESTION 11, please check the primary factor which best describes the circumstances under which you smoked.
	2. weight gain
	3. being around other smokers
	4. social situations (parties, meetings, etc.)
	5. routine pressure (e.g. work deadline, minor
	disagreement, etc.)
	6. extreme pressure (e.g. marital breakup, accident,
	death in family)
	7. other (please specify)
14.	When did you stop smoking?
	1. 4 weeks after the Stop Smoking Program ended
	2. 3 weeks after the Stop Smoking Program ended
	 2 weeks after the Stop Smoking Program ended
	4. 1 week after the Stop Smoking Program Ended
	2. 3 weeks after the Stop Smoking Program ended 3. 2 weeks after the Stop Smoking Program ended 4. 1 week after the Stop Smoking Program Ended 5. During the Stop Smoking Program

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

SECTION III

Only for those presently smoking

		Cigarettes/Day
How soon af	ter the program ended did you 1. I was smoking when 2. within 1 week 3. within 2 weeks 4. within 3 weeks 5. within 4 weeks	
	disagreement, etc	lling urges smokers (parties, meetings, etc.) (e.g. work deadline, minor :.) (e.g. marital breakup, acc
How could t	he program be changed to make	e it more effective for YO
If you mana	ge to "stay quit" for a reasc	unship period of time wou

STOP SMOKING PROJECT THREE MONTH FOLLOW-UP QUESTIONNAIRE (4)

PLEASE PRINT

Last	First	Inital
responses s	c the appropriate response for imply require a check mark whil r sentences.	each question. Some le others ask for a
Everyone she cigarettes I & II only questions in	nree sections below, labelled Sould complete SECTION I. If you ber day, please answer all the If you are smoking at all, the SECTION I & III only. SECTION III on page 6.	are presently at " questions in SECTIO nen please answer th
	SECTION I	
I now have	1. a great desire for a control of desire for absolutely no desire for a control of the control	re for a cigarette arette or a cigarette
At this time	l feel I can l. definitely cannot control2. probably cannot control3. somewhat control my cigarette con	rol my cigarette ur ol my cigarette urge igarette urges urges garette urges
-	current weight? number in pounds:	No. of Pound
Since the Sto	Smoking Program ended, I have1. gained weight (indicate2. lost weight (indicate3. remained the same	ate # of lbs)

	Cina the Cton Cookin	g Program ended, my alcohol consumption has
5.		
	1.	increased decreased remained the same I do not drink alcohol
		remained the same
	 4:	I do not drink alcohol
		
6.		with your personal life?
	1.	not satisfied slightly satisfied fairly satisfied very satisfied extremely satisfied
	2.	slightly satisfied
	3.	fairly satisfied
		very satisfied
		extremely satisfied
7.		with your work or other outside activity?
	1.	not satisfied slightly satisfied fairly satisfied very satisfied extremely satisfied
	2.	slightly satisfied
	3.	fairly satisfied
	 4·	very satisfied
		caticuty satisfies
8.	How often do you exer	cise outside of work?
	1.	never
		once every two weeks or less
	<u> </u>	2 to 3 times a week
	— <u>·</u>	once every two weeks or less once a week 2 to 3 times a week once a day
		•
9.	In general, how happy	are you most of the time?
	1.	very unhappy fairly unhappy neither fairly happy very happy
	2.	fairly unhappy
	—— ^v .	neither fairly happy
		very happy
		,,
10.	When the Stop Smoking	Program started, I made a commitment to
	myself to quit and st	ay off cigarettes?
	1.	No2. Yes
11.		to do about your cigarette smoking \underline{NOW} ?
	1.	continue to smoke at my present level
	2.	cut down some
	,	cut down an extreme amount
	 :	cut down some cut down quite a bit cut down an extreme amount quit (or continue to stay off cigarettes)
		1 (0. 00002000 00 000) 0 0-0000000/

12.	Since the	Stop Smoking Pro	ogram <u>ended</u> , I	have:	
		l. cont	inued to smoke	at the same lev	el
		as	when I started	the program	
		2. redu	ced my cigaret	te intake from	to
			arettes per da		
				for a period of	
		sta	irting back aga:	in (Please indic	ate the
		lor	igest period of	time you were o	ff cigarettes)
		4. qui	(or continue	d not to smoke)	
13.	Please ind	icate your prese (Please check or	ent status in th	he program	
					
				smoke at the s	ame level
			when I started		
		2. I re	educed my daily	cigarette intak	е
		3. I qu	it during the	program and have	not smoked
		4. I qu	it during the	program, but hav	e smoked
		son	e cigarettes		
		5. I qu	it during the	program, started	smoking,
			then quit aga		
				program, but sta	rted smoking
		aga	in		
		7. I aı	it after the p	rogram ended and	have
			smoked		
		8. I qu	it after the p	rogram ended, bu	t have had
		801	e cigarettes		
		9. I qu	it after the p	rogram ended, st	arted smoking,
			then quit aga:	in	
				rogram ended, bu	t started
		S TO C	king again		
14.	Rate the an	nount of support	you received	from the people	around you
	since the	program ended.	(Please circle	the appropriate	response)
	(A) SPOI	USE OR HOUSEMATI	E(S)	(If Applica	ble)
	5	4	3	2	1
е	xtremely	supportive	ambivalent	not	extremely
8	upportive			supportive	unsupportive
	(B) YOUI	R FRIENDS			
	5	4	3	2	1
٩		supportive	_	not	
	upportive			supportive	extremely unsupportive
				• •	• •

