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THE INFLUENCE OF GROUP COHESION ON THE BEHAVIORAL TREATMENT OF SMOKING

Iowa State University

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300 N. Zeeb Road, Ann Arbor, MI 48106
The influence of group cohesion on the behavioral treatment of smoking

by

Bruce Dennis Etringer

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

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INTRODUCTION

Usage of the term relationship is varied and its meaning is often ambiguous. No definition of the term enjoys a broad consensus and most definitions fall short on the criteria of specificity, precision, and simplicity. The factors designated as relationship variables are usually determined on the basis of expediency for the research endeavors of particular investigators. In general, however, the more useful definitions conceptualize the therapist-client relationship as a complex, reciprocally interacting system of behavioral and emotional engagements, of both a momentary and cumulative nature (Kiesler, Bernstein, & Anchin, Note 1; Moos & Clemens, 1967; Moos & MacIntosh, 1970; Vanderwell & Williams, 1974).

Despite the lack of conceptual clarity, Strupp (1973) asserted that all forms of therapy entail a significant human relationship. Many clinicians and researchers believe that the essential nature of the therapeutic influence is more or less encompassed by various relationship constructs and that a significant amount of change in all forms of therapy is attributable to these factors (Strupp, 1972, 1973). Strupp (1973) stated that to the degree good human relationships are present, change can be predicted to occur. Johnson and Matross (1977) concluded that a therapist's ability to influence a client is clearly related to the ongoing relationship. However, it was further noted that little research existed demonstrating causal relationships (Johnson & Matross, 1977).

Researchers do not mean to imply that relationship variables are
the only factors accounting for change (Garfield, 1973; Strupp, Fox, & Lesser, 1969). However, while each therapeutic orientation tends to emphasize aspects unique to that school as the potent or basic change factors, the "nonspecific" (e.g. relationship) variables operating in each might actually be accounting for much of the outcome (Woody, 1971). One of the most important variables mentioned was the relationship with a helping person, often with the participation of a group (Woody, 1971). There are indications that this may be true not only of verbal and insight oriented therapies, but also for behaviorally-based interventions (DeVoge & Beck, 1978; Kazdin & Hersen, 1980; Wilson & Evans, 1976, 1977; Wilson, Hannon, & Evans, 1968).

The Influence of the Therapeutic Relationship in Individual Psychotherapy

Many writers and researchers in the area of psychotherapy have focused on the numerous techniques and interventions implemented to produce some form of therapeutic change. Others have stated that therapy of almost all forms involves some sort of relationship between people and have asserted that factors directly associated with this phenomenon contribute significantly to therapeutic outcome. Frank (1982) noted that an emotionally charged, confiding relationship with a helping person was a therapeutic component shared by all forms of psychotherapy. Fiedler (1950) also argued that therapeutic relationships were not a function of theoretical allegiance. The importance of the relationship as a framework or base for facilitating therapeutic change has been emphasized repeatedly by writers of various theoretical
orientations (Bordin, 1974; Horwitz, 1974; Marmor, 1975, 1976; Strupp, 1975; Wilson & Evans, 1977). Indeed most therapeutic orientations do acknowledge the importance of a good relationship (Parloff, Waskow, & Wolfe, 1978).

Freud (1912) believed that a good therapeutic or working alliance was necessary before effective treatment could begin. The therapeutic alliance is the agreement or understanding wherein the client trusts the therapist to help him or her despite the frequency and/or irrationality of feelings and thoughts that arise. Freud (1912) hypothesized that this working alliance was based on the client's perception that the therapist was understanding and well-disposed toward him or her. He felt that the therapist should provide conditions whereby the client could experience warm and positive feelings toward the therapist, based on the grounds that such feelings produced successful outcomes not only in psychoanalysis, but in other remedial approaches as well.

In modern psychoanalysis, the importance of the relationship is still recognized. Boyer (1971) emphasized that the most important initial function of the therapist is to serve as a model, presenting the client with "a calm, patient, objective, implicitly optimistic attitude with which to identify . . . who treats every production of the patient, whether verbal or otherwise, as though it is important enough to heed" (p. 77). Through this modeling, the client learns to more objectively analyze his or her situation and establish a working alliance with the therapist.
The neo-Freudians also endorsed the importance of the therapeutic relationship in allowing the work of analysis to proceed (Alexander, 1948; Horney, 1950; Sullivan, 1953). Alexander (1948) believed that the relationship could serve two purposes. First, a good relationship served as a necessary precondition for developing insight and engaging in corrective emotional experiences. Second, a good therapeutic relationship could function as a curative factor in and of itself. Erik Erikson (1964) stressed that it was important for therapists to be themselves in counseling, i.e. to admit and respond humanly, and to use their humanness in their interactions with the clients.

In their review of existential approaches to therapy, Morse and Watson (1977) noted that existential therapy should be understood as a meeting between two individuals who optimally treat each other as equals in an interpersonal encounter. It is through this encounter that most of the work of therapy is accomplished. Fagen (1970) delineated a number of tasks that must be carried out by a Gestalt therapist. One of these is that the therapist must be willing to meet the client in a full human relationship.

Rogers (1957) conceptualized the relationship in terms of therapist offered conditions, asserting that communication of genuineness, unconditional positive regard, and empathy were not only necessary, but sufficient to produce positive therapeutic outcome. The therapeutic relationship was considered the most important factor in the process of change. Although early research appeared highly supportive of the "necessary and sufficient" conditions hypothesis (Truax & Mitchell,
1971), later reviewers concluded that a good human relationship based on genuineness, empathy, and warmth is probably necessary, although not sufficient for client change (Mitchell, Bozarth, & Krauft, 1977; Parloff et al., 1978).

Rather than conceptualizing the therapeutic relationship solely in terms of therapist offered conditions, some research to date has focused on mutual interactive factors of a good alliance. Unfortunately, the study of the interaction of therapist and client variables in relation to specific outcome criteria is rare (Orlinsky & Howard, 1978).

One fundamental component of a good, productive relationship seems to be that both the client and therapist like each other (Gomes-Schwartz, Hadley, & Strupp, 1978). In relationships marked by warmth, closeness, and a sense that the therapists were involved and cared about the clients, clients were more likely not to terminate prematurely (Fiester & Rudestam, 1975; Saltzman, Luetgert, Roth, Creaser, & Howard, 1976); to be satisfied with the ongoing therapy process (Orlinsky & Howard, 1978); and to show greater improvement (Bent, Putnam, & Kiesler, 1976; Saltzman et al., 1976). Thus, the relationship characterized by relaxed rapport and open communication was likely to promote continuation in therapy and better outcome (Saltzman et al., 1976).

Orlinsky and Howard (1978) separated both therapist and client perceptions in order to better analyze the ongoing relationship. Their overall impression was that in cases with better therapeutic outcome, therapists were active, warm, and respectful toward their clients. In these more successful cases, clients related to their therapists with
likeable, support-seeking yet assertive, interpersonal behavior. Clients, in successful cases, viewed themselves as accepting in relating to their therapists. They complemented their therapists' behaviors, stressing the affirmation and encouragement they perceived in their therapists' interpersonal behavior (Orlinsky & Howard, 1978). The therapeutic relationship was described as an intimate, warm, emotionally absorbing environment. Orlinsky and Howard (1978) stated that effective psychotherapy . . . is distinguished most consistently by the positive quality of the bond that develops . . . between its participants (whether) in a dyadic relationship or in a primary group. This personal contact is characterized by mutual comfortableness and trust, a lack of defensiveness on both sides . . . and by a strong and sensitive rapport. (p. 317)

Further, they concluded,

the studies done thus far suggest that the positive quality of the relational bond, as exemplified in the reciprocal interpersonal behavior of the participants, is more clearly related to patient improvement than are any of the particular treatment techniques used by therapists. (Orlinsky & Howard, 1978, p. 296)

These conclusions were based on studies of traditional verbal and insight oriented therapies. Behavior therapy interventions have not, for the most part, been systematically investigated with regard to therapeutic relationship variables. The following section will review the reasons for the neglect, as well as relevant studies that have been conducted to date.

**Relationship Variables in Behavior Therapy**

Strupp (1973) stated that there wasn't, and probably never would be, a purely technical intervention. He contended that no therapy
operates in the pure form that its theoretical framework implies and further, that the important variables in any therapeutic process include the type of relationship that develops as a result of the specific client-therapist interaction. However, Mahoney (1976) noted that in behavior therapy in general, a seeming aversion existed to such influences as relationship factors, despite the concession that the behaviors and cues associated with a therapist could affect outcome.

Recent reviews have noted that the role of interpersonal relationships has been almost excluded from investigations of behavioral interventions (Turkat & Forehand, 1980). Behavior therapists engaged in research typically ignore interpersonal skills and the therapist-client relationship when they report their work.

In contrast to experimental reports, however, the importance of the therapist-client relationship has been acknowledged in clinical or case reports. Lazarus (1958, 1960) recognized the ubiquitously and importance of interpersonal relationships and noted that trust and rapport were helpful in facilitating relaxation training. In addition, Wolpe (1958) reported his strong impression that clients who seemed to like him in early interviews showed improvement even before the application of behavioral treatments. In particular, he emphasized those behaviors that communicate that

all that the patient says is accepted without question or criticism. He is given the feeling that the therapist is unreservedly on his side ... as a natural outcome of a completely nonmoralizing objective approach to the behavior of human organisms. (Wolpe, 1958, p. 106)
Also, Eysenck (1959) suggested that while "personal relationships are not essential for cures of neurotic disorder . . . they may be useful in certain circumstances" (p. 67). Wolpe and Lazarus (1966) concurred by noting that close rapport between therapist and client was often necessary, although not sufficient, for effective treatment.

It appears that some degree of recognition of the importance of the therapist-client relationship has always existed, although not always explicitly (Parloff et al., 1978; Wilson et al., 1968). However, there is also a lack of agreement on the operational nature of the relationship and a paucity of evidence bearing on the critical factors involved (Ford, 1978; Wilson et al., 1968).

Recently, theorists have attempted to analyze or explicate the role or function of the therapist-client relationship. As a beginning, a number of investigators have reinterpreted more "traditional" forms of therapy according to behavioral models. Dollard and Miller (1950) reconceptualized dynamic therapy in learning theory terms. Murray and Jacobson (1978) hypothesized that insight and Rogerian therapies may be conceptualized in a cognitive learning/restructuring framework. For example, empathy may involve the therapist functioning as a surrogate information processor for the client. Nonjudgmental acceptance may engender a positive emotional response resulting in "nonspecific reciprocal inhibition" (Wolpe & Lazarus, 1966). The onset of certain stimuli such as warmth and acceptance may serve as safety signals eliciting the reduction of anxiety (Wilson et al., 1968), perhaps according to an implicit hierarchical desensitization process.
(Patterson, 1968). Martin (1971) defined the relationship as a counter conditioning agent in which, presumably, the behavior of the therapist has an effect on the client by providing a rewarding situation whose base is the Rogerian conditions of genuineness, respect, and unconditional positive regard. Rosen (1972) viewed a good relationship as a generalized secondary reinforcer.

Functionally, the therapeutic relationship has been viewed in several ways. As early as 1949, Shoben (1949) viewed a good relationship as a source of modeling and reinforcement of new behavior. Klein, Dittman, Parloff, and Gill (1969) felt that behavior therapists make use of the relationship to establish a context in which the specific behavioral techniques can be utilized most effectively. Similarly, Wachtel (1977) thought that the relationship enabled the client to more fully participate in the therapy process. Goldstein (1973) saw the relationship as a means of increasing the therapist's ability to influence the client toward therapeutic goals.

Patterson (1968) viewed the difference between relationship oriented therapy and behavior therapy as essentially one of emphasis. Kazdin and Hersen (1980) noted that the therapist-client relationship in behavior therapy and traditional forms of therapy may be difficult to distinguish. Assessing what behavior therapists do in treatment shows that they provide many of the therapeutic conditions considered to be important for client change in traditional psychotherapy (Kazdin & Hersen, 1980). For example, in a national survey of behavior therapists, Swan and McDonald (1978) found that 57% of the sample
used relationship enhancement methods in treatment. The most frequently employed set of techniques in practice were such enhancement methods as increasing therapist-client similarity, use of empathy, verbal reinforcement, structuring, and increasing positive expectancies (Swan, 1979). Sloane, Staples, Cristol, Yorkston, and Whipple (1975), in a carefully controlled clinical study, found that behavior therapists showed significantly higher levels of accurate empathy and congruence than did psychotherapists. Both showed equally high levels of warmth. Brunink and Schroeder (1979) conducted a process analysis in which behavior therapists were found to provide greater emotional support than analytic therapists, were more willing to assume a nondirective style of interaction, communicated empathy, maintained rapport, and provided a supportive relationship.

Marmor (1971) justifiably suggested that many behaviorists, at least according to data that were available, gave an oversimplified explanation for what occurs in therapy. Despite the emphasis on behavioral technology, the following findings seemed to occur consistently: relationship variables were always rated as very important to outcome by the client, no matter what the behavioral treatment; relationship variables were always rated significantly more useful than either behavioral or other psychotherapeutic techniques; and no significant differences emerged with respect to rated importance of relationship activities between behavior therapy and insight oriented therapies (Kiesler et al., Note 1; Klein et al., 1969).

Mitchell and his colleagues (1977) noted a number of flaws
in the above reports. Primarily, behavior therapy and behavior therapists were defined vaguely, and conclusions were based solely on retrospective self-report indices or compilations of case histories. They further hypothesized that clients may have implicated relationship factors as important change-producing agents due to their greater salience for clients based on past history (e.g. receiving help from a friend). Clients may be less likely to nominate techniques foreign to their past experience of receiving assistance.

Experimental studies on the influence of the therapeutic relationship have become increasingly sophisticated over the years. Cautela (1966) emphasized the facilitory effect of trust and rapport in his program for the treatment of pervasive anxiety. In a carefully evaluated clinical study, Staples, Sloane, Whipple, Cristol, and Yorkston (1976) found that for clinical outpatients who received various behavioral treatments, a clear trend emerged in which clients who perceived higher levels of nonpossessive warmth and accurate empathy evidenced more improvement than those who did not.

Rosenthal, Hung, and Kelley (1977) exposed snake phobic subjects to either a warm, accepting therapist or a cold, businesslike one. Overall, the researchers found clear indications that fear and avoidance can be modified by manipulating social influence, its timing, and also the client's perception of the therapist. Similarly, Morris and Suckerman (1974a, 1974b) demonstrated the importance of warmth as a factor in systematic desensitization. Specifically, subjects who underwent desensitization in a warm, accepting atmosphere
(soft, melodic pleasant voice) improved significantly more than subjects exposed to a cold atmosphere (harsh, impersonal, businesslike voice) on both behavioral and self-report measures of fear.

Ford (1978) indicated that the client's perception of the therapeutic relationship does seem to have value as a predictor of global improvement in behavior therapy, but questioned whether it is predictive of more behaviorally specific criteria. In a test of this hypothesis, he found that in behavioral assertion training the client's perception of the therapeutic relationship had value in predicting staying in therapy, making changes in assertive behavior, and improving self-perception. Therapist-client relationship was predictive of specific behavioral changes and of short-term, but not long-term, changes in behavior. In another clinically oriented study, Alexander, Barton, Schiaro, and Parsons (1976) found that relationship skills alone accounted for a significant amount (44.6%) of the variance in outcome in the behavioral treatment of families with delinquent children and that relationship variables interacted significantly with structuring behaviors to enhance treatment effectiveness. Significant differences emerged between good-outcome and poor-outcome therapists on the relationship dimensions.

Although research has demonstrated the importance of relationship variables (Wilson & Evans, 1977), other evidence has found that these factors are not sufficient in themselves to effect significant or long-term changes. The results of both Ford (1978) and Alexander et al. (1976) suggested that the effects of relationship skills on the part
of the therapist were most likely enhanced by a well-structured therapeutic agenda and operational framework. Wilson and Evans (1977) cautioned that it would be premature to think that therapeutic outcome can be attributed causally to social influence variables, although they do seem necessary for success. Mitchell et al. (1977) suggested, however, that the weight of the evidence indicates that relationship factors are generally operative in behavior therapy.

Group Cohesion

Relationship variables have also been investigated in group-based treatment formats. The concept of group cohesion is analogous to the construct of the therapeutic relationship in dyadic interventions (Bednar & Lawlis, 1971; Bednar, West, Evensen, Lanier, & Melnick, 1974; Yalom, 1975). Although a satisfying operational definition has yet to be developed, group cohesion is usually defined as feelings of interpersonal trust, attraction to, and involvement with the group (Bednar et al., 1974; Yalom, 1975). Group cohesion is a broad concept, encompassing the client's relationship to the group leader, to the other group members, and to the group as a whole (Yalom, 1975). Cohesion appears to develop from shared group experience (Bednar et al., 1974), and provides a feeling of safety, allowing meaningful self-exploration, the giving and receiving of feedback, and a feeling of being understood and accepted.

In 1971, Bednar and Lawlis reported that despite a lack of empirical evidence, considerable clinical sentiment existed that group cohesion was an important curative factor in group-based formats. Bednar
et al. (1974) reviewed a number of studies that attempted to manipulate cohesion and concluded that it is a factor essential to group treatment. Yalom (1975) asserted that group cohesion was not a curative factor per se, but a necessary precondition for change. He further noted that empirical evidence concerning the importance of group cohesion is rudimentary compared to the research documenting the importance of relationships in dyadic therapy.

Three studies attempted to assess the influence of cohesion in outpatient therapy groups (Dickoff & Lakin, 1963; Yalom, Houts, Zineberg, & Rand, 1967; Yalom, Tinklenberg & Gilula, 1975). All used retrospective self-report analyses of degree of improvement and perception of cohesion. The results uniformly implied that symptomatic improvement was related to group cohesion, and that clients rated cohesion as an important change-related variable.