	(C) PEOI	PLE YOU WORK WI	I T H	(If Applicabl	e)
	5 xtremely upportive	4 supportive	3 ambivalent	2 not supportive	l extremely unsupportive
15.	Three month	1. be I 2. be	began the prog smoking at a r	same level as w	pared
			in the Americ #16 before goi	an Lung Assoc. S	top Smoking
	If you were #17 before		in the MONEY	Program, answer	question
16.	How many ti program en Have you li has ended?	mes have you maded?stened to yourYes	relaxation ta	dy" since the probable since the professince the profession of times	gram
17.	a "team me How many di How many ti program en	mber"? fferent member mes have you m ded?	s of your team	have you called have you called embers since the ere present?	?
	*** ***	go to SECT	not presently		

SECTION II

For those at "O" cigarettes per day

18.	I am nowl. an extremely uncomfortable nonsmoker
	2. an uncomfortable nonsmoker
	3. a somewhat comfortable nonsmoker 4. a comfortable nonsmoker
	4. a comfortable nonsmoker
	5. an extremely comfortable nonsmoker
19.	In terms of the amount of difficulty I have had in "Staying Quit," I would say it has been:
	1. very difficult2. difficult3. so-so4. easy5. very easy
	2, difficult
	3. so-so
	4. easy
	5. very easy
20.	Have you had any cigarettes at all within the last two months?
	1. No2. Yes
2.1	If MEC to OUECTION 20 convertentally how many did you have?
21.	If YES to QUESTION 20, approximately how many did you have?
	No. of Cigarettes
	No. of Cigarettes
22.	If YES to QUESTION 20, please check the primary factor which best
	describes the circumstances under which you smoked.
	1. difficulty controlling urges2. weight gain3. being around other smokers4. social situations (parties, meetings, etc.)5. routine pressure (e.g. work deadline, minor
	2. weight gain
	3. being around other amokers
	4. social situations (parties, meetings, etc.)
	5 routine pressure (e.g. work deadline, minor
	disagreement, etc.)
	6. extreme pressure (e.g. marital breakup, accident,
	death in family)
	7. other (please specify)
	/. Other (please specify)
23.	When did you stop smoking?
	1. between 9 & 12 weeks after the program ended 2. between 5 & 8 weeks after the program ended 3. between 3 & 4 weeks after the program ended 4. within 2 weeks after the program ended
	2. between 5 & 8 weeks after the program ended
	3. between 3 & 4 weeks after the program ended
	4. within 2 weeks after the program ended
	5. during the Stop Smoking Program

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

SECTION III Only for those presently smoking

24.	On the average, how many cigarettes are you currently smoking per day?	Cigarettes/Day
25.	Name the brand of cigarettes that you curren "F" next to the brand if it is a filtered ci "M" if it is mentholated.	tly smoke. Circle garette; circle
	Brand of your cigarette	М
26.	What size is your cigarette?	
	RegularKing Size	100 mm120 mm
27.	How soon after the program ended, did you st 1. I was smoking when the2. within 2 weeks after t3. between 3 & 4 weeks af4. between 5 & 8 weeks af5. between 9 & 12 weeks a	program ended
28	What was the primary factor that prevented y successfully quitting cigarettes? 1. difficulty controlling 2. weight gain 3. being around other smod 4. social situations (par routine pressure (e.g. disagreement, etc.) 6. extreme pressure (e.g. death in family) 7. other (Please specify)	urges kers ties, meetings, etc.) work deadline, minor marital breakup, accident,

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

WHY DO YOU SMOKE?

Here are some statements made by people to describe what they get out of smoking cigarettes. How often do you feel this way when smoking? Circle one number for each statement.

Important: ANSWER EVERY QUESTION.

		always	frequently	occasionally	seldom	never
A.	I smoke cigarettes in order to keep myself from slowing down.	3 5	4	3	2	1
B.	Handling a cigarette is part of the enjoyment of smoking it.	5	4	3	2	1
C.	Smoking cigarettes is pleasant and relaxing.	5	4	3	2	1
D.	I light up a cigarette when I feel angry about something.	5	4	3	2	1
Ē.	When I have run out of cigarettes I find it almost unbearable until I can get them.	5	4	3	. 2	1
F.	I smoke cigarettes automatically without even being aware of it.	5	4	3	2	1
G.	I smoke cigarettes to stimulate me, to perk myself up.	5	4	3	2	1
H.	Part of the enjoyment of smoking a cigarette comes from the steps I take to light up.	5	4	3	2	1
Ī.	I find cigarettes pleasurable.	5	4	3	2	1,
J.	When I feel uncomfortable or upset about something, I light up a cigarette.	5	4	3	2	. 1
K.	I am very much aware of the fact when I am not smoking a cigarette.	5	4	3	2	1
<u> </u>	I light up a cigarette without realizing I still have one burning in the ashtray.	5	. 4	3	2	1
M.	I smoke cigarettes to give me a 'lift'.	5	4	3	2	1
N.	When I smoke a cigarette, part of the enjoyment is watching the smoke as I exhale it.	5	4	3	2	1
Ō.	I want a cigarette most when I am comfortable and relaxed.	5	4	3	2	1
P.	When I feel 'blue' or want to take my mind off cares and worries, I smoke cigarettes.	d 5	4	3	2	1
Q.	I get a real gnawing hunger for a cigarette when I haven't smoked for a while.	5	4	3	2	1
R.	I've found a cigarette in my mouth and didn't remember putting it there.	5	4	3	2	1

1. Enter the number you have circled for each question in the spaces below, putting the number you have circled to question A over line A, to question B over line B, etc.

2. Add the 3 scores on each line to get your totals. For example, the sum of your scores over lines A, G, and M gives you your score on Stimulation – lines B, H, and N give the score on Handling, etc.

					Tota	ls
<u>A</u>	+	G	+	<u>M</u>		Stimulation
В	+	Н	+	N	/=	Handling
С	+	1	+	0	<u> </u>	Pleasurable Relaxation
D	+	J	+	P		Crutch: Tension Reduction
E	_ +	K	+	Q		Craving: Psychological Addiction
F	_ +	L	+	R	=	Habit

Scores can vary from 3 to 15. Any score 11 and above is high; any score 7 and below is low.

Carbon Monoxide Form

NAME:
ARE YOU STILL SMOKING CIGARETTES?
YESNO
HOW MANY CIGARETTES HAVE YOU HAD TODAY?
No. Cigarettes Today
WHEN DID YOU SMOKE YOUR LAST CIGARETTE?
Minutes Ago
Hours Ago
Days Ago
Weeks Ago
CO Level (ppm)
Today's Date:



BIBLIOGRAPHY

- American Lung Association. American Lung Association smoking cessation study, volume II: The clinic study--final report. Unpublished manuscript, New York, January 30, 1982.
- American Lung Association of Nassau-Suffolk. Results of four cigarette cessation clinics in Nassau and Suffolk counties, New York. East Meadow, NY, June 11, 1973.
- Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. <u>Psychological Review</u>, 1977, 84, 191-215.
- Berkowitz, D., Ross-Townsend, A., & Kohberger, R. Hypnotic treatment of smoking: The single treatment method revisited. American Journal of Psychiatry, 1979, 136, 83-85.
- Bernard, H.S., & Efran, J.S. Eliminating versus reducing using pocket timers. Behavior Research and Therapy, 1972, 10, 399-401.
- Bernstein, D.A. Modification of smoking behavior: An evaluative review. Psychological Bulletin, 1969, 71, 418-440.
- Bernstein, D.A., & McAlister, A. The modification of smoking behavior: Progress and problems. <u>Addictive Behaviors</u>, 1976, <u>1</u>, 89-102.
- Best, J.A. Tailoring smoking withdrawal procedures to personality and motivational differences. <u>Journal of Consulting and Clinical Psychology</u>, 1975, 43, 1-8.
- Best, J.A., Bass, F., & Owen, L.W. Mode of service delivery in a smoking cessation program for public health. <u>Canadian Journal of Public Health</u>, 1978, 68, 469-473.
- Best, J.A., & Hakstian, A.R. A situation specific model for smoking behavior. <u>Addictive Behaviors</u>, 1978, <u>3</u>, 79-92.
- Best, J.A., Owen, L.E., & Trentadue, B.L. Comparison of satiation and rapid smoking in self-managed smoking cessation. <u>Addictive Behaviors</u>, 1978, <u>3</u>, 71-78.
- Best, J.A., & Steffy, R.A. Smoking modification procedures for internal and external locus of control clients. <u>Canadian Journal of Behavioral Science</u>, 1975, 7, 155-165.

- Block, J. Issues, problems and pitfalls in assessing sex differences:
 A critical review of the psychology of sex differences.