Two studies examined the influence of cohesion in encounter or T-groups (Clark & Culbert, 1965; Lieberman, Yalom, & Miles, 1973). Degree of change on both an individual and group basis was positively related to perceived level of cohesion. Clark and Culbert (1965) found that subjects in highly cohesive groups were more self-aware (awareness of feelings, feeling-behavior incongruities, and manner of relating interpersonally) than members of low cohesive groups. Lieberman et al. (1973) obtained estimates of change along multiple dimensions from four sources: group members (e.g. self-esteem, degree of self-knowledge), group leaders (e.g. degree of openness, sensitivity, etc.), group members' acquaintances (e.g. manner of interpersonal
relating), and fellow group members (e.g. personal comfort, manner of relating). Perceived cohesion was related to degree of change according to these multiple criteria.

Cumulatively these findings, although few in number, indicate that cohesion can be a determinant of positive outcome. In addition to the above research, considerable indirect evidence stemming from research with other types of groups exists. In summary, it has been demonstrated that members of cohesive groups (a) try harder to influence other group members, (b) are more influenceable by other group members, (c) are more willing to listen to others, (d) participate more readily in meetings, (e) continue membership in groups longer, (f) adhere more to group norms and exert more pressure on individuals deviating from the norms, (g) place greater value on the group goals, and (h) are absent less often from group meetings (Bednar & Lawlis, 1971; Goldstein, Heller, & Sechrest, 1966).

Attempts to Increase Group Cohesion

A number of investigators have conducted experimental studies attempting to delineate factors that are conducive to increasing group cohesion. The factors investigated included: self-disclosure, feedback, pregrou p structuring, leadership style, and reinforcement. First, several reviews indicated that the level of self-disclosure of group members contributed to cohesion and intermember attraction (Kirchner, Dies, & Brown, 1978; Yalom, 1975). In an analogue study, Ribner (1974) utilized written contracts concerned with the definition and
practice of self-disclosure in his experimental groups. Cohesion was measured with a short self-report questionnaire concerning attraction to the group. The subjects in the contracted groups indicated a significantly greater attraction for their group than the noncontract groups and evidenced a significant increase in group cohesion. Kirshner et al. (1978) utilized contracts instructing subjects to engage in self-disclosure while engaged in interpersonal growth groups. The results indicated that self-disclosure produced perceived cohesion and that cohesion increased over time.

A second factor, feedback among group members, has also been investigated as a possible means to increase cohesion. Rose and Bednar (1980) found that the presence of feedback was significantly associated with higher levels of cohesion. Jacobs, Jacobs, Feldman, and Cavier (1973) found that the use of positive behavioral feedback did result in increased levels of cohesion in structured groups.

Third, a review by Bednar et al. (1974) indicated that the most important single factor having a positive effect on group interaction patterns was pretherapy training or structuring. A review by Bednar and Battersby (1976) also concluded that the appropriate use of structure, particularly in the early stages of group interaction, was a powerful means of influencing participants' attitudes and behaviors.

Bednar and Battersby (1976) attempted to determine the effects of three specific content-oriented structuring messages on early group development. They found that specific behavioral instructions
(telling participants what to do) were associated with greater feelings of group cohesion. In a similar study, Evensen and Bednar (1978) compared four types of pregroup structuring and found that behavioral structuring (practicing the desired behaviors) was the most potent condition influencing cohesion.

Very little formal, empirical research exists from behavior therapists dealing with group cohesion, despite Lazarus’ (1974) assertion that increasing cohesion in behavioral groups is an important facilitator of change. Hansen, Warner, and Smith (1976) and Krumboltz and Potter (1973) both listed a number of behaviorally based methods for increasing group cohesion, but unfortunately did not subject their suggestions to empirical testing. The methods focused mainly on verbal reinforcement and structured group exercises.

Finally, Liberman (1970) investigated the use of reinforcement and prompting of verbal behavior indicative of cohesion in outpatient group therapy of various personal problems. In the experimental group, the therapist was trained to use techniques of social reinforcement to facilitate the development of group cohesion. Cohesion included intermember behavior, mainly verbal behavior, that reflected recognition, interest, concern, sympathy, affection, assistance, and acceptance. In the comparison group, the therapist used a more conventional, intuitive, group-centered approach. The results indicated that the clients in the experimental group demonstrated significantly more cohesiveness and symptomatic improvement than those in the comparison group.
Measurement of Group Cohesion

In most of the research to date, the measurement of group cohesion has been idiosyncratic to different researchers or different studies and overall, psychometrically unsound. Bednar and Lawlis (1971) noted that most often cohesion is measured by short (4 or 5 items) face valid questionnaires. The construct of group cohesion has not been firmly established and cohesion has been defined in a number of vague fashions (e.g., a sense of "weness", attraction to the group, intermember liking, etc.). Fortunately, there have been advances in the measurement of group cohesion in recent years. Recently, several scales have been developed that are more psychometrically sound and empirically valid.

The Group Atmosphere Scale (GAS) (Silbergeld, Koenig, Manderscheid, Meeker, & Hornung, 1975) was designed to measure the perceived social atmosphere of outpatient therapy groups. The GAS is composed of 12 subscales, each containing 10 true or false statements about group behavior. Each subscale identifies a specific facet of the psychosocial environment of unstructured groups, namely: spontaneity, support, practicality, affiliation, order, insight, involvement, aggression, variety, clarity, submission, and autonomy. An additional 10 true or false items are also included to measure both a "halo" effect (exaggerated feelings toward the group) and to reveal inconsistency in taking the instrument (random responding, etc.).

A second measure developed by Barrett-Lennard (Note 2), the Relationship Inventory (RI) Form OS-G-64, is used in assessing an
individual's perception of the therapeutic conditions (empathy, genuineness, unconditional positive regard) presented by the group as a whole. The scale is composed of 64 items scored in a 5-point Likert format. As in dyadic therapy interventions, the client's perception of the therapeutic conditions offered by the group may be important in mediating behavior change (Bednar & Lawlis, 1971; Gurman, 1977). This hypothesis has received some support in studies of the effects of T-groups (Clark & Culbert, 1965; Clark, Culbert, & Bobele, 1969).

Another measure of cohesion, the Hill Interaction Matrix (HIM) (Hill, 1965), is a method of analyzing and categorizing the verbal productions of group members. In a 4 x 5 matrix format, statements of group members are divided into (a) content (topic, group, personal, relationship), and (b) work (responsive, conventional, assertive, speculative, confrontive) categories. Statements are rated on two categories simultaneously, resulting in 20 possible classifications. A less refined, yet still accurate, 2 x 2 matrix arrangement categorizes statements along: a member (personal, relationship) nonmember (topic, group) centered dimension, and a work (speculative, confrontive) prework (responsive, conventional, assertive) centered dimension. The dimensions may be labeled: A (nonmember-prework), B (member-prework), C (nonmember-work), and D (member-work). Categories A & B generally indicate that the verbal statements of members are not on topic and/or are not conducive to group interaction that would facilitate meeting the goals of the group. Categories C & D indicate
statements that are on topic and that goal-oriented group interaction is taking place. Succinctly, categories C and D are indicative of working, cohesive groups, while A and B are not.

A fourth questionnaire measuring cohesion was developed by Yalom and his colleagues (1967). They utilized this 11-item questionnaire to assess cohesion with five outpatient therapy groups. It was found that positive outcome in therapy correlated with scores on this instrument. The scale was adapted to an 8-item Likert format and used by Gregory, Etringer, and Lando (Note 3) in a pilot study with a smoking treatment group population. The scale assesses the importance of various factors in the group treatment of smoking (e.g. length of meetings, group support, feelings of inclusion, etc.). No reliability or validity data are available for this instrument.

A fifth measure of cohesion, the Comfortable Interpersonal Distance Scale (CIDS) of Duke and Nowicki (1972), has been used as a sociometric measure of interpersonal attraction among group members. This paper and pencil measure consists of a figural layout with a number of radii (equal to the number of group members minus one) emanating from a common center point. Each radius is the same length and is associated with a randomly numbered "entrance" to what is presented as an imaginary "round room". Typically, instructions ask the subjects to imagine themselves at the center point of the diagram (room); and to respond to their fellow members by approaching each of them along a different radius and making a mark on the radius
indicating where they would like each member to halt, i.e. where they would begin to feel uncomfortable with the closeness. Subjects' responses are scored as the distance between the mark on a specific radius and the center.

Finally, group attendance has been used as a behavioral measure of group cohesion (Yalom, 1975). Members of cohesive groups are more likely to attend group meetings as has been demonstrated in a number of studies (e.g., Bednar & Lawlis, 1971; Goldstein et al., 1966; Yalom, 1975).

Although most clinicians and researchers have accepted the importance of group cohesion (Bednar & Lawlis, 1971; Bednar et al., 1974) and recognized its functional similarity to dyadic therapeutic relationships (Yalom, 1975), little empirical evidence exists supporting the contention that level of cohesion is causally related to objective outcome criteria. Most conclusions in this area of research were based on retrospective self-report indices that were subject to a host of methodological problems and are of dubious validity and poor conceptual clarity.

To address these limitations, it was necessary to employ multiple outcome measures of cohesion that are both reliable and valid, and clear, objective measures of treatment outcome. The latter concern was addressed by choosing a discrete, objective behavior such as cigarette smoking. Cigarette smoking lends itself to analysis of this type as it is discrete, specific, and easily defined and measured.
Review of Smoking Literature

Beyond its methodological advantages, cigarette smoking was chosen for other reasons. Smoking is viewed by many as the number one health problem in the United States (Pechacek, 1979), and it appears to be the leading preventable cause of death. It is responsible for over 350,000 deaths yearly, due to various cardiovascular and pulmonary diseases, yet it has proven largely refractory to change efforts (Lando, 1980; Pechacek, 1979). If, as previously hypothesized (Lando, 1980), cohesion can increase the effectiveness of treatment efforts, it would have major implications for dealing with this important area of health psychology. This study went beyond previous efforts by manipulating and assessing the impact of "nonspecific" variables as opposed to specific treatment elements. An effort was made to analyze the basis for the effectiveness, or lack thereof, of treatments designed to eliminate smoking behavior. For these reasons, cigarette smoking was chosen as the behavior of interest by which to assess the effects of relationship variables in treatment. Various methods of eliminating smoking behavior will be briefly reviewed, along with studies of the impact of relationship factors on the treatment of smoking.

Nonbehavioral Treatments of Smoking

The major nonbehavioral interventions designed to deal with smoking include informational and educational campaigns, public and private clinics, drugs, and hypnosis. Along with an increase in
public awareness of the health consequences of smoking, it appeared that changes in patterns of smoking (i.e., switching to filter cigarettes, switching to lower tar and nicotine cigarettes) were largely attributable to information and educational campaigns (Pechacek, 1979). Although these campaigns appeared to have reduced overall consumption by 20 to 30% below 1975 levels (Warner, 1977), their direct effect on cessation efforts was uncertain (Bernstein, 1969; O'Keefe, 1971). Pechacek (1979) conducted a survey in which only 10% of ex-smokers credited mass media efforts with helping them stop.

A number of public service and proprietary clinics (e.g., 7th Day Adventist Five-Day Plan, American Cancer Society, Lung Association, SmokEnders) have been established in recent years. Specific treatment techniques vary considerably, but generally the clinics involved treating smokers in groups and providing some combination of: encouragement, group support, social pressure, health information, and techniques or suggestions for quitting. Such clinics have rarely been systematically investigated and have published little outcome data (Bernstein & McAlister, 1976; Schwartz & Rider, 1977). Reviewers have concluded long-term abstinence rates of public service and commercial programs were generally 15 to 20% (Pechacek, 1979; Schwartz & Rider, 1977).

Pharmacological interventions have been used by individuals for several years. The identification and use of pharmacological agents (e.g., lobeline, nicotine chewing gum) to substitute for nicotine intake or minimize physiological withdrawal effects remains of limited
value (Lando, 1980; Pechacek, 1979). However, most drugs were used in combination with other treatment procedures and their contribution to outcome cannot be unequivocally assessed. Overall, the usefulness of pharmacological agents has yet to be established, although they may have additive value in multicomponent cessation programs.

The final nonbehavioral intervention to be reviewed is hypnosis. Although hypnosis has been used as a smoking cessation technique for over 30 years, its effectiveness remains controversial (Pechacek, 1979). There are numerous case studies, but few of these reports actually stated whether clients were abstinent following treatment (Schwartz & Rider, 1977). Unsubstantiated abstinence claims of clinicians ranged from 42 to 86%, but actual long-term rates were closer to 20% (Pechacek, 1979).

Behavioral Treatments of Smoking

Behavioral approaches to smoking cessation, and more recently cessation maintenance, have become increasingly common and sophisticated in recent years. Most of the early research used techniques applied to other behavioral problems or derived from theoretical analyses of smoking, including: systematic desensitization (Koenig & Masters, 1965), covert operant conditioning (Homme, 1965), reinforcement procedures (Tooley & Pratt, 1967), and stimulus control (Levinson, Shapiro, Schwartz, & Tursky, 1971). Although this experimental, laboratory based approach proved minimally effective in producing long-term changes in smoking behavior, recent developments involving
multicomponent treatment packages (Boelens, 1980; Lando, 1976a, 1977; Pechacek, 1979; Schwartz & Rider, 1977) addressing both cessation and maintenance have been promising. The majority of research in this area can be divided into the overlapping categories of aversion strategies, self-management and self-control strategies, and multi-component packages.

Aversion Strategies. The most commonly used techniques in smoking cessation efforts have relied upon the use of aversive stimuli. Aversion procedures generally utilize either electric shock, covert sensitization, or cigarette smoke itself as the aversive stimulus. Numerous reviews (Bernstein, 1969; Bernstein & McAlister, 1976; Lando, 1980; Lichtenstein & Danaher, 1976; Pechacek, 1979; Schwartz & Rider, 1977) have concluded that the use of electric shock as an aversive stimulus is ineffective. Controlled experiments have failed to produce encouraging long-term results or even superiority over attention placebo controls. It is believed that this is due in large part to the discriminative capabilities of human beings, resulting in the lack of generalization of conditioning obtained in the laboratory (Lichtenstein & Keutzer, 1971). Bernstein and McAlister (1976) attributed the poor results to the procedure of shocking the overt behaviors associated with smoking and ignoring cognitions that precede, accompany, and follow overt smoking behaviors. Researchers utilizing electric shock in conjunction with covert imaginary or verbal cues note improved, but still discouraging results (Berecz, 1972; Steffy, Meichenbaum, & Best, 1970).
The second technique, covert sensitization, involves pairing actual or imagined smoking behavior with vivid, unpleasant images such as extreme nausea and vomiting. While case studies show promising results, controlled investigations have failed to produce either long-term abstinence or superiority over control groups or unaided cessation attempts (Bernstein & McAlister, 1976; Pechacek, 1979; Schwartz & Rider, 1977). It has been suggested, however, that covert sensitization may have value as a component in a multifactor or maintenance package (Lando, 1980).

Two procedures incorporate cigarette smoke as the aversive stimulus. Rapid smoking requires smokers to puff a cigarette every 6 seconds until they feel they are unable to continue. Two studies (Lichtenstein, Harris, Birchler, Wahl, & Schmahl, 1973; Schmahl, Lichtenstein, & Harris, 1972) obtained 60% abstinence at 6 months utilizing rapid smoking in conjunction with warm, smoky air blown in the face. Replication in other laboratories engendered variable, generally less favorable results (Danaher, 1977; Lando, 1975, 1976a), tempering statements as to the treatment's efficacy. Abstinence rates averaged 15 to 20% after 1 year (Pechacek, 1979). Lichtenstein and Rodrigues (1977) reported 34% abstinence at follow-ups of between 2 and 6 years, but of 33 subjects reporting abstinence, 20 had smoked at some point since treatment. Thus, the role of rapid smoking itself in producing abstinence is unclear. The efficacy of the technique is further clouded by the inclusion of a number of "nonspecific" treatment variables, including positive
expectancies, social support, and a warm, personal therapist-client relationship.

Satiation requires smokers to greatly increase their normal smoking rate, typically for one week. Presumably the reinforcing properties of smoking are greatly reduced or eliminated in this fashion, and the smoke eventually becomes an aversive stimulus. Although Resnick (1968) obtained a 60% abstinence at four months, replications of this initial study have proven much less efficacious (Bernstein & McAlister, 1976; Lando, 1980). Recent studies, however, have indicated that while satiation may be ineffective when used in isolation, combining it with other procedures in a multicomponent package can produce impressive results (Best, Owen, & Trentadue, 1978; Lando, 1977).

Self-control Techniques. The basic format of self-control treatments is to first, provide the smoker with an increased awareness of the target behavior and its controlling stimuli. Within this format, self-monitoring of smoking behavior is a fundamental element of virtually all self-control programs. As an independent treatment factor, self-monitoring has rarely produced more than temporary effects (Pechacek, 1979), and has been classified as a "nonspecific" treatment factor. However, it is widely used in multicomponent packages to obtain smoking baserates (e.g., Boelens, 1980; Lando, 1977).

Subsequently, specific self-management skills are taught to the clients to modify the frequency and/or topography of the smoking response. Many early reports utilized stimulus control procedures,
which are based on learning theory formulations that contend cessation is difficult because smoking is linked to a variety of environmental, cognitive, affective, and physiological cues. The aim of stimulus control procedures is to weaken or eliminate this linkage, or to bring smoking under the control of an external cue. Most studies have indicated that stimulus control techniques are at best, temporarily superior to control conditions (Lando, 1980; Lichtenstein & Danaher, 1976). The typical pattern of temporary reduction with rapid relapse and poor long-term maintenance has usually been observed (Pechacek, 1979). Although some researchers have concluded that stimulus control is of limited value even in multicomponent packages (Flaxman, 1978), others have contended that within a broad-based, systematic cognitive-behavioral training program implementations are encouraging (Blittner, Goldberg, & Merbaum, 1978).

Another self-management approach that has been investigated is contingency contracting. Contingency contracting requires an agreement that specific consequences will occur contingent on the attainment or nonattainment of behavioral goals. Specific time periods are outlined and the consequences are generally either monetary or require performance of designated tasks. Elliott and Tighe (1968) required monetary deposits which were to be returned contingent on abstinence and reported initial abstinence rates of 84%, and 36% abstinence at 15 and 17 month follow-ups. In a more carefully controlled study, Winett (1973) obtained 50% abstinence at six months. Murray and Hobbs (1981) found that contingent self-punishment or a combination of
contingent self-punishment and self-reinforcement produced moderate results at posttreatment and 3-month and 3-year follow-ups. Overall, contingency contracting does not appear to be effective when used in isolation (Lando, 1980), but in multicomponent treatment packages, it appears useful as an aid to maintenance of nonsmoking (Lando, 1977).