 MerrillPalmer Quarterly, 1976, 22, 283-308.
- Bornstein, P.H., Carmody, T.P., Relinger, H., Zohn, J., Devine, D.A., & Bugge, I.D. Reduction of smoking behavior: A multivariable treatment package and the programming of response maintenance. Psychological Record, 1977, 27, 733-741.
- Brantmark, B., Ohlin, P., & Westling, H. Nicotine-containing chewing gum as an anti-smoking aid. <u>Psychopharmacologia</u>, 1973, <u>31</u>, 191-200.
- Brecher, R., & Brecher, E. <u>Smoking--the great dilemma</u>. (Public Affairs Pamphlet No. 361) New York: The Public Affairs Committee, 1964.
- Brockway, B.S., Kleinmann, G., Edelson, J., & Gruenwald, K. Non-aversive procedures and their effect on cigarette smoking. <u>Addictive</u> <u>Behaviors</u>, 1977, 2, 121-128.
- Burton, D. Consistency versus internality as initiators of behavior change. International Journal of the Addictions, 1977, 12, 553-563.
- Chapman, R., Smith, & Layden, T. Elimination of cigarette smoking by punishment and self-management training. Behavior Research and Therapy. 1971, 9, 255-264.
- Coelho, R.J. A cluster analytic investigation of an innovative smoking cessation program: The M.S.U. smoking project. Unpublished manuscript, Michigan State University, Department of Psychology, 1981.
- Condiotte, M.M., & Lichtenstein, E. Self-efficacy and relapse in smoking cessation programs. <u>Journal of Consulting and Clinical Psychology</u>, 1981, 49, 648-658.
- Craighead, W.E., & Mercatoris, M. Mentally retarded residents as paraprofessionals: A review. <u>American Journal of Mental</u> Deficiency, 1976, 78, 339-347.
- Cronbach, L.J. <u>Essentials of psychological testing</u>. New York: Harper & Row, 1970.
- Curtis, B., Simpson, D.D., & Cole, S.G. Rapid puffing as a treatment component of a community smoking program. <u>Journal of Community Psychology</u>, 1976, 4, 186-193.
- Danaher, B.G. Rapid smoking and self-control in the modification of smoking behavior. <u>Journal of Consulting and Clinical Psychology</u>, 1977, 45, 1068-1075.
- _____. Smoking cessation programs in occupational settings.
 Public Health Reports, 1980, 95, 149-157.

- Dawley, H.H., & Dillenkoffer, R.L. Letter to the editor: Minimizing the risks on rapid smoking treatment. <u>Journal of Behavior Therapy and Experimental Psychiatry</u>, 1975, 6, 174.
- DeClemente, C.C. Self-efficacy and smoking cessation maintenance: A preliminary report. <u>Cognitive Therapy and Research</u>, 1981, <u>5</u>, 175-187.
- Delahunt, J., & Curran, J.P. Effectiveness of negative practice and self-control techniques in the reduction of smoking behavior.

 <u>Journal of Consulting and Clinical Psychology</u>, 1976, 44, 1002-1007.
- Doll, R., & Peto, R. <u>The causes of cancer</u>. New York: Oxford University Press, 1981.
- Eisinger, R.A. Psychosocial predictors of smoking recidivism. Journal of Health and Social Behavior, 1971, 12, 355-362.
- Psychosocial predictors of smoking behavior change.
 Social Science and Medicine, 1972, 6, 137-144.
- Ejrup, B. A proposed medical regimen to stop smoking: The follow-up results. Swedish Cancer Society Yearbook, 1963, 3, 468-473.
- Elliott, C.H., & Denney, D.R. A multiple-component treatment approach to smoking reduction. <u>Journal of Consulting and Clinical Psychology</u>, 1978, <u>46</u>, 1330-1339.
- Elliott, R., & Tighe, T. Breaking the cigarette habit: Effects of a technique involving threatened loss of money. <u>Psychological</u> Record, 1968, 18, 503-513.
- Enstrom, J.E. Cancer mortality among low-risk population. <u>CA--A Cancer</u> Journal for Clinicians, 1979, 29, 352-361.
- Epstein, L.H., & Wing, R.R. Behavioral contracting: Health behaviors. Clinical Behavior Therapy Review, 1979, 1, 1-22.
- Fairweather, G.W., Sanders, D.H., Maynard, H., & Cressler, D.C.

 <u>Community life for the mentally ill</u>. Chicago: Aldine, 1969.
- Fairweather, G.W., Simon, R., Gebhard, M.E., Weingarten, E., Holland, J.L., Sanders, R., Stone, G.B., & Reahl, G.E. Relative effectiveness of psychotherapeutic programs: A multicriter in comparison of four programs for those different patient groups. Psychological Monographs, 1960, 74, no. 5.
- Fairweather, G.W., & Tornatzky, L.G. <u>Experimental methods for social</u> policy research. New York: Pergamon Press, 1977.

- Finney, J.W., & Moos, R.H. Treatment and outcome for empirical subtypes of alcoholic patients.

 Psychology, 1979, 47, 25-38.
- Flaxman, J. Quitting smoking now or later: Gradual, abrupt, immediate and delayed quitting. <u>Behavior Therapy</u>, 1978, <u>9</u>, 260-270.
- Foxx, R. Personality, social influence and cigarette smoking. <u>Journal of Health</u> and Social Behavior, 1973, 14, 279-286.
- Foxx, R.M., & Axelroth, E. Nicotine fading, self-monitoring and cigarette fading to produce cigarette abstinence or controlled smoking. Behavior Research and Therapy, 1983, 21, 17-21.
- Foxx, R.M., & Brown, R.A. Nicotine-fading and self-monitoring for cigarette abstinences or controlled smoking. <u>Journal of Applied</u> Behavior Analysis, 1979, 12, 111-125.
- Franks, C.M., Fried, R., & Ashem, B. An improved apparatus for the aversive conditioning of cigarette smokers. Behaviour Research and Therapy, 1966, 4, 301-308.
- Frederiksen, L.W., & Martin, J.E. Carbon monoxide and smoking behavior.

 <u>Addictive Behaviors</u>, 1979, 4, 21-30.
- Frederiksen, L.W., & McKinlay, T. <u>Self-control contracting vs.</u>
 commitment in the control of smoking behavior. Paper presented at the meeting of the Association for Advancement of Behavior Therapy, Chicago, November, 1978.
- Friedman, G.G., Seltzer, A.B., Siegelaub, R., Feldman, R., & Collen, M.F. Smoking among white, black and yellow men and women. <u>American Journal of Epidemiology</u>, 1972, 96, 23-35.
- Gallup Opinion Index. Public puffs on after years of warnings. Gallup Opinion Index (Report No. 108), 20-21, June, 1974.
- _____. Percentage of Americans who smoke lowest in 37 years. Gallup Opinion Index (Report No. 190), 2-17, July, 1981.
- Glasgow, R.E. Effects of a self-control manual, rapid smoking, and amount of therapist contact on smoking reduction. <u>Journal of Consulting and Clinical Psychology</u>, 1978, <u>46</u>, 1439-1447.
- Glasgow, R.E., Schafer, L., & O'Neill, H.K. Self-help books and amount of therapist contact in smoking cessation programs. <u>Journal of Consulting and Clinical Psychology</u>, 1981, <u>49</u>, 659-667.
- Grimaldi, K.E., & Lichtenstein, E. Hot, smoky air as an aversive stimulus in the treatment of smoking. Behavior Research and Therapy, 1969, 7, 275-282.

- Guilford, J.S. Group treatment versus individual initiative in the cessation of smoking. <u>Journal of Applied Psychology</u>, 1972, <u>56</u>, 162-167.
- Gutmann, M., & Marston, A. Problems of S's motivation in a behavioral programs for reduction of cigarette smoking. <u>Psychological Report</u>, 1967, 20, 1107-1114.
- Hamilton, S.B., & Bornstein, P.H. Broad-spectrum behavioral approach to smoking cessation: Effects of social support and paraprofessional training on the maintenance of treatment effects. <u>Journal of Consulting and Clinical Psychology</u>, 1979, 47, 598-600.
- Harris, D.E., & Lichtenstein, E. <u>Contribution of nonspecific social</u> variables to a successful behavioral treatment of smoking. Paper presented at the meeting of the Western Psychological Association, San Francisco, April, 1971.
- Harris, M.B., & Rothberg, C. A self-control approach to reducing smoking. <u>Psychological Reports</u>, 1972, <u>31</u>, 165-166.
- Hartman, J.J. Group cohesion and the regulation of self-esteem. In H. Kellerman (Ed.), <u>Group cohesion</u>. New York: Grune and Stratton, 1981.
- Hollingshead, A.B., & Redlich, F.C. <u>Social class and mental illness</u>. New York: Wiley, 1958.
- Horan, J.J., Hackett, G., & Linberg, S.E. Factors to consider when using expired air carbon monoxide in smoking assessment.

 Addictive Behaviors, 1978, 3, 25-28.
- Horan, J.J., Linberg, S.E., & Hackett, G. Nicotine poisoning and rapid smoking. <u>Journal of Consulting and Clinical Psychology</u>, 1977, 45, 344-347.
- Houpt, J.L., Orleans, C.J., George, L., & Brodie, H. The importance of mental health services to general health care. Ballinger, Cambridge, MA., 1979.
- Hunt, W.A., Barnett, L.W., & Branch, L.G. Relapse rates in addiction programs. <u>Journal of Clinical Psychology</u>, 1971, <u>27</u>, 455-456.
- Hunt, W.A., Bespalec, D.A. An evaluation of current methods of modifying smoking behavior. <u>Journal of Clinical Psychology</u>, 1974, 30, 431-438.
- Hunt, W.A., & Matarazzo, J.D. Three years later: Recent developments in the experimental modification of smoking behavior. <u>Journal of Abnormal Psychology</u>, 1973, 81, 107-114.

- Ikard, F.F., Green, D.E., Holn, D. A scale to differentiate between types of smoking as related to management of affect. <u>International</u> Journal of the Addictions, 1969, 4, 649-659.
- James, W.H., Woodruff, A.B., & Werner, W. Effect of internal and external control upon changes in smoking behavior. <u>Journal of Consulting Psychology</u>, 1965, 29, 184-186.
- Janis, I.L., & Hoffman, D. Facilitating effects of daily contact between partners who make a decision to cut down on smoking. <u>Journal of Personality and Social Psychology</u>, 1970, 17, 25-35.
- Janis, I.L., & Mann, L. Effectiveness of emotional role-playing in modifying smoking habits and attitudes. <u>Journal of Experimental</u> Research on Personality, 1965, 1, 84-90.
- Jeffreys, M., Norman-Taylor, M., & Griffiths, G. Longer-term results of an anti-smoking educational campaign. <u>Medical Officer</u>, 1967, 117, 93-95.
- Jones, R.H., Ellicott, M.F., Cadigan, J.B., & Gaensler, E.A. The relationship between alveolar and blood carbon monoxide concentrations during breath-holding. <u>Journal of Laboratory and Clinical</u> Medicine, 1958, 51, 553-564.
- Kanzler, M., Jaffe, J.H., & Zeidenberg, P. Long- and short-term effectiveness of a large-scale proprietary smoking cessation program--a four year follow-up of smokenders participants. Journal of Clinical Psychology, 1976, 32, 661-669.
- Katz, R.C., Heiman, N., & Gordon, S. Effects of two self-management approaches on cigarette smoking. <u>Addictive Behaviors</u>, 1977, <u>2</u>, 113-119.
- Keutzer, C. Behavior modification of smoking: The experimental investigation of diverse techniques. Behavior Research and Therapy, 1968, 6, 137-157.
- Keutzer, C.S., Lichtenstein, E., & Mees, H.L. Modification of smoking behavior: A review. Psychological Bulletin, 1968, 70, 520-533.
- Koenig, K.P., & Masters, J. Experimental treatment of habitual smoking. Behavior Research and Therapy, 1965, 3, 235-243.
- Lando, H.A. An objective check upon self-reported smoking levels: A preliminary report. Behavior Therapy, 1975, 6, 547-549.
- Serendipity revisited? Behavior Therapy, 1976, 7, 634-640.