**Multicomponent Packages.** Recently, investigators have begun to evaluate treatment packages combining multiple techniques. The most effective programs to date have combined self-control strategies with an aversive component. Although the results have been mixed, the trend in reported outcomes has been encouraging. Brengelman (in Lichtenstein & Danaher, 1976) developed a program consisting of up to 37 procedures, and reported 58% abstinence at the 2-month follow-up. A treatment by mail approach resulted in an abstinence rate of 23% at the 6-month follow-up (Pechacek, 1979).

Although disappointing long-term abstinence rates were obtained, Conway (1977) found that the addition of self-management procedures significantly reduced smoking levels beyond aversive conditioning alone. Lando (1976a) found a similar initial effect for a contingency contracting procedure as a supplement to aversion. Elliott and Denney (1978) found that a package including rapid smoking, self-control strategies, covert sensitization, and systematic desensitization was significantly superior to rapid smoking alone at a 6-month follow-up.

Pomerleau, Adkins, and Pertschuk (1978) reported 61% initial abstinence rates and 32% abstinence at 1-year follow-up using stimulus control, contingency contracting, covert sensitization, and social
reinforcement. Lando (1977) obtained a 76% abstinence rate at 6-months utilizing satiation, contingency contracting, group support, and renewed aversion in the event of relapse. A satiation only group obtained a 35% 6-month abstinence rate. Morrow, Sachs, Gmender, and Burgess (Note 4) obtained a 1-year 46% abstinence rate combining rapid smoking with a number of self-control procedures. Delahunt and Curran (1976) found a multicomponent package superior to control conditions and to treatments utilizing individual components of the package. An analytic study of treatment packages by Flaxman (1978) indicated that these interventions are extremely complex and that the results obtained to date are the product of only partially understood variables. Clearly, more work needs to be done to determine which combination of treatment variables is the most effective.

Treatment Innovations. A recently investigated technique which could allow for either abstinence or controlled smoking involves nicotine fading (Foxx & Brown, 1979). In this procedure, smokers systematically change to lower tar and nicotine cigarettes over a 3-week period (typically in 30, 60, and 90% reduction increments) in a nonaversive technique designed to reduce withdrawal effects. Foxx and Brown (1979) reported a 40% abstinence rate at 6 months, and this rate held at a 30-month follow-up (Foxx, Brown, & Katz, 1981). Nonabstainers were smoking cigarettes lower in tar and nicotine than their pretreatment brands and 60% of those who had returned to smoking were smoking at a lower than baseline rate
at 30-month follow-up (Foxx et al., 1981). Lando (1980) obtained 3-month abstinence rates of 32% for nicotine fading, 37% for nicotine fading and a structured maintenance program, and 63% for a combination of nicotine fading and an aversive smoke-holding technique.

In summary, behavioral methodology in the treatment of smoking has become increasingly sophisticated and clinically relevant. Multi-component interventions combining aversive and self-control elements appear to be promising (Best et al., 1978; Lando, 1977). The initially impressive results of nicotine fading (Foxx & Brown, 1979) in conjunction with the apparently decreased health risks of this procedure (Prue, Martin, & Hume, 1980) argue for further investigation of this nonaversive intervention.

The focus to date in the treatment of smoking has been on developing effective intervention technologies. Especially since the advent of multifactor interventions (Lando, 1980; Pechacek, 1979; Schwartz & Rider, 1977) efforts have focused on increasing the potency of different combinations of techniques. This effort has resulted in increased treatment effectiveness (Lando, 1977; Pomerleau et al., 1978), but little understanding of the critical or salient variables accounting for the results (Flaxman, 1978).

One of the most important classes of variables in therapy research is the influence of interpersonal relationship factors (Frank, 1973; Strupp, 1973). In group-based formats the concept of group cohesion encompasses many of these relationship factors (Yalom, 1975). Researchers and theoreticians in the area of behavior therapy have not,
until recently, considered the impact of interpersonal relationship variables on behaviorally based interventions (DeVoge & Beck, 1978; Kazdin & Hersen, 1980; Wilson & Evans, 1977). In the treatment of smoking in particular, these variables have generally been considered only rarely (Harris & Lichtenstein, Note 5; Lichtenstein et al., 1973; Schmahl et al., 1972). The remainder of the review will focus on considerations of relationship variables in the treatment of smoking in particular. Several studies have been conducted examining the influence of nonspecific and relationship variables in aversive treatment formats.

In Resnick's (1968) study, using a satiation procedure, the subjects retrospectively attributed their success to processes other than satiation, although the validity of these attributions is questionable (Wilson & Evans, 1977). The most important factors appeared to be relationship variables. Bernstein (1970) compared a social pressure group to different placebo groups. In the social pressure groups, subjects made a commitment to themselves and to the group to quit, and engaged in group discussions and didactic sessions with a leader. He found that the subjects in the social pressure group were able to quit or significantly reduce smoking and at a 12-week follow-up the group average was 25% of baseline. In a replication, social pressure subjects were able to reduce smoking to 15% of baseline over a 6-week period.

Lichtenstein and his colleagues have recognized the importance
of interpersonal relationship variables in their rapid smoking treat-
ment. Schmahl et al. (1972) obtained a 57% abstinence rate at 6 months
utilizing rapid smoking with considerable emphasis on inducing positive
expectations, providing social reinforcement, and maximizing the
use of experimenter-subject relationship. They suggested that these
factors may have accounted for or contributed significantly to out-
come. In an earlier study, Harris and Lichtenstein (Note 5) kept the
aversive stimulation constant across groups while varying three social
or relationship factors. Half of the subjects received high levels
of verbal reinforcement, warmth and friendliness, and positive outcome
expectations. The other half were given little contingent social
reinforcement, were subjected to a research atmosphere, and were
given less favorable outcome expectations. Subjects given high levels
of social interaction and relationship enhancement variables were
quite-successful, while subjects in the barren social context were
significantly less successful, both at termination and follow-up.
Unfortunately, the influence of both contingent reinforcement and positive
expectations was confounded with the relationship variables.

Lichtenstein et al. (1973) found that an attention placebo group
evidenced similar initial results (complete abstinence) to three
groups that underwent aversive (rapid smoking) treatment. They did,
however, show considerably greater relapse rates during the follow-up
periods. Relationship variables were at enriched levels for all groups
and were cited by subjects as important variables. The suggestion
was that relationship or nonspecific components of the treatment were
of considerable importance in producing initial abstinence, but that other processes may be needed to maintain cessation. In an independent replication, Tongas (1978) compared rapid smoking in a friendly, positive atmosphere and in an atmosphere with no social reinforcing value. He found that the positive atmosphere group did better both at termination and follow-up.

Lichtenstein and Danaher (1976) and Bernstein and McAlister (1976) concluded that the interpersonal and persuasive aspects of the treatment setting are a significant source of variance. They noted little reason to believe that a straightforward conditioning mechanism was operating in the rapid smoking procedure, and that the differential results observed in treatment outcome using rapid smoking were due to the inclusion or exclusion of social and or interpersonal relationship factors. Thus, rapid smoking was effective when administered in a positive social context emphasizing relationship variables, but not when these variables were minimized (Harris & Lichtenstein, Note 5; Lando, 1975, 1977). Second, in two studies (Schmahl et al., 1972; Weintrobe & Lichtenstein, (Note 6) treatment success was negatively correlated with the number of conditioning sessions administered, suggesting that conditioning per se may not be the factor of importance in the treatment package. Pechacek (1979) concluded that the rapid smoking procedure appears to be a potentially effective but complex intervention whose success depends upon the presence of a number of concommitant factors.
Conway (1977) noted that neither aversive or self-control strategies have shown consistent reductions in smoking beyond nonspecific and placebo effects. Lando (1977) also felt that an interpersonal relationship variable, group cohesion, had an important impact in his satiation treatment package. However, except for the initial work of Harris and Lichtenstein (Note 5), whose work has several methodological limitations, the impact of these variables in the treatment of smoking has not been systematically investigated.

Statement of the Problem

Therapeutic relationship variables have long been acknowledged as important change-producing variables in a number of therapeutic orientations. Except for the client-centered school of therapy, however, the impact of the relationship has not, largely, been subjected to empirical scrutiny. In particular, the influence of therapist-client relationship variables has been largely ignored or downplayed in investigations of behaviorally oriented treatments (DeVoge & Beck, 1978; Kazdin & Hersen, 1980; Wilson & Evans, 1977). This has been especially true of group-based formats, in which the cohesion of the group has been considered conceptually similar to dyadic relationships (Bednar et al., 1974; Yalom, 1975).

The present study proposed to investigate the impact of a therapeutic relationship variable, group cohesion, on treatment outcome in a behaviorally based group treatment format. To the author's knowledge, only one previous investigation studied group
cohesion in relation to a behavioral approach. However, Liberman (1970) was concerned mainly with behavioral methods of increasing cohesion and not with treatment outcome.

Cigarette smoking was chosen as the outcome variable through which to assess the impact of group cohesion. This behavior was chosen because it is objective and easily quantified. It minimizes the problems due to lack of conceptual clarity of outcome measures, is less subject to reactivity (improvement ratings based on the client's relationship with the therapist), and is less subject to common method variance due to use of self-report measures for assessing both relationship and outcome variables. Secondly, the behavioral treatment of smoking is largely conducted within a group treatment format. Thus, the impact of group cohesion could be assessed in established group treatment packages. Thirdly, only a few investigations of smoking treatment packages have acknowledged and manipulated therapeutic relationship variables (Harris & Lichtenstein, Note 5; Lichtenstein et al., 1973; Schmahl et al., 1972). None of these investigations attempted to manipulate or assess the influence of group cohesion. Lastly, smoking was chosen because it is a clinically significant behavioral problem. Process analysis was possible without resorting to a therapy analogue format.

The particular treatment packages chosen for the present investigation were satiation and nicotine fading. Satiation was chosen because it has been one of the most effective treatment
programs to date (Lando, 1977, 1981; Pechacek, 1979). It seemed useful to assess the impact of relationship factors in an effective, established treatment package, especially in light of Lando's (1977) hypothesis that group cohesion may be a variable of importance in satiation. Nicotine fading was chosen because it appears to be a promising, nonaversive treatment (Foxx & Brown, 1979; Kopel, Suckerman, & Baksht, Note 7). If cohesion is important in an aversive treatment format (Lando, 1977), then level of cohesion could also be affecting outcome in nonaversive treatments. However, the level of cohesion of group members could be higher in an aversive context due to their shared experiences of an unpleasant event. If the level of cohesion could be increased in a nonaversive format, it is possible that a treatment program that is just as effective as satiation could be developed, but without the disadvantages of the aversion.

These disadvantages include potential medical risks due to increased ingestion of cigarette smoke. Lichtenstein and Glasgow (1977) summarized the research concerning the medical risks of rapid smoking and found that the technique produces immediate and dramatic effects on heart rate, respiratory rate, blood pressure, and blood gases. Lando, McCormack, and McGovern (Note 8) found that while satiation did not affect heart rate, it did increase carbon monoxide levels in the blood. Clearly, medical screening is indicated for subjects undergoing aversive treatments, especially those with potential cardiovascular or pulmonary problems (Pechacek, 1979).
In the present investigation, group cohesion was manipulated via several structured interventions including: contracting, modeling, and behavioral rehearsal of self-disclosure and feedback. Previous research has demonstrated the effectiveness of these interventions in increasing cohesion (Bednar et al., 1974; Ribner, 1974; Yalom, 1975).

The specific hypotheses of the present investigation were as follows. First, the combination of contracting, modeling, and behavioral rehearsal of self-disclosure and feedback would increase the level of cohesion in the groups exposed to these interventions over that of groups not exposed to them. Second, those groups exposed to the structured cohesion interventions, and thus with higher levels of cohesion would evidence greater percentage reductions in smoking and higher abstinence rates than the unexposed groups. Third, individual ratings of the level of cohesion would be related to reducing or eliminating smoking independent of group membership. Thus, the major hypothesis of the study was that a therapeutic relationship variable would affect outcome in a behavioral group treatment context. No hypotheses were advanced concerning the differential effectiveness of the smoking treatments employed or of the level of cohesion related to them.
Subjects

Subjects were recruited from the students, staff, and faculty of the University of Utah in Salt Lake City and from the Salt Lake City metropolitan area. Recruitment procedures included posters advertising a stop-smoking clinic placed at various campus and community locations, public service advertisements placed in the campus and metropolitan newspapers, public service announcements on local radio stations, and letters sent to employers of 25 or more people in the Salt Lake metropolitan area (Appendix A).

Treatment was open to all smokers meeting several criteria. First, all participants verbally confirmed a sincere desire to stop smoking. Second, subjects were required to pay a $10 fee to the University of Utah Counseling Center to offset operating costs and submit a $10 deposit refundable upon collection of 3-month follow-up data. Third, subjects were required to read and sign an informed consent form outlining the smoking program and explaining its research orientation (Appendix B). Fourth, subjects were required to obtain their physician's approval to participate in the program. The physicians were asked to read and sign a medical consent form outlining the smoking treatments and potential risks involved in participating (Appendix C). Subjects who could not obtain their physician's consent and subjects with
reported health concerns were assigned to the nonaversive nicotine fading procedure and their data excluded from analysis. No subjects failed to obtain approval and only one subject with health concerns was eliminated from the analysis.

Of 85 subjects presenting themselves for participation, 13 were eliminated. Ten potential subjects were deleted from consideration because they attended two or fewer sessions prior to removing themselves from the program for various personal reasons. Three subjects were eliminated because they failed to return sufficient data to be included in any analysis. Of the 72 participants, 31 were male, 41 were female, with a mean age of 36.36 years. Sixteen subjects were recruited from the university and the remaining 56 were from the community at large. The subjects had smoked an average of 17.5 years with an average daily smoking rate of 24.71 cigarettes.

Therapists

Two therapists, one male and one female, were employed in the present study. Both therapists were doctoral candidates in counseling psychology who were concurrently completing internships. The therapists had an average of 3 years experience in conducting smoking clinics using the treatments employed in the current study.

Setting

The study was conducted at two sites, the University of Utah Counseling Center and the First Security Bank Corporation Operations Headquarters, both in Salt Lake City. Both sites provided ample
classroom space as well as audio- and video-tape equipment. Five groups were conducted at the University site and three at the bank. There were no significant differences in the populations served at different sites. Due to a possible confound on the site factor, preliminary analyses were conducted on all outcome measures using location as the variable of interest.

**Design**

The initial experimental design was a 2 (therapist) x 2 (treatment) x 2 (cohesion) x 4 (time) split-plot factorial with three between subjects factors (therapist, treatment, and level of cohesion) and one within-subjects factor (time). For all variables except percentage reduction from baseline smoking and abstinence, this design collapsed to a 2 (therapist) x 2 (treatment) x 2 (level of cohesion) completely randomized factorial. The abstinence data were analyzed by Chi-square analyses for the smoking treatment factor, the cohesion treatment factor, and the therapist factor at each of the follow-up periods (1 week, 1 month, 2 months, and 3 months). As much as possible, subjects were assigned to groups on a random basis. The only exception was the subject with health concerns mentioned earlier whose data were excluded from analysis and couples and friends who wished to be assigned to the same group for logistical or personal reasons. There were five such couples and six dyads.

**Procedure**

Treatment was conducted in small groups ranging in size from
seven to 13 members. Each therapist conducted four groups: structured cohesion-nicotine fading (SC-F); structured cohesion-satiation (SC-S); unstructured cohesion-nicotine fading (UC-F); and unstructured cohesion-satiation (UC-S).

The entire treatment program was conducted over a 9-week period. The first 4 weeks were devoted to implementation of the cessation treatments. The remaining 5 weeks were devoted to implementation of a maintenance program. For the most part, subjects met once weekly for approximately 60 to 90 minute sessions. The exception to this was the period of the third and fourth weeks, during which subjects met six times, with the target date for quitting on the night of session eight. The groups then met 48 hours later for their first maintenance session. Table 1 outlines the general schedule for meeting times along with the scheduling of smoking and cohesion-related interventions.

Orientation. All subjects attended an orientation session during which the therapists introduced themselves and the program. A general learning-based behavioral approach was emphasized orienting participants to the idea that smoking is a learned activity and that such learned patterns can be overcome. The therapists explained that smoking would be treated as an overlearned habit. Further, the therapists emphasized that the groups would focus on the behavioral and cognitive aspects of not smoking. Throughout the orientation and the treatment sessions, the therapists stressed the necessity of the smoker's desire and firm decision to stop smoking. It was
Table 1
Summary of Interventions

Orientation

Overview and rationale of treatment
Assignment to groups
  Administration of measures:
  Medical Consent Form
  Informed Consent Form
  Demographic Questionnaire

Session 1, Week 1

Satiation Groups:
  Introductions
  Treatment rationale
  Introduce self-monitoring

Fading Groups:
  Introductions
  Treatment rationale
  Introduce self-monitoring
  30% reduction assignments

Session 2, Week 2

Satiation Groups:
  No meeting

Fading Groups:
  Open discussion
  Review adherence
  60% reduction assignments

Session 3, Week 3

Satiation Groups:
  Open discussion
  25-minutes of intensive smoking
  Physiological information

Fading Groups:
  Open discussion
  Review adherence
  Physiological information
  90% reduction assignments

Session 4, Week 3

Satiation Groups:
  Open discussion
  25-minutes of intensive smoking
  Review adherence

Fading Groups:
  Open discussion
  Review adherence
Table 1 (Continued)

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<th>Fading Groups:</th>
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<td>Open discussion</td>
<td>No meeting</td>
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<td></td>
<td>25-minutes of intensive smoking</td>
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<tr>
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<tr>
<td></td>
<td>Open discussion</td>
<td>View videotape</td>
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<td></td>
<td>25-minutes of intensive smoking</td>
<td>Open discussion</td>
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<td></td>
<td>25-minutes of intensive smoking</td>
<td>Review adherence</td>
</tr>
<tr>
<td></td>
<td>Review adherence</td>
<td>Measures (GAS, CIDS, RI)</td>
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<thead>
<tr>
<th>Session 8, Week 4</th>
<th>UC-S &amp; SC-S</th>
<th>UC-F &amp; SC-F</th>
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<tbody>
<tr>
<td></td>
<td>25-minutes of intensive smoking</td>
<td>Focus discussion on quitting</td>
</tr>
<tr>
<td></td>
<td>Focus discussion on quitting</td>
<td>Quit and throw away cigarettes</td>
</tr>
<tr>
<td></td>
<td>Quit and throw away cigarettes</td>
<td>Complete contingency contracts</td>
</tr>
<tr>
<td></td>
<td>Complete contingency contracts</td>
<td>Hand out suggestions sheet</td>
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Table 1 (Continued)

Maintenance:

**Session 9, Week 4**

<table>
<thead>
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<tr>
<td>Open discussion</td>
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</tr>
<tr>
<td>Review successes</td>
<td>Review successes</td>
</tr>
<tr>
<td>Troubleshoot problems</td>
<td>Troubleshoot problems</td>
</tr>
<tr>
<td>Complete contingency contracts</td>
<td>Self-disclosure exercise</td>
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<tr>
<td></td>
<td>Practice giving feedback</td>
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**Session 10-13, Weeks 5-8**

<table>
<thead>
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<th>SC Groups</th>
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<tbody>
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<td>Open discussion</td>
</tr>
<tr>
<td>Review successes</td>
<td>Review successes</td>
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<tr>
<td>Troubleshoot problems</td>
<td>Troubleshoot problems</td>
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<tr>
<td>Complete contingency contracts</td>
<td>Self-disclosure exercise</td>
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<td>Practice giving feedback</td>
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**Session 14, Week 9**

<table>
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<td>Review successes</td>
<td>Review successes</td>
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<tr>
<td>Troubleshoot problems</td>
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<tr>
<td>Review treatment program</td>
<td>Self-disclosure exercise</td>
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<td>Complete measures (GAS, CIDS,</td>
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<td>RI, Cohesion Questionnaire)</td>
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<tr>
<td>Closure of group</td>
<td>Complete measures (GAS, CIDS,</td>
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<td></td>
<td>RI, Cohesion Questionnaire)</td>
</tr>
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<td></td>
<td>Closure of group</td>
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</table>
explained that this decision to stop smoking was vital to the program's success. The therapists also stressed the importance of active participation, attendance, and implementation of treatment techniques.

All treatments were conducted according to the guidelines in Lando (1976b). The basic rationale and format for each treatment condition are outlined below. The therapists had worked together on several earlier programs, followed the treatment guidelines closely, and collaborated frequently on implementation, thus assuring treatment standardization as much as possible. The necessity for random assignment to groups was explained by the therapists, with the exceptions noted above. The subjects were then assigned to treatment groups.

Finally, the subjects were asked to complete several questionnaires prior to the next meeting: an Informed Consent Form (Appendix B) outlining the experimental procedures, a Smoking Study Questionnaire (Appendix D) gathering demographic and smoking history information, and a Medical Consent Form (Appendix C) signed by the subject's physician. The subjects were then asked to submit their fees and deposits and were dismissed.

**Cessation Treatments**

**Satiation.** The rationale for the satiation treatment is that greatly increasing the intake of or exposure to an initially reinforcing stimulus will decrease the reinforcing value of that stimulus and/or result in that stimulus taking on aversive properties. In contrast,
many smokers attempt to stop smoking by decreasing the number of cigarettes smoked. This generally results in the cigarette assuming more reinforcing properties, thus making it more difficult to stop. Satiation involved attempting to double one's baseline consumption of cigarettes for a 1-week period. In addition, subjects were required to participate in six 25-minute intensive smoking sessions during which they were allowed no other activity except smoking. These sessions were held in small rooms to maximize the aversiveness. Participants were cautioned not to smoke to the point of physical illness and were reminded that they could leave the room for a short period if they experienced a great degree of physical discomfort.

The purpose of this technique was to assist the subjects in focusing their attention on the act of smoking itself and on the lack of pleasure derived from pure smoking devoid of extraneous or concomitant stimulation. All subjects were strongly encouraged to complete the entire week of treatment to maximize the probability of successful outcome.

**Nicotine Fading.** The rationale for the nicotine fading procedure is that by gradually and systematically reducing nicotine intake, withdrawal symptoms from nicotine would be minimized, thus making it easier to abstain from cigarettes altogether. The therapists emphasized that subjects can eliminate most of the nicotine from their systems prior to the quit date by following the fading schedule. Fading allowed gradual reduction of nicotine consumption with relatively little discomfort.
In the nicotine fading procedure, subjects reduced nicotine intake by changing over a 3-week period, to brands of cigarettes with lower levels of nicotine. Brands were assigned based on the Federal Trade Commission report, Tar and Nicotine Content of Cigarettes (Appendix E). Subjects were allowed a choice of brands containing the appropriate concentration of nicotine. Subjects decreased their baseline nicotine level by 30% the first week, 60% the second, and 90% the third.

Common Treatment Elements. Although the two cessation methods were conceptually and experimentally different, they did share some common elements. First, the groups were only semistructured, with a great deal of emphasis placed on open discussion and group interaction. Secondly, all groups were assigned a target date for quitting and the implications of quitting and the necessity of preparing for the target date were emphasized. Third, the necessity of firmly committing oneself to stop was continually stressed. Fourth, the time spent in-session for each group was equal. Fifth, all groups received a presentation on the physiological effects of smoking and expected physiological changes following abstinence (Appendix F). Finally, all subjects were required to self-monitor their smoking behavior throughout the cessation period. First, it increased subjects' awareness of their smoking behavior; subjects were more conscious of their smoking. Secondly, it enabled subjects to notice the patterns, contingencies, and associations with other events. This information made subjects more aware of the overlearned habits related to their
smoking. Third, self-monitoring was the only feasible method of gathering data on baseline and intreatment smoking rates. Pocket-sized booklets sufficient for one week's recording were provided to each subject on a weekly basis. Each of the seven pages in each booklet was divided into 15-minute time periods covering the entire day. Subjects were requested to record each cigarette smoked in the appropriate interval.

**The Maintenance Component**

The maintenance component of the treatment package began on the target date for quitting, following the throwing away of cigarettes by all subjects. At this time, a list of suggestions to aid quitting (Appendix G) was distributed and discussed by the group members. Discussion centered on generating other alternatives to smoking and troubleshooting particular problem areas for individuals. Short- and long-term benefits of nonsmoking were discussed including positive physical changes. Subjects were encouraged to actively resist urges to smoke, and to report on the efficacy of various strategies to the group. Complete abstinence and continued vigilance were repeatedly stressed.

Throughout the maintenance phase, therapists encouraged and facilitated nonstructured, open group discussion. Two areas that received repeated focus, however, included subjects' success at maintaining abstinence and potential problems related to nonsmoking. These topics were reviewed each session.
Subjects also participated in contractual management procedures. Subjects completed contingency contracts (Appendix H) covering the time periods between maintenance meetings. With these contracts, subjects personally chose various rewards or punishments to be effected contingent on maintaining abstinence or smoking, respectively. The rewards provided structured reinforcement intended to increase the salience of the positive aspects of not smoking. The punishers were intended to decrease the perceived reinforcing value of cigarettes. A second contractual procedure consisted of self-management contracts (Appendix I) covering a 1-month period. This contract required subjects to forfeit a specified amount of money per cigarette smoked after the target date to a disliked organization of their choice. Subjects themselves determined both monetary amount and organization, but the therapists cautioned subjects to choose so as to make the contracts an effective smoking deterrent. All subjects filled out both contracts. The therapists reviewed the contract terms weekly to ensure compliance.

Cohesion Interventions

Structured Cohesion (SC) Condition. Subjects in this condition were exposed to a variety of interventions intended to increase the perceived level of cohesion in the groups above that obtained through normal unstructured group interaction. These interventions included group contracts and several structuring exercises.

The group contract focused on three factors (Appendix J). The
first factor addressed group support and attendance. Subjects agreed to make a sincere effort to stop smoking and to help other group members to quit by providing support, reinforcement and encouragement, and by attending as many group meetings as possible. This component of the contract stressed that stopping smoking was a group as well as individual project and that the potential for success was greater the more group members aided each other.

The second and third components of the contract addressed verbal behaviors indicative of and designed to increase group cohesion. Specifically, the second part of the contract defined self-disclosure and stated that subjects would be expected to share with other group members their experiences with smoking, smoking histories, and past attempts at cessation as well as experiences in the current program. The third contractual component defined behavioral feedback and stipulated that subjects would be expected to provide such feedback to other group members. Behavioral feedback consists of open, non-judgmental observations regarding another person's behavior without reference to their intentions. Subjects were encouraged to engage in behavioral feedback regarding both in-group and out-of-group behavior.

Several different modes were used to provide a structure for group interaction so as to increase group cohesion. The first method consisted of written descriptions of anticipated group verbal interaction. This mode was subsumed in the aforementioned contracts. In addition to those factors already mentioned, the contracts defined
and gave examples of group support, self-disclosure, and behavioral feedback. The contracts were signed by the subjects and witnessed by one other group member. Subjects kept their contracts to enable them to refer to them at subsequent time periods.

The second structuring intervention consisted of a videotape of a simulated smoking group engaged in behaviors indicative of and conducive to increasing group cohesion. The models in the tape were five interns at the University Counseling Center, University of Utah. The models repeatedly exhibited mutual support and reinforcement, self-disclosure, behavioral feedback, and other statements indicative of a cohesive group in unstructured group interaction. The tape was 10 minutes in length and was shown at each structured cohesion group's sixth meeting. The sixth session was chosen because it was felt that by this meeting the members would have been together long enough to begin operating as a group and thus, they could appreciate the behaviors being modeled. Secondly, it was enough in advance of the quit date to allow the subjects to concentrate on and discuss the tape. At this session, the therapists increased the salience of the modeled behaviors by labeling them as they occurred and by generating discussion concerning the group interaction and modeled behaviors at various points both during and following the viewing of the tape. Across all structured cohesion groups, five subjects did not see the tape due to absences. These subjects appeared to be distributed approximately evenly across all the structured
cohesion groups. The tape was later discussed with these subjects along with the examples of the cohesive behaviors.

The third structuring intervention consisted of behavioral practice trials regarding self-disclosure and behavioral feedback. These exercises were designed to blend in with and facilitate group discussion. The self-disclosure exercises were variations of "I am" exercises (Egan, 1976). The first exercise was started by the leaders asking the subjects to finish the incomplete sentence, "I smoke because . . .". Each person was asked to complete this sentence with a self-disclosing statement regarding the reasons s/he smoked. The leader reinforced these disclosures verbally and encouraged other group members to do the same. Group discussion of the exercises and disclosures was also encouraged and reinforced. The same general format was followed for several additional incomplete sentences. The beginning stems of these sentences were (a) "I am in this group because . . .", (b) "When I think about quitting smoking I . . .", and (c) "I can help this group because I . . .". Egan (1976) stated that exercises of this type are good for generating self-disclosure, practicing the behavior, and generating group interaction.

Appropriate behavioral feedback was also incorporated into the above exercises. The subjects were reminded to follow the guidelines for feedback outlined in the contracts. The leaders modeled appropriate feedback following various members' self-disclosing statements. All subjects engaged in these exercises over the course of treatment as
outlined in Table 1.

**Unstructured Cohesion Condition (UC).** Subjects in this condition were exposed to none of the interventions outlined in the high cohesion condition. Participants underwent the regular treatment and maintenance package outlined above and in Lando's treatment manual (1976b). In each session, time was spent discussing the participants' experiences in the program, their fears and anxieties regarding quitting, and their adherence to the prescribed treatment conditions. No structured attempts were made to train or practice levels of self-disclosure, feedback, or cohesive statements. The essential distinction between the structured and unstructured cohesion conditions was that the unstructured condition did not incorporate specific techniques to facilitate development of group cohesion.

Clinical observations had indicated that high levels of cohesion could be obtained with an unstructured approach. However, low levels of cohesion had also been observed and clinical opinion has held that this has resulted in less than optimal treatment outcome results.

**Dependent Variables: Cohesion Assessment**

The Group Atmosphere Scale (GAS) is a 130-item scale designed to measure the perceived social atmosphere of outpatient therapy groups (Appendix K) (Silbergeld et al., 1975). Group cohesion can be reliably measured as a function of six of the subscales of this measure: spontaneity, support, affiliation, involvement, insight, and clarity. These subscales were combined to get a self-report measure of the
level of cohesion from each of the groups. The total score of the six subscales was computed for each participant in each group and the group averages used in the analysis. The range of scores was from 0 (very low cohesion) to 60 (very high cohesion). This measure has been used exclusively with therapy groups up to this point. This represents an initial attempt to use this measure with a structured, behaviorally oriented group format. The GAS was correlated with the other cohesion assessment measures in an attempt to determine its applicability to interventions of this nature.

Based on self-reports of 149 voluntary participants in 17 different outpatient therapy groups, Silbergeld et al. (1975) found that they could reliably describe cohesion as a function of the six subscales mentioned above. The validity and usefulness of these subscales as a measure of group cohesion has been demonstrated in reference to behavioral and self-report indices of intragroup communication, group norms, and group conformity (Silbergeld et al., 1975; Silbergeld, Manderscheid, & Koenig, 1977). Silbergeld and his colleagues reported acceptable item-subscale correlations, subscale validities, reliability estimates, and also that the GAS can effectively discriminate different psychosocial environments in groups.

The Relationship Inventory (RI) Form OS-G-64 (Appendix L) is designed to assess an individual's perception of the therapeutic conditions (empathy, unconditional positive regard, and genuineness) presented by the group as a whole. The scale consists of 64 items
scored in a 6-point Likert format. The range of scores is from a negative 192 (low level of therapeutic conditions) to a positive 192 (high level). Gurman (1977) summarized a large number of studies demonstrating the reliability and validity of the RI. As with the GAS, this instrument has not been previously used with structured, behavioral groups and an initial attempt was made to assess its applicability to groups of this nature by correlating it with other cohesion assessment devices.

The Hill Interaction Matrix (HIM) (Hill, 1965) was used to analyze the verbal behavior of the groups as a whole. All verbal statements of group members were rated and assigned to one of four categories indicative of varying levels of cohesion. To the author's knowledge, this was the first attempt to use the HIM to rate and categorize the verbal productions of group members in semistructured, behaviorally oriented groups whose focus was on changing a single, circumscribed behavior. The reliability and validity of the HIM has been documented in numerous studies (Hill, 1965). Compilations of studies of various methods of measuring reliability indicate an average rank order (rho) correlation of .82 for different judges and an average percentage of agreement between judges of 91%. Use of the HIM with various types of groups indicates it is a valid measure of group interaction.

Following session five, four sessions of each group were recorded. Session five was chosen as the starting point so as to allow the groups to become established. The sessions to be taped were chosen
at random. Ten-minute segments from each tape were chosen by obtaining a three-digit number from a random number table, running the tape counter to the number, and transcribing 10 minutes of interaction from that point. The only exception to this criterion was that a new segment was chosen if the group was involved in a structured activity (i.e. assignment of low nicotine cigarettes). Eight segments were obtained for each condition, resulting in a total of 32 segments.

The raters were a Ph.D. level male (rater 1) and a female doctoral candidate (rater 2), both in counseling psychology. Both had received classroom training in the use of the HIM by an acknowledged expert as well as extensive out-of-class training. The raters had an average of 3 years experience in the use of the HIM. Raters were blind as to the condition of the tape they were rating, as well as to each others' ratings. The assessments of rater 1 were used for the results with the assessments of rater 2 as a reliability check.

The Comfortable Interpersonal Distance Scale (CIDS) (Duke & Nowicki, 1972) was used as a sociometric measure of interpersonal attraction among group members (Appendix M). Interpersonal attractions among group members is an important component of overall group cohesion. (Yalom, 1975). Radii equal to the number of group members minus one and 10 cm in length were used. Scores for each individual consisted of the distance in centimeters from the center point s/he would want other group members to approach averaged across all group members. Thus, the lower the distance, the higher the perceived comfort level.
Test-retest reliabilities and validity studies correlating self-report with the actual distance measures indicated that the CIDS is a psychometrically sound measure of interpersonal distance and intra-group attraction (Duke & Nowicki, 1972).

The Cohesion Questionnaire of Gregory et al. (Note 3) as adapted from Yalom (1975) was used as a self-report measure of cohesion (Appendix N). The scale consists of 8 items in a 7-point Likert format measuring such factors as liking for the group, feelings of inclusion, desire to change the group, etc. The range of scores is from 8 (very low cohesion) to 56 (very high cohesion). This scale was correlated with other cohesion assessment devices in an initial attempt to assess common variance measured by this and the other instruments.

Group attendance was used as a behavioral measure of group cohesion. The total number of absences of each member was recorded and combined according to group membership for analysis.

Preliminary analyses were conducted on all dependent variables administered twice, including the GAS, the RI, and the CIDS. First administration of all these variables was at session seven. It was felt that by this time the groups had interacted enough to permit meaningful measurement of group cohesion variables. These variables were administered twice in order to assess any possible changes in level of cohesion over the life of the groups, and because they were the only variables used in the investigation amenable to multiple
administrations. Session seven was chosen for the first administration because up to that time the main focus was on structured smoking treatment. Following this, emphasis was placed on unstructured interaction. Thus, there was a natural break in smoking treatment augmented by the fact that a great deal of the cohesion treatment took place after the quit date. Further, it was felt that after seven sessions the groups had coalesced sufficiently to allow a baseline assessment of cohesion.

Dependent Variables: Smoking Assessment

Abstinence from smoking was one measure of the effectiveness of treatment. A subject was recorded as abstinent if s/he smoked fewer than one cigarette, cigar, or pipe following the target date for quitting. This criterion was chosen to impose a stringent and conservative measure for abstinence. Abstinence was assessed at 1 week, and 1, 2, and 3 months by a self-report measure sent to all participants (Appendix 0).