- spectrum behavioral approach. Journal of Consulting and Clinical Psychology, 1977, 45, 361-366.
- _____. Stimulus control, rapid smoking and contractual management in the maintenance of nonsmoking. Behavior Therapy, 1978, 9, 962-963.
- Inexpensive methods for recruiting subjects to smoking cessation programs. Addictive Behaviors, 1982, 7, 79-81.
- Lawson, D.M., & May, R.B. Three procedures for the extinction of smoking behavior. Psychological Record, 1970, 20, 151-157.
- Levenberg, S.B., & Wagner, M.K. Smoking cessation: Long term irrelevance of mode of treatment. <u>Journal of Behavior Therapy and Experimental Psychiatry</u>, 1976, 7, 93-95.
- Leventhal, H., & Avis, N. Pleasure, addiction and habit: Factors in verbal report or factors in smoking behavior? <u>Journal of Abnormal Psychology</u>, 1976, 85, 478-488.
- Leventhal, H., & Cleary, P.D. The smoking problem: A review of the research and theory in behavioral risk modification. <u>Psychological Bulletin</u>, 1980, <u>88</u>, 370-405.
- Levin, D.L., Devesa, S.S., Godwin, D.J., & Silverman, D.T. <u>Cancer rates</u> and risks. U.S. Department of Health, Education and Welfare.

 DHEW Publication No. (NIH) 2nd Edition, 1974, 76-691.
- Lictenstein, E., & Danaher, B.G. Modification of smoking behavior: A critical analysis of theory, research and practice. In M. Hersen, R.M. Eisler, and P.M. Miller (Eds.), <u>Progress in behavior modification</u>, Vol. III. New York: Academic Press, 1976, pp. 141-192.
- Lichtenstein, E., & Glasgow, R.E. Rapid smoking: Side effects and safe-guards. <u>Journal of Consulting and Clinical Psychology</u>, 1977, <u>45</u>, 815-821.
- Lichtenstein, E., Harris, D.E., Birchler, G.R., Wahl, J.M., & Schmahl, D.P. Comparison of rapid smoking, warm smoky air, and attention placebo in the modification of smoking behavior. <u>Journal of Consulting and Clinical Psychology</u>, 1973, 40, 92-98.
- Lichtenstein, E., & Rodriguez, M.R.P. Long-term effects of rapid smoking treatment for dependent cigarette smokers. <u>Addictive Behaviors</u>, 1977, 2, 109-112.

- Luborsky, L., Chandler, M., Auerbach, A.H., Cohen, J., & Brachrach, H.M. Factors influencing the outcome of psychotherapy: A review of quantitative research. <u>Psychological Bulletin</u>, 1971, <u>75</u>, 145-185.
- Marston, A.R., & McFall, R.M. Comparison of behavior modification approaches to smoking reduction. <u>Journal of Consulting and Clinical Psychology</u>, 1971, 36, 153-162.
- Mausner, B. Some comments on the failure of behavior therapy as a technique for modifying cigarette smoking. <u>Journal of Consulting and Clinical</u> Psychology, 1971, 36, 167-170.
- McFall, R.M. Smoking-cessation research. <u>Journal of Consulting and Clinical Psychology</u>, 1978, 46, 703-712.
- McFall, R.M., & Hammen, C.L. Motivation, structure, and self-monitoring: Role of nonspecific factors in smoking reduction. <u>Journal of Consulting and Clinical Psychology</u>, 1971, 37, 80-86.
- Miller, L.D., Schilling, A.F., Logan, D.L., & Johnson, R.L. Potential hazards of rapid smoking as a technique for the modification of smoking behavior. New England Journal of Medicine, 1977, 297, 590-592.
- Nehemkis, A.M., & Lichtenstein, E. <u>Conjoint social reinforcement in</u>
 <u>the treatment of smoking</u>. Paper presented at the meeting of the
 Western Psychological Association, San Francisco, April, 1971.
- Ockene, J.K., Benfari, R.C., Nutall, R., Hurwitz, I., & Ockene, I.S. Relationship of psychosocial factors to smoking behavior change in an intervention program. Preventive Medicine, 1982, 11, 13-28.
- Ockene, J.K., Nutall, R., Benfari, R.C., Hurwitz, I., & Ockene, I.S. A psychosocial model of smoking cessation and maintenance of cessation. Preventive Medicine, 1981, 10, 623-638.
- O'Keefe, M.T. The anti-smoking commercials: A study of television's impact on behavior. Public Opinion Quarterly, 1971, 35, 242-248.
- Orleans, C.S., & Shipley, R.H. Worksite smoking cessation initiatives: Review and recommendations. Addictive Behaviors, 1982, 7, 1-16.
- Pederson, L.L., & Lefcoe, N.M. A psychological and behavioral comparison of ex-smokers and smokers. <u>Journal of Chronic Diseases</u>, 1976, <u>29</u>, 431-434.
- Pederson, L.L., Serimgeour, W.G., & Lefcoe, N.M. Comparison of hypnosis plus counseling, counseling alone, and hypnosis alone in a community service smoking withdrawal program. <u>Journal of Consulting</u> and Clinical Psychology, 1975, 43, 920.