Percentage reduction from baseline smoking was the second smoking assessment measure. Baseline smoking data were collected for a 2-week period prior to treatment implementation. These data were combined to give an average daily smoking rate. At the time intervals specified above, each subject's percentage reduction from baseline smoking was computed.
RESULTS

Antecedent Considerations

Adherence

Subjects were monitored to assess degree of adherence to smoking treatment guidelines. Subjects in the satiation groups increased their smoking to an average of 152% baseline, indicating a high degree of adherence to the satiation program. Secondly, all subjects whose data were included in the analyses completed the entire week of treatment. In the nicotine fading groups, weekly checks indicated that all subjects were smoking the brands they had been assigned. Several subjects did report smoking higher nicotine content cigarettes than they had been assigned, but this amounted to only one or two cigarettes per week for any one subject.

Preliminary Analyses

The subject characteristics are listed in Table 2. Analysis of variance indicated no significant differences between groups for age or number of years smoking. Although differences existed, the high degree of variability precludes significance.

Analysis of variance further indicated no significant between group differences on first administration for any of the variables (GAS, RI, and CIDS). The difference approached significance for the cohesion factor on the GAS (p < .06) indicating that the SC groups were slightly more cohesive, but none of the other comparisons were close to significance. Group means and standard deviations for
Table 2

Subject Characteristics

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<th>Cohesive</th>
<th>Noncohesive</th>
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<tbody>
<tr>
<td></td>
<td>Satiation</td>
<td>Fading</td>
</tr>
<tr>
<td>Males</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Females</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Average age</td>
<td>31.9</td>
<td>39.77</td>
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<tr>
<td>Average years smoking</td>
<td>14.2</td>
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GAS, the RI, and the CIDS are listed in Table 3. A preliminary analysis of variance was also conducted on baseline smoking rates. The average daily baseline rate for each group is: SC-S (24.9), SC-F (24.9), UC-S (27.3), and UC-F (22.7). Again, no significant between groups differences were observed.

Preliminary analyses of all variables indicated that there were no significant effects due to the therapist factor nor were there any significant interactions with the therapist factor for any of the dependent variables. Thus, the experimental design was collapsed across this factor. This resulted in a 2 (treatment) x 2 (level of cohesion) x 4 (time) split-plot factorial for the percentage reduction from baseline smoking data, and a 2 (treatment) x 2 (level of cohesion) completely randomized factorial for all other variables except abstinence, where the therapist factor was dropped from the analysis. No significant differences were found on the location (university vs. bank) and there were no significant interactions with location, indicating that results were not differentially affected by the location of the clinics. The location factor was thus eliminated from subsequent analyses.

**Cohesion Assessment**

**Within-groups Analyses.** Within-groups analyses were conducted on all dependent measures administered twice to assess level of cohesion—the GAS, RI, and CIDS. These analyses were conducted to assess the nature of any changes in cohesion within each group.
Table 3
Scores of Cohesion Assessment Dependent Variables

<table>
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<th>Structured Cohesion</th>
<th>Satiation</th>
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<tbody>
<tr>
<td>Session</td>
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<td>13</td>
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<td></td>
<td>SD</td>
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<td>RI</td>
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<td>NUMBER OF ABSENces</td>
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Table 3 (cont.)

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<th>Unstructured Cohesion</th>
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<tr>
<td><strong>Session</strong></td>
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<td><strong>SD</strong></td>
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<td><strong>CIDS</strong></td>
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<td><strong>SD</strong></td>
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Univariate analyses of variance disclosed no significant differences in GAS or RI scores from first to second administration for any group. In general, scores were slightly elevated for both variables across groups at session 13, except for the SC-F group which showed a slight decrease on the RI scores.

On the CIDS both structured cohesion groups, SC-S and SC-F, stayed virtually the same from first to second administration indicating no change in comfortable approachable distance. Both unstructured cohesion groups, UC-S and UC-F, evidenced significantly higher CIDS scores from session seven to session 13 (UC-S, F (1, 26) = 8.04, p < .01; UC-F, F (1, 24) = 19.78, p < .0001) indicating a significant enlargement of interpersonal comfort distances. Thus, the unstructured cohesion groups appeared to become significantly less comfortable with other members of their groups over the maintenance period, while members of structured cohesion groups maintained their initial comfortable interpersonal differences.

Between-groups Analyses. Between-groups analyses for the GAS, the RI, and the CIDS were conducted using a 2 (smoking treatment) x 2 (cohesion treatment) analysis of covariance. This procedure was used (despite the finding of no significant between-group differences on the first administration for any of the variables) in order to obtain a clearer measure of change by eliminating variance due to the first administration.

There was no significant effect of smoking treatment (satiation
vs. nicotine fading) for GAS, RI, or CIDS indicating that type of smoking treatment did not differentially effect performance on these variables. An aversive versus a nonaversive format did not influence cohesion as assessed by these measures. The cohesion treatment factor was highly significant for CIDS, \( F(1, 58) = 44.06, p < .0001 \), while both the GAS and the RI scales showed no significant between-groups differences. Thus, the structured cohesion intervention enabled members of structured cohesion groups to maintain their interpersonal comfort levels at significantly closer distance than members of unstructured cohesion groups.

The Cohesion Questionnaire is a posttreatment assessment device and thus was administered only at the final group meeting, session 13. A 2 (smoking treatment) x 2 (cohesion treatment) analysis of variance was used. The smoking treatment factor was nonsignificant, but the cohesion treatment variable was highly significant, \( F(1, 63) = 18.3, p < .0001 \). The structured cohesion groups displayed significantly higher levels of cohesion on a self-report measure tapping important facets of cohesion.

The number of absences was analyzed in the same manner as the Cohesion Questionnaire and for the same reasons. Again, the smoking treatment factor was nonsignificant while the cohesion treatment factor was highly significant, \( F(1, 63) = 12.61, p < .001 \). Members of structured cohesion groups missed meetings significantly less often than members of unstructured cohesion groups. There was also a significant interaction between the smoking and cohesion factors,
F (1, 63) = 8.66, p < .01, with the SC-F group having the lowest average number of absences and the UC-F group having the highest. It appears possible that nicotine fading, as a smoking treatment, may need additional structure, perhaps in the nature of cohesion interventions, to maintain a high attendance rate.

The HIM data were analyzed by means of a nonparametric proportions test that was used due to the categorical nature of the data. Rater 1 analyzed all tape segments and rater 2 analyzed 50% of the segments chosen at random to assess reliability. A reliability rate of 89.6% was obtained.

Overall, the structured cohesion groups evidenced a significantly higher proportion of cohesive verbalizations than did the unstructured groups, Z = 10.353, p < .0001. Thus, members of structured cohesion groups worked harder, stayed on task more, and had higher rates of cohesive statements than did members of unstructured cohesion groups. For each smoking treatment considered separately, the structured cohesion groups again evidenced significantly higher proportions of cohesive statements, both for nicotine fading, Z = 8.88, p < .0001, and satiation, Z = 1.8, p < .05.

The highly significant difference obtained for the nicotine fading treatment was due to the small proportion of cohesive verbalizations for the UC-F group (43%). This was the only group with a smaller proportion of cohesive than noncohesive verbalizations, the other groups averaging 30% noncohesive
statements. Again, as with the number of absences data, it appears possible that the nicotine fading smoking treatment may need specific interventions in order to increase the level of cohesion.

Newman-Keuls comparisons were conducted to assess the nature of the between-groups differences on the CIDS, Cohesion Questionnaire, and number of absences data. These comparisons were chosen because the Newman-Keuls procedure is fairly powerful and it controls for the Type I error rate. The results of the comparisons are shown in Table 4. There were no significant differences between either of the structured cohesion groups, indicating that both groups displayed uniformly high levels of cohesion across type of smoking treatment. There was one significant difference between the unstructured cohesion groups, with the UC-F group having a significantly higher number of absences than the UC-S group. Combined with previous results, this means that the UC-F group had significantly more absences than every other group. Additionally, the pattern and magnitude of significant differences appeared to indicate that the UC-F group displays the lowest level of cohesion, overall. The UC-S group was also significantly less cohesive than both structured cohesion groups on two variables, CIDS and Cohesion Questionnaire, but not on number of absences.

**Smoking Assessment**

Percentage Reduction from Baseline. Within-groups analyses of percentage reduction from baseline smoking data were conducted
Table 4

Significance Levels of Between-groups Differences

Based on Newman-Keuls Comparisons

<table>
<thead>
<tr>
<th>Measure</th>
<th>Groups Compared</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIDS</td>
<td>.01</td>
</tr>
<tr>
<td>Cohesion Questionnaire</td>
<td>.05</td>
</tr>
<tr>
<td>Number of Absences</td>
<td>.01</td>
</tr>
</tbody>
</table>
to assess the nature of change on percentage reduction over the 3-month follow-up period within each group. These data are shown in Table 5. All groups evidenced impressive initial reductions in smoking.

Univariate analyses of variance were conducted to assess changes in percentage reductions from week 1 to month 3. All groups evidenced significantly increased smoking rates over the 3-month follow-up period: SC-S (3, 54) = 7.62, p < .001; SC-F, F (3, 63) = 9.23, p < .0001; UC-S, F (3, 36) = 11.34, p < .0001; UC-F, F (3, 42) = 6.35, p < .001. Although all groups, except UC-S, maintained fairly high percentage reductions, all showed significantly increased smoking rates.

Newman-Keuls comparisons were used to assess the nature of these increases. These data are displayed in Table 6. Both structured cohesion treatment groups evidenced slight but nonsignificant increases in smoking until the period between month 2 and month 3. During this time period, smoking increased significantly. Combined with the slight increases noted previously, a significant increase in smoking results for the entire follow-up period.

For the UC-S group, the sharpest increase in smoking occurred between month 2 and month 3, and the increase was faster than that of the structured cohesion groups as evidenced by the significant difference between week 1 and month 2. For the UC-F group, the sharpest increase was between month 1 and month 2 with some stabilization in the latter part of the follow-up period. Again, the increase
Table 5
Percentage Reductions from Baseline Smoking Levels

<table>
<thead>
<tr>
<th>Group</th>
<th>Week 1</th>
<th>Month 1</th>
<th>Month 2</th>
<th>Month 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-S</td>
<td>98.64</td>
<td>97.11</td>
<td>94.47</td>
<td>75.89</td>
</tr>
<tr>
<td>UC-S</td>
<td>84.62</td>
<td>66.92</td>
<td>55.46</td>
<td>25.69</td>
</tr>
<tr>
<td>SC-F</td>
<td>98.50</td>
<td>96.91</td>
<td>85.68</td>
<td>72.00</td>
</tr>
<tr>
<td>UC-F</td>
<td>92.67</td>
<td>84.00</td>
<td>66.53</td>
<td>62.33</td>
</tr>
<tr>
<td>Combined Structured</td>
<td>98.60</td>
<td>97.01</td>
<td>90.08</td>
<td>73.90</td>
</tr>
<tr>
<td>Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Unstructured</td>
<td>88.60</td>
<td>75.46</td>
<td>60.99</td>
<td>44.00</td>
</tr>
</tbody>
</table>
Table 6

Significance Levels of Within-group Increases in Smoking Over the Follow-up Period Based on Newman-Keuls Comparisons

<table>
<thead>
<tr>
<th>Groups</th>
<th>Week 1/ Month 1</th>
<th>Week 1/ Month 2</th>
<th>Week 1/ Month 3</th>
<th>Month 1/ Month 2</th>
<th>Month 1/ Month 3</th>
<th>Month 2/ Month 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-S</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC-F</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UC-S</td>
<td>.05</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UC-F</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
in smoking was at a faster pace than for the structured cohesion groups.

Between-groups analyses for the percentage reduction from baseline smoking data were conducted using a split-plot analysis of variance. There were no significant effects for the smoking treatment factor, indicating that type of smoking treatment (satiation vs. nicotine fading) did not differentially affect percentage reduction from baseline smoking. A significant effect for cohesion treatment was found, $F(1, 65) = 15.87, p < .001$, indicating that subjects in the structured cohesion groups had significantly higher percentage reductions from baseline smoking than the unstructured cohesion groups. A significant effect for time was found, $F(3, 195) = 35.03, p < .0001$, indicating again that there was a significant increase in smoking over the 3-month follow-up period. Lastly, there was a significant interaction between cohesion treatment and time, $F(3, 195) = 3.32, p < .05$, corroborating the within-groups analysis indicating that the structured cohesive groups were increasing smoking at a significantly slower rate than the unstructured cohesion groups, as well as maintaining greater percentage reductions over the follow-up period.

Newman-Keuls comparisons were conducted to assess the nature of the between-group differences. These comparisons are listed in Table 7. At week 1, there were no significant between-group differences. This was expected because, for the most part, the structured cohesion interventions had not had time to take effect or had only begun to
Table 7

Significance Levels of Between-groups Differences in Percentage Reductions from Baseline Smoking Based on Newman-Keuls Comparisons

<table>
<thead>
<tr>
<th>Time</th>
<th>Groups Compared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>.01 .01 .01 .01 .01 .01</td>
</tr>
<tr>
<td>Month 1</td>
<td>.01 .01 .05 .01 .01 .01</td>
</tr>
<tr>
<td>Month 2</td>
<td>.01 .01 .01 .01 .01 .01</td>
</tr>
<tr>
<td>Month 3</td>
<td>.01 .01 .01 .01 .01 .01</td>
</tr>
</tbody>
</table>
be implemented at this point.

At month 1, the UC-S group evidenced significantly higher smoking rates than any of the other three groups. The other three groups showed only slight increases in smoking rate, while the UC-S group showed a higher rate of increase. At month 2, both structured cohesion groups were significantly better than both unstructured cohesion groups. Month 3 shows the same pattern as month 1, with the UC-S group showing significantly greater smoking rates than any of the other three groups.

Abstinence. A more useful and valid measure of treatment effectiveness is total abstinence from smoking. First, the goal of the present program was total abstinence. Reductions in smoking rate and/or reduction in nicotine intake are useful goals, but fall short of complete smoking cessation. Secondly, abstinence is a much less ambiguous criterion. It is not subject to inaccuracy in self-monitoring and is a much more discrete measure. Percent of subjects abstinent in each group over each of the follow-up periods is shown in Table 8.

Chi-square analyses were conducted on the dichotomous abstinence data. For the smoking treatment factor, there was no significant difference in abstinence through month 3. At month 3, the difference approached significance, \( \chi^2 (1) = 3.544, p<.06 \), suggesting a slightly higher level of abstinence for the nicotine fading treatment. This result was mainly due to the very poor abstinence rate for the UC-S group at month 3 (12.5% abstinence). In line with the percentage
<table>
<thead>
<tr>
<th>Group</th>
<th>Week 1</th>
<th>Month 1</th>
<th>Month 2</th>
<th>Month 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-S</td>
<td>94.74</td>
<td>84.21</td>
<td>84.21</td>
<td>57.89</td>
</tr>
<tr>
<td>SC-F</td>
<td>95.46</td>
<td>86.36</td>
<td>72.73</td>
<td>63.64</td>
</tr>
<tr>
<td>Combined Structured Groups</td>
<td>95.12</td>
<td>85.37</td>
<td>78.05</td>
<td>60.98</td>
</tr>
<tr>
<td>UC-S</td>
<td>81.25</td>
<td>62.50</td>
<td>50.00</td>
<td>12.50</td>
</tr>
<tr>
<td>UC-F</td>
<td>86.67</td>
<td>66.67</td>
<td>60.00</td>
<td>60.00</td>
</tr>
<tr>
<td>Combined Unstructured Groups</td>
<td>83.87</td>
<td>64.52</td>
<td>54.84</td>
<td>35.48</td>
</tr>
</tbody>
</table>
reduction data, there appeared to be no significant difference in effectiveness between satiation and nicotine fading in early follow-up data.

For the cohesion treatment factor, there was no significant difference between the structured and unstructured cohesion groups at week 1. This result was expected as the cohesion interventions were, for the most part, introduced but not yet instilled in the groups. However, there were significant differences at month 1, $\chi^2 (1) = 4.25, p < .05$; month 2, $\chi^2 (1) = 4.37, p < .05$; and month 3, $\chi^2 (1) = 4.59, p < .05$. These results indicated that the structured cohesion groups had significantly higher levels of abstinence over the 3-month follow-up period. Again it might be noted that at least at month 3, the results were affected by the aberrant abstinence rate of the UC-S group, a result inconsistent with previous research (Lando, 1977).

**Correlational Analyses**

Correlational analyses were computed to assess the degree of relationship between both abstinence and percent reduction from baseline smoking with variables assessing cohesion and membership in a structured-cohesion group. Pearson product-moment correlations were conducted to assess the degree and direction of relationship. Abstinence and percent reduction at month 3 were used as the smoking outcome variables, since it was assumed that the most important criterion was long-term treatment outcome. The correlations are
listed in Table 9.

Abstinence from smoking at month 3 was significantly correlated with membership in a structured cohesion group ($r = .245, p < .01$), with a low number of absences from the group ($r = .35, p < .01$), and with a high degree of comfort with one's fellow group members (CIDS) at session seven, the midpoint of the program ($r = .33, p < .01$). Percentage reduction from baseline smoking was also significantly correlated with membership in a structured cohesion group ($r = .313, p < .01$), with number of absences from the group ($r = .33, p < .01$) and with a high degree of comfort with one's fellow group members ($r = .31, p < .01$) at session seven and session 13 ($r = .28, p < .05$). Thus, both abstinence at month 3 and percentage reduction from baseline smoking at a 3-month follow-up related not only to membership in a cohesive group, but to two measures (one behavioral and one self-report) indicative of cohesion.

Multiple regression analyses were conducted in order to assess the degree to which abstinence and percentage reduction in smoking at month 3 could be predicted based on several criteria of cohesion. The cohesion variables used for prediction were membership in a structured cohesion group, the Cohesion Questionnaire, number of absences, and the first administration of the CIDS. These variables were chosen because the cohesion treatment factor significantly affected success in quitting or reducing smoking and the Cohesion Questionnaire, absence, and CIDS all differentiated cohesive groups.
Table 9
Pearson Correlation Coefficients of Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>Absence</th>
<th>GAS</th>
<th>RI</th>
<th>CIDS&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Cohesion Questionnaire</th>
<th>Abstinence&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Percent Reduction&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence</td>
<td>1.00</td>
<td>.03</td>
<td>.02</td>
<td>.02</td>
<td>-.20</td>
<td>.35**</td>
<td>-.33**</td>
</tr>
<tr>
<td>GAS</td>
<td>1.00</td>
<td>.34**</td>
<td>-.22</td>
<td>.17</td>
<td>-.10</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>1.00</td>
<td>-.08</td>
<td>-.01</td>
<td>.16</td>
<td>-.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIDS&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.00</td>
<td>-.28*</td>
<td>.33**</td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion Questionnaire</td>
<td>1.00</td>
<td></td>
<td>.05</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstinence&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>-.91**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Reduction&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>CIDS at the first administration.

<sup>b</sup>Measures taken at 3 months.

* p .05

** p .01. All tests are 2-tailed t-tests.
to a significant degree. A stepwise multiple regression program was used. The results of the regression analysis are displayed in Table 10.

It was found that the variables used accounted for a significant amount of variance for abstinence (31%), $F(4, 55) = 6.17, p < .001$, and percentage reduction from smoking (30%), $F(4, 55) = 5.99, p < .001$, both at month 3. The amount of variance accounted for for abstinence and percentage reduction is very similar. It appears, as expected, that the two variables are very closely related. This is supported by the very high correlation (.91) between abstinence and percentage reduction.

Apparently, then, both abstinence and percentage reduction in smoking can be accurately predicted using group cohesion criteria as the predictor variables. There is, however, the possibility of a confound between treatment effectiveness and perceptions of cohesion. Groups may be considered more cohesive due to the effectiveness of the smoking treatments and not based on actual level of cohesion. This result seems unlikely due to the consistent and highly significant differences in cohesion and smoking rates between the structured and the unstructured cohesion groups.
Table 10

Multiple Regression Summary Table for Smoking Reduction Data at Month 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abstinence</th>
<th></th>
<th>Percentage Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abstinence</td>
<td>Percentage Reduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple R</td>
<td>R²</td>
<td>R² Change</td>
</tr>
<tr>
<td>Cohesion Group</td>
<td>.245</td>
<td>.06</td>
<td>.06</td>
</tr>
<tr>
<td>Cohesion Questionnaire</td>
<td>.33</td>
<td>.11</td>
<td>.05</td>
</tr>
<tr>
<td>Absence</td>
<td>.42</td>
<td>.17</td>
<td>.06</td>
</tr>
<tr>
<td>CIDS--1st administration</td>
<td>.56</td>
<td>.31</td>
<td>.14</td>
</tr>
</tbody>
</table>
DISCUSSION
Influence of Group Cohesion

The results of the present investigation support the hypothesis that a therapeutic relationship factor, group cohesion, can affect outcome in structured, behaviorally oriented group treatment. In the present study, cohesion affected outcome in two behavioral group treatments of smoking, satiation and nicotine fading, both of which have been shown to be effective in reducing or eliminating smoking (Foxx & Brown, 1979; Lando, 1977, 1981). Increasing the level of cohesion above that normally found in the groups increased the effectiveness of the two smoking treatments. Specifically, members of structured cohesion groups (who perceived their groups to be more cohesive than members of unstructured cohesion groups) maintained an abstinence rate of 61% and a percentage reduction from baseline smoking rate of 74% at a 3-month follow-up, compared with 35% and 44% respectively, for the unstructured cohesion groups. Further, members of structured cohesion groups returned to baseline smoking rates at a significantly slower pace than members of unstructured cohesion groups. Thus, not only was cohesion a factor in attaining impressive initial abstinence and reduction rates, but it was also a factor in maintaining these rates over a moderately extended time period. To the author's knowledge, the present investigation is the first to demonstrate the effects of an interpersonal relationship variable over such a follow-up period. Additionally, 1-year follow-up data will also be collected
on the present subjects. These data will provide a more valid measure of smoking treatment effectiveness as well as assessing the effect of cohesion over a longer period.

The influence of cohesion was evident both on a group and an individual level. Correlational analyses indicated that membership in a structured cohesion group and a high level of perceived cohesion were significantly associated with success in abstaining from or reducing smoking. Regression analyses indicated that a significant amount of the outcome variance for both abstinence and percentage reduction can be accounted for by these factors. Cohesion accounts for approximately 30% of the outcome variance for both abstinence and percentage reduction.

To the author's knowledge this is the first demonstration of the impact of a therapeutic relationship variable on a structured behavioral group treatment program. Liberman (1970) was concerned with increasing cohesion in unstructured groups. Alexander et al. (1976) and Ford (1978) concentrated on the individual therapist-client relationship in behavioral interventions. Specifically, with regard to the behavioral treatment of smoking, Lichtenstein and his colleagues (Harris & Lichtenstein, Note 5; Lichtenstein et al., 1973; Schmahl et al., 1972) manipulated different types of social variables but did not assess the impact of these manipulations or relate them causally to outcome. The present study relates cohesion significantly and causally to positive treatment outcome and demonstrates that cohesion can have
significant effects over a moderate time period. The study supports
the conclusions of previous researchers (Bernstein & McAlister, 1976;
Lichtenstein & Danaher, 1976) who concluded that the interpersonal
aspects of smoking treatments are a significant source of variance.

More generally, the present study supports the contentions of
writers from various schools of therapy who contend that the therapeu­
tic relationship is important for positive therapeutic outcome
(Frank, 1976; Marmor, 1975; Strupp, 1975). Support is provided
for Strupp's (1973) contention that degree of change can be pre­
dicted based on the quality of human relationships involved in the
process. Support is also provided for the contentions of Bednar and
his colleagues (Bednar & Lawlis, 1971; Bednar et al., 1974) that
group cohesion is an important factor in group formats.

The results of the present study are made more impressive by
the fact that a discrete, unambiguous criterion of outcome was
used, cigarette smoking. Previous research has been criticized
(Bednar & Lawlis, 1971) for using vague or poorly conceptualized
outcome measures and for using (often poorly designed) self-report
measures of both outcome and cohesion, resulting in an increase in
common method variance. The present study employed several measures
tapping different domains of cohesion and a clear measure of outcome.
Even more important, cohesion was shown to have an influence on a
clinically significant, largely refractory behavior. Cigarette smoking
is an extremely difficult behavior to change, which makes the
demonstration of a positive effect of cohesion even more dramatic. Further, the present study was not an analogue, but an investigation with direct clinical significance.

The results of the present investigation appear to merit further study. Replication might first be indicated in light of the discrepant results of the UC-S group. Exact replication would increase the probability that the results are valid. Secondly, there were only a limited number of therapists (two) and groups (eight) in the present study. Replication using different therapists and a larger number of groups would enhance the validity and generality of the results. Third, replication is called for in light of the variability noted in previous outcome studies of smoking treatment (Lando, 1980). Reliability of outcome must be attained to warrant application of the procedures used. Related to this is the need for long-term follow-up mentioned previously.

Replication and generalization could also be achieved by using the same experimental design with different smoking treatments. Reviewers have concluded that the effectiveness of rapid smoking is dependent upon the presence or absence of relationship or positive social variables (Lando, 1981; Pechacek, 1979), but this has not been empirically established. The influence of therapeutic relationship variables in multicomponent programs and programs with more structured maintenance packages could also be investigated.

Third, and more generally, the influence of group cohesion could
be investigated in other structured, behavioral programs. Behavioral group programs for weight loss, assertion, depression, social skills training, phobias, stress and anxiety, etc., could be investigated using experimental designs similar to the present to assess the influence of therapeutic relationship variables.

With respect to cohesion, different methods of increasing a group's level of cohesion could be tested. These could include different self-disclosure or feedback exercises, exercises involving physical movement or contact, live versus taped models, reinforcement of verbal behavior, contracts focusing on different behaviors, or varying levels of structure, therapist-client similarity, therapist-client attraction, etc. The natural cohesion level of groups could also be assessed and investigated with regard to outcome.

It is not possible to clearly determine from the present investigation the precise basis for the impact of cohesion. Several hypotheses may be advanced, however. First of all, it is possible that the members of these structured cohesion groups worked harder to influence fellow members to adhere to the treatment program and not to smoke; that their interpersonal processes were directed at task-oriented personal influence, as has been previously demonstrated for psychotherapy groups (Goldstein et al., 1966). This contention is supported by the HIM data and by previous investigations (Goldstein et al., 1966) of the nature of group interaction. To fully test this hypothesis would require either a more fine-grained analysis of the verbal behavior
of group members, possibly using the entire 20 cells of the HIM, or a behavioral rating system for verbal behavior of group members.

Related to the first hypothesis, it may be that there was significant pressure to conform to group norms (not to smoke) in the structured cohesive groups. This has been shown to be the case in unstructured therapy groups (Bednar & Lawlis, 1971; Goldstein et al., 1966), but has not been tested in structured, behavioral group settings. Again, it may be possible to test this using a more complete verbal assessment procedure or by a self-report measure assessing group members' perceptions of pressure to conform to formal or informal rules or norms of the group.

Third, it may be that members of cohesive groups became more committed to the goals of the group. Again, previous research supports this hypothesis (Goldstein et al., 1966), but testing would require delineating and assessing self-report or behavioral indices of commitment. To the author's knowledge, no such measures have been developed, although a self-report questionnaire could be constructed.

Fourth, it may be that members of cohesive groups contacted each other and offered support outside of the group meetings. This support may be an additive to or interacted with ingroup behavior to increase treatment efficacy. To test this it would be necessary to assess type and degree of extragroup contact.

As noted, all of the above hypotheses have been supported in previous research with unstructured psychotherapy groups (Bednar &
Lawlis, 1971; Goldstein et al., 1966). Level of influence and influenceability, verbal and behavioral participation, salience and valuing of group norms are all greater for cohesive groups. However, the effect of these variables in structured, behavioral groups needs to be demonstrated empirically.

A fifth and final hypothesis may be that cohesion interacts with specific treatments to somehow increase treatment efficacy. There was no direct support for this hypothesis in the present study. Both smoking treatments, satiation and nicotine fading, were more effective when combined with the structured cohesion package. To test this hypothesis in further work it might be possible to combine different types of cohesion interventions with different smoking treatment packages. Several authors suggest that the effects of interpersonal relationship variables are enhanced by the use of structured treatment approaches (Alexander et al., 1976; Ford, 1978). The suggestion is made that there is an interaction between level or degree of relationship and type or degree of structured (behavioral) treatment. Certainly there is some evidence that structuring is one of the most important factors having a positive impact on group interaction (Bednar et al., 1974). It may be that the structure formalizes some interaction patterns, thus reducing anxiety and legitimizing group interaction. Overall, then, there may be some sort of interaction between structure and perceived cohesion. There is, however, some concern about over-structuring in behavioral treatments (Lando, 1981; Domke, Lando, &

Additional investigations might assess different forms and degrees of structured smoking treatments as well as other behavioral group programs along with various means of inducing or increasing cohesion. The considerations regarding replication mentioned earlier are also applicable here. It may also be useful to attempt to increase and assess the impact of cohesion in an unstructured treatment group. The impact of cohesion could thus be assessed independently of structure and may provide some indication of the effects of cohesion in isolation.

Methods of Increasing Cohesion

The present study supports previous research concerning methods of increasing group cohesion. Consistent with previous research, a combination of contracting on self-disclosure (Kirshner et al., 1978; Ribner; 1974), feedback (Jacobs et al., 1973; Rose & Bednar, 1980), behavioral practice (Evensen & Bednar, 1978), and modeling (Liberman, 1970) were found to increase perceived group cohesion. Because these variables were used in combination, no statements can be made concerning which specific variables or subgroup of variables effectively increased the level of cohesion. To determine this would necessitate a component analysis applying each intervention separately and in various permutations.

Four of the cohesion assessment measures (the CIDS, HIM, Cohesion
Questionnaire, and the number of absences) showed significant between-groups differences. These results indicated greater cohesion for the structured cohesion groups.

Presumably this higher level of cohesion is the result of the structured cohesion interventions mentioned earlier. Specific skills were taught that enabled those subjects exposed to them to engage in more cohesive behavior with fellow group members, resulting in higher perceived levels of cohesion for the group as a whole. It should be noted, however, that within-groups analysis of the CIDS data revealed that the structured cohesion groups maintained the comfort levels indicated on first administration while the unstructured groups declined from first to second administration. At least on the level of interpersonal comfort the cohesion interventions only appeared to maintain cohesion levels attained during the smoking treatment phase. Without these interventions, level of comfort decreases. These findings are interesting and deserve further study.

Assessment of Cohesion

Two dependent measures were being applied to test their applicability to the structured group format, the GAS and the RI. The results revealed that these measures showed virtually no within-group changes and no significant between-group differences. These results could imply that level of cohesion was unchanged both within- and between-groups, but the strong and consistent results obtained with the other cohesion assessment variables argue against this explanation.
A second possibility is that these instruments were improperly applied to structured, behaviorally oriented groups. Previously, these measures had been developed, validated, and employed only with unstructured psychotherapy groups (Barret-Lennard, Note 2; Silbergeld et al., 1975, 1977). Their item content centers on items assessing issues important to change and climate in personal psychotherapy and topics not discussed in structured, circumscribed behavioral groups (i.e. sexual issues, emotional reactivity, and responsiveness). Most of the subjects reacted negatively to the item content and were reluctant to complete the questionnaires. Almost all of the subjects expressed the opinion that the instruments were inappropriate for use in groups of the present nature.

The CIDS data showed significant between-groups differences following treatment, but this was due to a significant decrease in interpersonal comfort for the unstructured groups while the structured groups maintained their initial comfort levels. Several factors may account for this finding. First, as noted below, the unstructured cohesion groups had a significantly higher number of absences than the structured cohesion groups. Generally, these absences tended to occur more in the maintenance period. It is possible that the unstructured cohesion groups became less comfortable with their fellow members due to decreased contact. Secondly, the structured cohesion groups may have learned the behaviors necessary to maintain good group interaction. The unstructured cohesion groups may not have learned or used the
behaviors needed to maintain cohesion. This hypothesis is supported by the HIM data.

**Effectiveness of Smoking Treatment**

Overall, both smoking treatments employed in the present study, satiation and nicotine fading, were effective in eliminating or reducing smoking and there were minimal differences between them. In general, fairly high abstinence rates and percentage reduction rates were obtained initially and across the follow-up period. The only exception to this is the UC-S group which had a 12.5% abstinence rate and a 26% reduction rate at the 3-month follow-up. These results are discrepant not only from the other groups in the present investigation, but also from previous research (Lando, 1976a, 1977, 1980), indicating that a multicomponent satiation program can be highly effective in reducing and eliminating smoking behavior. Analysis of the follow-up data for a possible explanation indicates that during months 1 and 2, 62.5% (10 of 16) of the subjects in the UC-S group experienced a significant stressor in their lives (i.e. loss of job, major illness, loss of a significant other). Analyses of relapse episodes indicates that people are very likely to return to smoking following a significant stressor (Marlatt, 1980). None of the other groups experienced a comparable number of stressors.

In general, the smoking treatments employed in the present study, satiation and nicotine fading, did not differentially affect smoking outcomes, either abstinence or percentage reduction. Overall, the
smoking treatment factor was nonsignificant. At month 3, nicotine fading seemed better, but this may be due to the aberrant results for the UC-S group. These results are consistent with previous research indicating that there may be no significant difference in effectiveness between satiation and nicotine fading (Lando, Etringer, McCormack, & Gregory, Note 8).

Satiation has been shown to be an effective smoking treatment in a number of investigations (Lando, 1977, 1981). As an aversive procedure, however, its applicability is limited to subjects without past or current health concerns. Thus, a number of smokers desiring to quit cannot make use of the most established treatment program. Nicotine fading, as a nonaversive procedure, appears to be a safe and viable treatment program for virtually all smokers. If it can be shown to be as effective as satiation, then a less intensive and less stressful and probably more acceptable alternative would be available as an option to virtually all smokers desiring to quit.

In the present study nicotine fading, when implemented in a group atmosphere characterized by a high level of cohesion, was at least as effective as satiation in eliminating or reducing smoking. Although nicotine fading was fairly effective even in the unstructured cohesion condition, a high level of cohesion increased its effectiveness even more. If these results can be replicated, an effective nonaversive smoking treatment could be made available, virtually without restriction to smokers desiring formal interventions. This has several clinical
implications. First, even if those who undergo a nicotine fading treatment are not totally abstinent, they may reduce the risk of various diseases by continuing to smoke lower tar and nicotine cigarettes. Foxx and Brown (1979) found that, in general, subjects did continue to smoke such cigarettes if they returned to smoking following treatment. Secondly, nicotine fading may be more amenable to self-administration than other programs. Thus, an effective treatment option could be made available to those who do not wish to participate in group formats.

In general, there were no consistent interactions between smoking treatment and cohesion treatment. There was, however, a significant interaction between these factors on number of absences. The SC-F group had the best attendance record and the UC-F group the worst. It is possible that without a high level of cohesion, members of nicotine fading groups, having engaged in essentially unstructured interaction throughout treatment, feel less of a need or desire to continue meeting. A high level of cohesion, on the other hand, may draw more people to meetings even without specific agendas.

As noted in the within-group analyses, all groups evidenced significant increases in smoking over the follow-up period. These results are similar to results of a number of previous investigations indicating a high degree of relapse over various follow-up periods (Pechacek, 1979; Schwartz & Rider, 1977). Members of structured cohesion groups relapsed at a slower rate than members of unstructured cohesion groups, however. As noted earlier, the effects of cohesion
on both abstinence and percentage reduction were still evident at a 3-month follow-up. It is possible that one function of a high level of cohesion is to delay relapse.