- Pomerleau, O., Adkins, D., & Pertschur, M. Predictors of outcome and recidivism in smoking cessation treatment. <u>Addictive</u> Behaviors, 1978, 3, 65-70.
- Pomerleau, O.F., & Pomerleau, C.S. <u>Break the smoking habit: A behavior program for giving up cigarettes</u>. Champaign, IL.: Research Press, 1977.
- Poole, A.D., Sanson-Fisher, R.W., & German, G.A. The rapid-smoking technique: Therapeutic effectiveness. Behavior Research and Therapy, 1981, 19, 389-397.
- Powell, D.R., & McCann, B.S. The effects of a multiple treatment program and maintenance procedures on smoking cessation. Preventive Medicine, 1981, 10, 94-104.
- Pyke, S., Agnew, N.M., & Ropperad, J. Modification of an overlearned maladaptive response through relearning program: A pilot study on smoking. <u>Behavior Research and Therapy</u>, 1966, 4, 197-203.
- Pyszka, R.H. Ruggels, W.L., & Janowicz, L.M. Health behavior change: Smoking cessation. Stanford Research Institute, Menlo Park, CA., December, 1973. Mimeographed paper.
- Raw, M. Persuading people to stop smoking. <u>Behavioral Research and Therapy</u>, 1976, <u>4</u>, 97-101.
- Rotter, J.B. Generalized expectancies for internal versus external control of reinforcement. <u>Psychological Monographs</u>, 1966, <u>80</u>, (1, Whole No. 609).
- Russell, M.A.H. Smoking addiction: Some implications for cessation. (1979). In J.C. Schwartz (Ed.), <u>Progress in smoking cessation</u>. Proceeding of International Conference on Smoking Cessation. New York, American Cancer Society, 1978.
- Russell, M.A.H., Wilson, C., Feyerabend, C., & Cole, P.V. Effect of nicotine chewing gum in smoking behavior and as an aid to cigarette withdrawal. <u>British Medical Journal</u>, 1976, <u>2</u>, 391-393.
- Sachs, L.B., Bean, H., & Morrow, J.E. Comparison of smoking treatments.

 <u>Behavior Therapy</u>, 1970, <u>1</u>, 465-472.
- Sakoda, J.M., Cohen, B.H., & Beall, G. Test of significance for a series of statistical tests. <u>Psychological Bulletin</u>, 1954, <u>51</u>, 172-175.
- Scheffe. H. The analysis of variance. New York: Wiley, 1959.
- Schmahl, D.P., Lichtenstein, E. & Harris, D.E. Successful treatment of habitual smokers with warm, smoky air and rapid smoking. <u>Journal of Consulting and Clinical Psychology</u>, 1972, <u>38</u>, 105-111.