Despite the positive influence of cohesion, substantial relapse occurred in all conditions. It is possible that the present relapse rates may be due to the insufficient focus of the present investigation on relapse prevention (Marlatt, 1980) or coping skills (i.e. self-instructional training, problem solving, thought stopping) to aid subjects in resisting various temptations to smoke. Although a series of maintenance meetings were included in the treatment package, the focus in the meetings was generally on unstructured group interaction, exhortations to remain abstinent and suggestions for dealing with problems rather than active teaching of coping skills to prevent relapse episodes. A planful, anticipatory approach was not fully integrated into treatment. Such an approach may have enabled subjects to more effectively learn the behaviors necessary to maintain abstinence. To test this hypothesis, it would be necessary to compare relapse prevention (Marlatt, 1980) and/or coping skills programs to the present less structured intervention.

To summarize, the present study supports the hypothesis that a therapeutic relationship variable, group cohesion, can affect outcome in a structured behavioral group program. This is the first empirical study to demonstrate such a causal relationship. In two behavioral treatments of smoking, satiation and nicotine fading, group cohesion
affected both abstinence and percentage reduction in smoking over a 3-month follow-up period. Further, group cohesion accounted for significant amounts of variance in predicting both abstinence and percentage reduction. The combination of contracting, modeling, and behavioral practice of self-disclosure and feedback was found to significantly increase level of cohesion as assessed by behavioral, self-report, and sociometric indices.

Future researchers could concentrate their efforts in several areas. Conceptually, both therapeutic relationships and group cohesion need definitional refinement and further construct validation. Vague definitions and lack of coherent and consistent constructs have hindered research and theorizing to date. The concepts of Kiesler and his colleagues (Kiesler et al., Note 1) regarding relationships as reciprocally interactive networks of behavioral and emotional engagements might provide a good starting point. Secondly, future research could concentrate more fully upon investigating the influence of relationship variables in individual and group psychotherapy as well as behavior therapy, using more objective measures than have been applied in previous work. There is a pressing need in all areas to determine which factors (and in what combination) affect both process and outcome in therapeutic interventions. Far more attention is now being paid to those components that appear to be common to all therapies (Frank, 1982; Wachtel, 1977). Therapeutic relationships would seem to be one of the most important common factors upon which research should now focus.
REFERENCE NOTES


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I would like to thank Dr. Harry Lando, my chairperson, and the rest of my committee members, Dr. Paul Muchinsky, Dr. Fred Borgen, Dr. David Edwards, and Dr. Phyllis Miller, for their support and knowledge which made this project something to be proud of and helped me become a better professional. I would like to thank my friends in Salt Lake City who helped me see this project to fruition and taught me what relationships were all about. Finally, and most especially, I would like to thank Vickie Gregory, my collaborator and very dear friend, without whom this dissertation would not have been possible.
APPENDIX A

LETTER TO EMPLOYERS
Dear Employer:

Would you please announce to your employees our Stop-Smoking Clinics which will begin (date) at the University of Utah Counseling Center. These clinics are supported by a federal grant and are offered as a public service to interested individuals. Costs to participants include a nominal $10 fee and a deposit of $10 which is refunded following the conclusion of the program.

The clinics are based on over 10 years of clinical research and are among the most effective ever offered. It might be noted that our abstinence rates have been as high as 75% 6 months following the quit date. They in no sense represent a "magic cure", however.

The programs are comprehensive and include everything that can be found in commercial programs costing several hundred dollars. They are federally supported and are intended primarily as a public service.

Any of your employees who are interested should come to the orientation session (date). The session will be held in classroom 2214 at the Counseling Center in the Annex Building, Wing B. The session will begin at (time) and last approximately 1 hour. The entire program itself will last about 9 weeks, including a maintenance program. Sessions will generally be held in the evenings and a choice of meeting times will be available. During the program all participants will undergo one week of intensive treatment during which they will be asked to attend sessions every weeknight. Most sessions will last approximately 1 hour.

We would appreciate anything you can do to call the clinic to the attention of your employees. All cigarette smokers who would sincerely like to quit are invited to the orientation session.
An additional series of clinics will begin (date). If you have any questions or would like further information about the program, please call 581-6826.

Sincerely,

Bruce D. Etringer, M.S.

For: Dr. Harry A. Lando
Associate Professor of Psychology
APPENDIX B
INFORMED CONSENT FORM
INFORMED CONSENT FORM

Please read the following material carefully. It contains a general description of the research project and procedures, as well as a description of any potential discomforts, risks, and benefits that may be involved. Please feel free to ask any questions about the material contained here. Your participation in this project is entirely voluntary and you may withdraw at any time without any penalty.

The purpose of this project is twofold. The primary aim is to aid you in eliminating your smoking. To this end, you will be assigned to one of two treatment programs to be described below. These programs are among the most effective to be developed to date. Secondly, this is a research project aimed at developing the most effective smoking treatment possible. The reason for using two different treatments is to compare the relative effectiveness of the two most successful programs. These treatments will now be briefly described.

The first treatment is called intensive smoking and involves increasing your rate of smoking for a 1-week period. This procedure is aimed at helping you stop smoking by making the act of smoking and associated cues unpleasant. This procedure will involve some discomfort and possibly a degree of risk.

Discomfort. The procedure may cause you some discomfort and this in fact can be very helpful in making the treatment work. Different people react in different ways. If you are asked to increase your number of cigarettes, you will be expected to try to double your normal smoking rate for a period of 1 week. You will follow this procedure during the laboratory sessions and on your own outside of the lab. Irritation of the throat, chest, tongue, and eyes may occur. However, you are to discontinue smoking immediately in the event that you find yourself becoming nauseous.

Risk. Greatly increased smoking will greatly increase your intake of nicotine. The effect of this may be an increase in heart rate. This could conceivably be dangerous for persons with heart disease. This is why we asked you a number of questions about your medical condition, as well as asking all of you to obtain your physician's consent. If you do have known heart or vascular disease, then the intensive smoking procedures are not appropriate for you.
The second treatment is called nicotine fading, and involves gradually decreasing the nicotine content of the cigarettes you smoke. You will be asked to decrease the nicotine by successively switching to lower tar and nicotine cigarettes. In this fashion the nicotine in your system will be gradually reduced as will your physical dependence on it. The aim is to make total abstinence easier by reducing the degree of physical addiction. There may be some discomfort involved in switching brands. The reduced nicotine intake may result in some temporary physical changes (e.g., change in heart rate, lung capacity, gastro-intestinal discomfort). Some participants in past programs have also tended to increase the number of cigarettes smoked in order to compensate for the reduction in nicotine intake per cigarette. This may result in the same risk factors outlined for the intensive smoking procedure. For these reasons, we ask that participants in the treatment also have the physician's consent from signed.

You will be assigned to the treatment conditions on a random basis, unless a particular procedure is ruled out by your physician. We believe, and research has documented, that the degree of discomfort or risk involved in either procedure is quite small and is far outweighed by the benefits of quitting. Far greater risk is involved in continuing to smoke than in participating in either procedure.

Because of the research nature of this program, we will ask you to fill out forms asking for demographic information and to keep records of the number of cigarettes smoked. We will be asking for your names and addresses in order to organize the data collection and to facilitate mailing follow-up questionnaires. This information will be kept strictly confidential and only the group leaders will have access to it. We will also be audiotaping some sessions on a random basis. The tapes will be used to analyze group interaction as a whole and no names will be associated with the tapes. By signing the informed consent form we are also asking your permission to tape those sessions designated by the leaders. This permission can be withdrawn at any time. Following collection and analysis of all data, the written records will be destroyed and the tapes erased.

INFORMED CONSENT AGREEMENT

I have read the description of the smoking program and have had the opportunity to ask questions of the leaders. I have read the statements concerning the possible risks and discomfort involved. I also give permission for the leaders to audiotape sessions. I hereby
agree to participate and to cooperate in returning information on my smoking.

Date

Signature

Witness
APPENDIX C
MEDICAL CONSENT FORM
MEDICAL CONSENT FORM

Dear Doctor:

_________________________ has volunteered to participate in a research project aimed at comparing different methods of controlling the smoking habit. Based on our previous research, we think there is a very good chance that the project will help him/her to stop smoking. Some of the procedures to be used, however, may involve a degree of risk and it is in this regard that we have asked him/her to check with you and secure your approval.

One part of the treatment program will be an aversive procedure we call "excessive" smoking. The smoker is asked to greatly increase his/her cigarette consumption. They will be expected to smoke at least twice their usual number of cigarettes for a period of 1 week. They will also smoke continuously for 25 minutes during each of six laboratory sessions. However, smokers will be cautioned that they should at no time smoke to the point of dizziness or nausea. In the event of such symptoms, they should immediately extinguish their cigarette.

We have found this procedure to be effective as part of a long-term program which is also oriented toward the maintenance of nonsmoking. By itself it is not sufficient. The purpose of excessive smoking is to increase the unpleasantness of the act of smoking itself and to increase the smoker's determination to quit. By setting a specific target date for quitting at the end of the week of excessive smoking, and then by immediately introducing a comprehensive maintenance procedure, the long-term prospects for abstinence are significantly increased.

Results of these methods have included abstinence rates as high as 76% at 6-month follow-up. We and other researchers have used this procedure on many hundreds of persons without any known ill effects. However, the procedure does lead to considerable nicotine intake which will stress the cardiovascular system. Therefore, we wish to exclude anyone with a history of heart disease, vascular disease, or bronchitis.

About 90% of the nicotine in tobacco is absorbed into the body when smoking. There is an immediate rise in heartbeats per minute and arterial blood pressure. The production of epinephrine and
norepinephrine is stimulated by nicotine as is the production of free fatty acids. These findings on human subjects are summarized in a chapter entitled "Tobacco and the Cardiovascular System" in The Heart, J. Willis Hurst, M.D. (Ed.), McGraw Hill, 1974. In our own research we have found no more increase in heart rate with excessive smoking than with normal smoking. We did, however, find a significantly greater increment in carboxyhemoglobin levels. There are no reported episodes of excessive smoking producing acute cardiac or vascular symptoms in humans.

We ask that you review your information on your patient, conduct any further examinations you may think necessary, and then indicate whether you think this person has some condition that would contraindicate the use of excessive smoking. If there are medical grounds for this person not undergoing these procedures, our project will still attempt to assist them in stopping their smoking. We are trying to develop alternatives to excessive smoking, but as yet these other methods are relatively untested. Please feel free to contact our project if you have any questions.

Bruce D. Etringer, M.S.
University Counseling Center
University of Utah
Salt Lake City, UT 84112
581-6826, 581-6719

To my knowledge, this patient has no medical contraindication to undergoing excessive smoking as described above.

Date ______________________
Signature ____________________, M.D.
Address _____________________________
APPENDIX D

SMOKING STUDY QUESTIONNAIRE
SMOKING STUDY QUESTIONNAIRE

Dr. Harry A. Lando
Department of Psychology
Iowa State University
Ames, IA 50011

Instructions: Please provide as accurately as you can all the information requested below. Print clearly, please.

1. a. Name ____________________________
   b. Address __________________________
   c. Phone (home) ________________ business ____________

2. a. Age ______ b. Weight ______ c. Height _______

3. Sex: M ______ F ______

4. a. Marital status: Single ______ Married ______
   Divorced ______ Widowed ______
   b. Number of children ______

5. Average number of cigarettes smoked per day ______

6. Kind of cigarettes usually smoked: (Check the boxes)
   a. Brand ____________________________
   b. Filter _____ Nonfilter ______
   c. Menthol _____ Nonmenthol ______
   d. Hard pack _____ Soft pack ______
   e. Length: Regular _____ King _____ 100 mm _____
      120 mm ______

7. Do you sometimes smoke a pipe? Yes _____ No _____
   If yes, how often? ____________________
8. Do you sometimes smoke cigars? Yes _____ No _____

9. How many years have you been smoking? ____________

10. a. How many times have you tried to stop smoking before? ______

   b. If you have tried before, what was the longest period of time that you were able to go without smoking? ____________

   c. If you have tried before, why do you think you didn't succeed?

11. Why do you wish to give up smoking?

12. Has your family physician or any other doctor ever advised you to quit smoking? If so, please describe that person's advice.

13. Please describe any pressure or requests that you have had from family, friends, or coworkers to reduce your smoking or to quit altogether.

14. Do you have a current health problem that makes it especially important that you give up cigarettes? If so, what is it?

15. Please identify other individuals in your family who currently smoke.

   If other people in your family do smoke, are they interested in quitting?
16. Among your friends would you say that: almost all of them
   smoke ____ the majority of them smoke ____ about half of
   them smoke ____ some smoke, but not very many ____ almost
   none of them smoke ____

17. Among your coworkers would you say that: almost all of them
   smoke ____ the majority of them smoke ____ about half of
   them smoke ____ some smoke, but not very many ____ almost
   none of them smoke ____ not applicable ____

18. Do you drink coffee, tea, or cola? If so, approximately how
   many cups or glasses of each are you likely to average per day?

19. Do you drink alcoholic beverages? If so, in a typical week how
   much are you likely to drink?
   Beer  ________________________________
   Wine ________________________________
   Hard liquor __________________________

20. Do you exercise on a regular basis? If so, please describe the
    activity and how often you are likely to engage in that activity
    in a typical week.

21. Approximately how many pounds over (or under) your ideal weight
    are you in your opinion? _______
    How much of a problem do you think weight gain is likely to be
    for you once you quit?
    a. a very serious problem _______
    b. a problem, but not too serious _______
    c. only a small problem _______
    d. no problem at all _______
22. Have you ever participated before in a special project or formal treatment designed to help you stop smoking? Please explain.

23. Describe any withdrawal symptoms that you experienced in previous attempts to quit and indicate how long these symptoms lasted.

24. How did you learn of this stop smoking clinic?
   a. Friend or family member ____  b. At work ____
   c. Radio ____  d. Poster ____  e. Newspaper ____
   f. Television ____  g. Doctor ____  h. Other ____

25. We plan to conduct long-term follow-ups on everyone who completes our program. Please list the names and telephone numbers of 3 people who you know very well. We would like to be able to contact these people to check on your smoking, especially if you should leave the area.

   1. ______________________________________________________
   2. ______________________________________________________
   3. ______________________________________________________

26. Have you suffered from any lung disorder, heart disorder, or any other chronic illness? If yes, please give details.

27. Are you currently taking medications (pills, injections, etc.)? If yes, give details.
28. Have you had a recent physical examination and/or chest X-ray? If yes, by whom and for what reasons?

29. Have you been hospitalized in the past 5 years? If yes, where and why?

30. Do you know of any other information that we should consider in assigning you to a particular stop smoking treatment?

Date: _______________________

Signature: ____________________
APPENDIX E
FEDERAL TRADE COMMISSION
NICOTINE CONTENT REPORT
<table>
<thead>
<tr>
<th>BRAND</th>
<th>TYPE</th>
<th>NICOTINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlton</td>
<td>king size, hardpack</td>
<td>0.05</td>
</tr>
<tr>
<td>Benson &amp; Hedges</td>
<td>reg. size, hardpack</td>
<td>0.1</td>
</tr>
<tr>
<td>Carlton</td>
<td>king size, menthol</td>
<td>0.1</td>
</tr>
<tr>
<td>Carlton</td>
<td>king size</td>
<td>0.1</td>
</tr>
<tr>
<td>Tareyton Ultra Low-Tar</td>
<td>king size, menthol</td>
<td>0.2</td>
</tr>
<tr>
<td>Now</td>
<td>king size, menthol, hardpack</td>
<td>0.2</td>
</tr>
<tr>
<td>Now</td>
<td>king size</td>
<td>0.2</td>
</tr>
<tr>
<td>Now</td>
<td>king size, menthol</td>
<td>0.2</td>
</tr>
<tr>
<td>Now</td>
<td>king size, hardpack</td>
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</tr>
<tr>
<td>Triumph</td>
<td>king size, menthol</td>
<td>0.3</td>
</tr>
<tr>
<td>Iceberg 100's</td>
<td>100 mm., menthol</td>
<td>0.3</td>
</tr>
<tr>
<td>Lucky 100's</td>
<td>100 mm.,</td>
<td>0.3</td>
</tr>
<tr>
<td>Kent III</td>
<td>king size</td>
<td>0.3</td>
</tr>
<tr>
<td>Decade</td>
<td>king size, menthol</td>
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</tr>
<tr>
<td>Decade</td>
<td>king size</td>
<td>0.4</td>
</tr>
<tr>
<td>True</td>
<td>king size, menthol</td>
<td>0.4</td>
</tr>
<tr>
<td>True</td>
<td>king size</td>
<td>0.4</td>
</tr>
<tr>
<td>Triumph</td>
<td>king size</td>
<td>0.4</td>
</tr>
<tr>
<td>Carlton 100's</td>
<td>100 mm., menthol</td>
<td>0.4</td>
</tr>
<tr>
<td>Doral II</td>
<td>king size, menthol</td>
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</tr>
<tr>
<td>Carlton 100's</td>
<td>100 mm.</td>
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</tr>
<tr>
<td>Doral II</td>
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</tr>
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<td>Pall Mall Extra Light</td>
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<td>0.6</td>
</tr>
<tr>
<td>Lark Lights</td>
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</tr>
<tr>
<td>Merit</td>
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</tr>
<tr>
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<td>0.6</td>
</tr>
<tr>
<td>Tempo</td>
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</tr>
<tr>
<td>Merit</td>
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</tr>
<tr>
<td>L &amp; M Lights</td>
<td>king size</td>
<td>0.6</td>
</tr>
<tr>
<td>Tareyton Lights</td>
<td>king size</td>
<td>0.6</td>
</tr>
<tr>
<td>L &amp; M Lights</td>
<td>100 mm.</td>
<td>0.6</td>
</tr>
<tr>
<td>American Lights</td>
<td>120 mm.</td>
<td>0.6</td>
</tr>
<tr>
<td>Lucky Ten</td>
<td>king size</td>
<td>0.7</td>
</tr>
<tr>
<td>Belair</td>
<td>100 mm., menthol</td>
<td>0.7</td>
</tr>
<tr>
<td>Parliament Lights</td>
<td>king size</td>
<td>0.7</td>
</tr>
<tr>
<td>Kooi Super Lights</td>
<td>100 mm., menthol</td>
<td>0.7</td>
</tr>
<tr>
<td>Parliament Lights</td>
<td>king size, hardpack</td>
<td>0.7</td>
</tr>
<tr>
<td>Tareyton Long Lights</td>
<td>100 mm., filter</td>
<td>0.7</td>
</tr>
</tbody>
</table>

1 All cigarettes are filter unless otherwise specified.

2 Nicotine is measured by milligrams per cigarette.
<table>
<thead>
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<th>TYPE</th>
<th>NICOTINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic Lights</td>
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<td>0.7</td>
</tr>
<tr>
<td>Kent Golden Lights</td>
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<td>0.7</td>
</tr>
<tr>
<td>Kool Super Lights</td>
<td>king size, menthol</td>
<td>0.7</td>
</tr>
<tr>
<td>Real</td>
<td>king size, menthol</td>
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</tr>
<tr>
<td>Merit 100's</td>
<td>100 mm.</td>
<td>0.7</td>
</tr>
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<td>Kent Golden Lights</td>
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<td>0.7</td>
</tr>
<tr>
<td>Viceroy Rich Lights</td>
<td>king size</td>
<td>0.7</td>
</tr>
<tr>
<td>Benson &amp; Hedges Lights</td>
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APPENDIX F

PHYSIOLOGICAL INFORMATION
PHYSIOLOGICAL INFORMATION

Statistics

This information is not intended as a scare tactic. All of you realize that smoking is harmful to your health. What I want to do now is to give you some more information. Cigarette smoking is the leading preventable cause of death. Recent epidemiological and biomedical research has indisputably demonstrated that smoking is a significant causal factor in numerous serious diseases, including lung cancer, coronary heart disease, emphysema, chronic bronchitis, ulcers, and various other cancers. Investigators estimate that more than 37 million Americans will die prematurely as a result of smoking. The annual mortality rates directly associated to smoking are staggering, with: 80,000 deaths resulting from lung cancer; 22,000 deaths from other cancers; 19,000 deaths from chronic pulmonary disease; and perhaps 225,000 deaths from cardiovascular disease. Cigarette smoking by pregnant women, when compared to pregnant babies with lower birth weights; and infants with higher late fetal and neonatal death rates.