- Schwartz, J.L. A critical review and evaluation of smoking control methods. <u>Public Health Reports</u>, 1969, <u>84</u>, 483-506.
- Review and evaluation of methods of smoking cessation, <u>Public Health Reports</u>, 1979, <u>94</u>, 558-563.
- Schwartz, J.L., & Dubitzky, M. Expressed willingness of smokers to try 10 smoking withdrawal methods. <u>Public Health Reports</u>, 1967, 82, 855-861.
- . Requisites for success in smoking withdrawal. In A.F. Borgatta and R.R. Evans (Eds.), Smoking, health and behavior. Chicago: Aldine Publishing Company, 1968.
- Schwartz, J.L., & Ride, R.G. Review and evaluation of smoking control methods: The U.S. and Canada, 1969-1977. Atlanta: USDHEW, 1978, DHEW Publication No. (CDD) 78-8369.
- Scott, D., & Goldberg, H.L. The phenomenon of self perpetuation in Synanon-type drug treatment programs. Hospital and Community Psychiatry, 1973, 24, 231-233.
- Seltzer, A.P. Anti-smoking lozenge. <u>Journal of the National Medical Association</u>, 1975, <u>67</u>, 311-313.
- Shipley, R.H. Maintenance of smoking cessation: Effect of follow-up letters, smoking motivation, muscle tension, and health locus of control. <u>Journal of Consulting and Clinical Psychology</u>, 1981, <u>49</u>, 982-984.
- Spring, F.L., Sipich, J.F., Trimble, R.W., & Goeckner, D.J. Effects of contingency and noncontingency contracts in the context of a self control-oriented smoking modification program. Behavior Therapy, 1978, 9, 967-968.
- Stachnik, T.J., & Stoffelmayr, B.E. Is there a future for smoking cessation programs? <u>Journal of Community Health</u>, 1981, <u>7</u>, 47-56.
- Steffy, R.A., Meichenbaum, D., & Best, J.A. Adversive and cognitive factors in the modification of smoking behavior. Behavior Research and Therapy, 1970, 8, 115-125.
- Sterling, T.D., & Weinkam, J.J. Smoking patterns by occupation, industry, sex, and race. Archives of Environmental Health, 1978, 33, 313-317.
- Stone, G.C., Cohen, F., Adler, N.E., & Associates. <u>Health psychology A handbook</u>. San Francisco: Jossey-Bass, 1980.
- Straits, B.C., & Sechrest, L. Further support of some findings about the characteristics of smokers and nonsmokers. <u>Journal of Consulting and Clinical Psychology</u>, 1963, <u>27</u>, 282.

- Stunkard, A.J. The success of TOPS, a self-help group. <u>Post-Graduate</u> <u>Medicine</u>, 1972, <u>51</u>, 143-147.
- Suedfeld, P., & Ikard, F.F. Use of sentory deprivation of facilitating the reduction of cigarette smoking. <u>Journal of Consulting and Clinical Psychology</u>, 1974, 42, 888-895.
- Test, M.A., & Stein, L.I. Practical guidelines for the community treatment of markedly impaired patients. Community Mental Health Journal, 1976, 12, 72-82.
- Thune, C.E. Alcoholism and the archetypal past: A phenomenological perspective on Alcoholics Anonymous. <u>Journal of Studies on Alcohol</u>, 1977, 38, 75-88.
- Tighe, T.J., & Elliott, R. A technique for controlling behavior in natural life settings. <u>Journal of Applied Behavior Analysis</u>, 1968, 1, 263-266.
- Tongas, P.N. The Kaiser-Permanente smoking control program: Its purpose and implications for an HMO. <u>Professional Psychology</u>, 1979, 10, 409-418.
- Tryon, R.C., & Bailey, D.E. <u>Cluster analysis</u>. New York: McGraw-Hill, 1970.
- U.S. Department of Health, Education and Welfare. <u>The health consequences of smoking for women: A report of the surgeon general.</u> Washington, D.C.: U.S. Government Printing Office, 1980.
- . The smoking digest: Progress report on a nation kicking the habit. (NIH Publication No. 79-1549). Washington, D.C.: U.S. Government Printing Office, 1977.
- U.S. Department of Health and Human Services. The health consequences of smoking-cancer. A report of the surgeon general: 1982.

 (DHHS Publication No. PHS 82-50179). Washington, D.C.: U.S. Government Printing Office, 1982.
- . The changing cigarette: A report of the surgeon general. (DSSH Publication No. PHS 81-50156). Washington, D.C.: U.S. Government Printing Office, 1981.
- U.S. Public Health Service. Smoking and health: A report of the surgeon general. (DHEW Publication No. PHS 79-50066). Washington, D.C.: U.S. Government Printing Office, 1979.
- U.S. Department of Health, Education and Welfare. Adult use of tobacco, 1975. National Institutes of Health. Atlanta, GA., 1976.

- U.S. Public Health Service. <u>The health consequences of smoking: A report of the surgeon general, 1971.</u> (DHEW Publication No. HSM 71-7513). Washington, D.C.: U.S. Government Printing Office, 1971.
- . Smoking and health, report of the advisory committee to the surgeon general of the Public Health Service. (PHS Publication No. 1103). Washington, D.C.: U.S. Government Printing Office, 1964.
- Warner, K.E. The effects of the anti-smoking campaign on cigarette consumption. American Journal of Public Health, 1977, 67, 645-650.
- Weinrobe, P.A., & Lichtenstein, E. <u>The use of urges as termination</u> criterion in a rapid smoking program for habitual smokers. Paper presented at the Western Psychological Association, Sacramento, April, 1975.
- Whitman, T. Modification of chronic smoking behavior: A comparison of three approaches. <u>Behavior Research and Therapy</u>, 1969, <u>7</u>, 257-263.
- Whitman, T.L. Aversive control of smoking behavior in a group context.

 Behavior Research and Therapy, 1972, 10, 97-104.
- Winett, R.A. Parameters of deposit contracts in the modification of smoking. <u>Psychological Record</u>, 1973, <u>23</u>, 49-60.
- Wing, R.R., Epstein, L.H., Marcus, M., & Shapira, B. Strong monetary contingencies for weight loss during treatment and maintenance.

 <u>Behavior Therapy</u>, 1981, <u>12</u>, 702-710.
- Yalom, I. The theory and practice of group psychotherapy. New York: Basic Books, 1975.