Physiological Effects

Nicotine is a naturally occurring substance found in tobacco. Within seven seconds after inhaling nicotine, it affects the brain. At the neural level, it has a biphasic effect. Specifically, it initially stimulates neural transmission and then has a depressant effect as it builds up and blocks neural transmission. Although some experimentation has been done testing the usefulness of applying nicotine externally to bruises, its therapeutic usefulness has not been established. In fact, it is used in insecticides.

The average cigarette contains about 2% nicotine. Cigars have 10 times this amount. The effects of cigarettes on individuals is unpredictable. This is due partially to the isolation of more than 500 compounds from cigarette smoke. Secondly, tolerance develops to the effects of nicotine the longer one smokes.

When one smokes, 10% of the nicotine from the cigarette is inhaled. Of this, 90% is absorbed into the blood stream. The carcinogenic effects of smoking are probably not due to nicotine, but to the other compounds in the cigarette. When you smoke: your heart rate increases, vaso-constriction of the blood vessels occurs (i.e. people experience cold hands and possible numbness in their extremities), blood pressure increases, cardiac output increases, skin temperature decreases, and skeletal muscle tone decreases (e.g. people who smoke wrinkle earlier and faster), alpha waves decrease, stomach contractions are inhibited, digestive processes slow down, the sensitivity of taste buds are decreased, and there is an increase in saliva.
The tars and carbon monoxide from cigarettes contribute to health problems. Shortness of breath is due to the inhalation of carbon monoxide while smoking. The carbon monoxide combines with the hemoglobin in the red blood cells to form carboxyhemoglobin. Basically, this decreases the ability of the blood to carry oxygen. All tobacco smoke contains carbon monoxide.

When a person quits smoking: the metabolic rate decreases, the heart rate decreases by about three beats per minute, there is a 10% reduction in oxygen consumption, blood pressure drops, and REM sleep increases. Possible withdrawal symptoms include: craving, irritability, restlessness, feelings of dullness, sleep disturbances ranging from drowsiness to insomnia, gastro-intestinal disturbances, anxiety, headache, and impairment of concentration, judgment, and psycho-motor performance. Not all people experience withdrawal symptoms but it is important to know what they are. They can start from a few hours to a few days after quitting smoking and can last for a few days to a month. Few people that I have seen in these clinics experience these for a month.

The important thing to remember about stopping smoking is that your health begins to improve immediately. Unless you have damaged your lungs to the point of developing emphysema, they will begin to return to their healthy state. When you smoke, the cilia in the lungs is paralyzed. The function of the cilia is to cleanse the lungs through a sweeping action. So when you stop, you may begin to cough up tenacious sputa which has accumulated in your lungs. This is a sign that the cilia are working again and your lungs are cleansing themselves. People who stop smoking notice things such as, food tasting better, more ability to walk fast, etc.

Any questions?
APPENDIX G

IMPORTANT SUGGESTIONS
IMPORTANT SUGGESTIONS

1. Throw away all of your cigarettes. Do not leave them around to tempt you.

2. Use gum or lifesavers (or anything else you can think of) as substitutes. For calorie watchers, munch on celery or some other low calorie food. Drink liquids. Keep your mouth occupied without resorting to cigarettes.

3. Engage in moderate exercise. Fight the urge to smoke by taking a walk (leaving cigarettes behind). Do some gardening, play golf, swim, etc. If you resist that urge, it will pass. In situations where it is impractical for you to go outside and exercise (such as at work), immerse yourself in what you are doing. This will help you to keep your mind off cigarettes.

4. Take a few deep breaths. It is amazing how refreshing it can be in the absence of cigarette smoke. You can heighten the sensation of freshness by brushing your teeth, gargling with mouthwash, or consuming a mint.

5. Remember the positive aspects of nonsmoking. Notice how much more energy you seem to have, how much better your food tastes, and how much better and more healthy you feel.

6. Think back to the week of treatment and remind yourself of the distinct lack of pleasure that you derived from smoking. People often find that this suggestion is particularly helpful.

7. Remember your reasons for participating in treatment, as well as all of the effort you have made to break your smoking habit. Ask yourself if any cigarette can really be worth the risk of jeopardizing your goals.

8. Be good to yourself. Think about the satisfaction that comes from mastering the urge to smoke. Put aside the money that you would have spent on cigarettes. Do this each day. You will be surprised at how quickly it will add up! Use this money to buy yourself something that you really want (preferably something that you would not otherwise get).

9. Enlist the encouragement of your family and friends.

10. Avoid situations where possible in which you would be particularly tempted to smoke, at least for the first two weeks after quitting.
For some people this means temporarily giving up coffee or drinking. For situations which you cannot avoid, you might take one of the smoking substitutes suggested above.

11. Use these suggestions as you see fit. People usually find some suggestions to be more helpful than others. Apply these suggestions that best fit your situation. You might, for example, prefer to master situations in which you are tempted to smoke right from the outset. You should be the judge in each case.

12. Try to come up with additional ideas of your own to help you refrain from smoking. Thinking of such ideas can be a useful exercise in itself. Carry this page with you and as ideas occur to you, note them on the back.
APPENDIX H

CONTINGENCY CONTRACT
CONTINGENCY CONTRACT

Agreement

I will refrain from smoking for the following period: ___________


Consequences

If contract is kept: ____________________________

_____________________________

_____________________________

If contract is broken: ____________________________

_____________________________

_____________________________

Today's date ___________ Signed _________________

Review date ___________ Witness _________________
APPENDIX I

SELF-MANAGEMENT CONTRACT
SELF-MANAGEMENT CONTRACT

I promise that for each cigarette I smoke between __________ and __________ I will forfeit the sum of $ _____ to be collected by __________________________ within 48 hours of the time that I smoke. I promise to honestly and accurately report all smoking.

Name ___________________________ Date ___________

Witness ___________________________

______________________________
APPENDIX J

GROUP CONTRACT FOR

SMOKING TREATMENT PARTICIPANTS
GROUP CONTRACT FOR SMOKING TREATMENT PARTICIPANTS

I understand that I will be participating in a group-oriented treatment program to quit smoking. I further understand that as a member of my group, I have an obligation to myself and my fellow group members. These obligations include pledging to myself and all the other members of my group that I will make a firm and free decision to quit smoking on the target date. By signing this contract I agree to such a pledge. Further, I pledge to help the other members of my group quit smoking. I will do this by being an active member of the group, by participating in the various exercises the group will engage in, by supporting and reinforcing other group members in their attempts to quit, and by attending all (or as many as possible) group meetings. I understand that quitting is a group as well as individual project and that the potential for success is greater the more group members aid each other.

As a member of this group, I agree to engage in certain behaviors to aid the group interaction and help others quit. One of these behaviors is self-disclosure. Self-disclosure is defined as revealing how I feel about smoking and quitting smoking while in the group, and sharing my past experiences with smoking and past attempts to quit. I understand that I am disclosing these feelings and experiences because they will help me become more aware of my own patterns of smoking, because it will help others to know me a little better, and because it will help others to quit.

The second behavior I agree to engage in is behavioral feedback. Behavioral feedback is defined as disclosing to other group members how I am reacting to their behavior regarding smoking and how I perceive that their behaviors are helping or hindering their efforts to quit. I agree to make my feedback positive and to follow the following guidelines in giving feedback.

1. Focus feedback on the behavior rather than on the person. For example, "I think taking walks is a good way to get your mind off cigarettes", rather than, "You are smart for taking walks".
2. Focus feedback on observations and descriptions rather than inferences or judgments. For example, "It seems that you always smoke in situations that make you nervous, such as meeting with your boss or going out on a date", rather than "You're a nervous person who needs cigarettes to cope".
3. Focus feedback on behavior in a specific situation, rather than feedback in the abstract. See the above example.
4. Focus feedback on the sharing of ideas and information rather than on giving advice. For example, "Many people, if
their husbands or wives don't want to quit, find it helpful to talk about guidelines for smoking around the house, rather than, "I think you should tell him to quit now".

5. Focus feedback on exploration of alternatives rather than answers or solutions. For example, "If that's a problem, you might try . . .", rather than, "You'd better do . . .".

______________________________________
Signature

______________________________________
Witness

______________________________________
Date
APPENDIX K

GROUP ATMOSPHERE SCALE
GROUP ATMOSPHERE SCALE

Age: _______  Marital status: _______

Sex: _______  Schooling: _______ yrs.

Approximate number of sessions of this group you have attended:

Instructions

There are 130 statements here. They are statements about groups. You are to decide which statements are true of your group and which are not.

True -- Write a T when you think the statement is mostly true of your group.

False -- Write a F when you think the statement is mostly false of your group.

Please be sure to answer every item.
1. Members move around within the group whenever they want to.
2. The therapist spends more time with some members than with others.
3. There is very little emphasis on making plans for after the group is terminated.
4. The therapist doesn't order the members around.
5. It's hard to get members together immediately before or after the group meeting.
6. Most group members follow a regular procedure after arrival for the group meeting.
7. Group members talk very little about their pasts.
8. The situation here is the best I've ever known.
9. Group members put a lot of energy into what they do around here.
10. Group members sometimes play practical jokes on each other.
11. This is a lively group.
12. Group members never know when the therapist will talk to them.
13. Group members can wear what they want.
14. Group members tend to hide their feelings from one another.
15. The stronger members in this group help the less strong ones.
16. This group emphasizes training for new kinds of practical approaches.
17. Once a mode of action is arranged for a group member, the member must follow it.
18. There are some group members who hang around together a lot.
19. Many group members look messy.
20. Group members tell each other about their personal problems.
21. The therapist here never does anything for the group members.
22. A lot of group members just seem to be passing time in the group.
23. It's hard to get people to argue around here.
24. Most group members dress and act pretty much alike.
25. The group members know when the therapist will arrive for the group meeting.
26. There are no majority rules in this group.
27. Group members initiate without being prodded by the therapist.
28. The therapist has very little time to encourage group members.
29. Most group members are more concerned with the past than with the future.
30. The therapist very rarely punishes group members by restricting them from talking.
31. The group has very few social interactions.
32. Individual activities are carefully planned.
33. Group members hardly ever discuss their sexual lives.
34. This is the best group I've ever been a member of.
35. The members are proud of this group.
36. Group members often gripe.
37. New interactional approaches are often tried in this group.
38. Things are sometimes very disorganized around here.
39. The therapist acts on members' suggestions.
40. When the group members disagree with each other, they keep it to themselves.
41. The therapist knows what the group members want.
42. Group members here are expected to work toward goals which increase effectiveness.
43. In this group everyone knows who's in charge.
44. Nearly everyone here has some social interactions before or after group meetings.
45. The group's meeting place is often messy.
46. Personal problems are openly talked about.
47. The therapist here is just terribly stupid.
48. Very few things around here ever get people excited.
49. The therapist never starts arguments in group meetings.
50. The group always stays just about the same.
51. If a group member breaks a rule, he knows what will happen to him.
52. Very few members have any responsibility in this group.
53. Group members say anything they want to the therapist.
54. Group members rarely help each other.
55. There is very little emphasis on making group members more effective.
56. Group members call the therapist by his first name.
57. Therapist spends very little time talking with group members.
58. This is a very well organized group.
59. Group members are rarely asked personal questions by the therapist.
60. I never want to leave this group.
61. Discussions are pretty interesting in this group.
62. Group members often criticize or joke about the therapist.
63. The therapist is always changing his style in the group.
64. People are always changing their minds here.
65. Group members can move about within the group without saying where they are going.

66. It is hard to tell how group members are feeling in this group.

67. Therapist seems interested in following up members once they terminate with the group.

68. Group members are encouraged to plan for the future.

69. Group members who break the group rules are punished for it.

70. Group members often do things together immediately before or after group meeting.

71. The meeting place sometimes gets very messy.

72. Therapist is mainly interested in learning about group members' feelings.

73. The therapist dislikes the members of this group.

74. Nobody ever volunteers around here.

75. Members in this group rarely argue.

76. There is little going on around here most of the time.

77. If a group member is criticized by the therapist, the therapist always tells him why.

78. The therapist rarely gives in to group member pressure.

79. It's OK to act foolish around here.

80. The therapist sometimes doesn't show up for his appointments with the group.

81. There is very little emphasis on what group members will be doing after they leave the group.

82. Group members may interrupt the therapist when he is talking.

83. There is very little sharing among the group members.

84. The therapist makes sure that the meeting room is always neat.
85. The group members rarely talk about their personal problems with other group members.

86. The therapist of this group will break about any rule to help group members.

87. Group members are pretty busy all of the time.

88. In this group the therapist thinks it's a healthy thing to argue.

89. This group is quite different from one session to another.

90. Group members never know when they will be isolated in this group.

91. Group members are expected to take leadership in the group.

92. Group members tend to hide their feelings from the therapist.

93. Each group member is treated differently in this group, depending on his problem.

94. Group members are encouraged to learn new ways of doing things.

95. Group members will be dropped from the group if they don't obey the rules.

96. The therapist helps new members get acquainted in this group.

97. The meeting room is often messy.

98. Group members are expected to share their personal problems with each other.

99. The therapist doesn't really know his job.

100. Group members don't do anything around here unless the therapist asks them to.

101. Members here rarely become angry.

102. Members of this group all have about the same kind of problems.

103. The therapist tells group members when they are doing well.

104. The therapist sometimes does things for a group member that he really could do for himself.
105. Group members are encouraged to show their feelings.

106. Therapist takes very little time to encourage group members.

107. Therapist cares more about how group members feel than about their practical type of problems.

108. Group members are rarely kept waiting when they have appointments with the therapist.

109. It takes a long time for new members to get to know each other in this group.

110. The therapist sets an example for neatness and orderliness.

111. It's not safe for group members to discuss their personal problems around here.

112. This is the most interesting group I could possibly imagine.

113. Group members here really try to improve.

114. The therapist sometimes argues.

115. The group interaction is always changing.

116. The therapist doesn't explain what group therapy is about to group members.

117. Group members are encouraged to be independent.

118. Group members are careful about what they say when the therapist is around.

119. The therapist goes out of his way to help group members.

120. Group members must make plans before the group terminates.

121. It's a good idea to let the therapist know that he is boss.

122. Members of this group are concerned about each other.

123. The group meeting place usually looks a little messy.

124. The therapist strongly encourages group members to talk about their pasts.
125. In this group, the therapist never talks to any of the members.

126. There is very little group spirit in this group.

127. If a group member argues with another group member, he will get into trouble with the therapist.

128. Everyone in the group has pretty much the same opinions about group therapy.

129. Group therapy rules are clearly understood by the group members.

130. The therapist discourages criticism.
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For + items marked T and - items marked F, score = 1. For + items marked F and - items marked T, score = 0.
APPENDIX L

RELATIONSHIP INVENTORY
Below are listed a variety of ways that a person may find others behaving or feeling towards him or her.

Please consider each statement with reference to the present relationship between ______________ as a whole, and yourself.

Mark each statement in the left margin, according to how strongly you feel it is true, or not true, in this relationship. Please mark every one. Write in +3, +2, +1, or -1, -2, -3 to stand for the following answers:

+3: Yes, I strongly feel that it is true.
+2: Yes, I feel it is true.
+1: Yes, I feel that it is probably true, or more true than untrue.
-1: No, I feel that it is probably untrue, or more untrue than true.
-2: No, I feel it is not true.
-3: No, I strongly feel that it is not true.
1. They respect me as a person.
2. They want to understand how I see things.
3. Their interest in me depends on the things I say or do.
4. They are comfortable and at ease with me.
5. They feel a true liking for me.
6. They may understand my words but they don't see the way I feel.
7. Whether I am feeling happy or unhappy with myself makes no real difference to the way they feel about me.
8. I feel they put on a role or front with me.
9. They are impatient with me.
10. They nearly always know exactly what I mean.
11. Depending on my behavior, they have a better opinion of me sometimes than they do at other times.
12. I feel that they are real and genuine with me.
13. I feel appreciated by them.
14. They look at what I do from their own point of view.
15. Their feeling toward me does not depend on how I am feeling toward them.
16. It makes them uneasy when I ask or talk about certain things.
17. They are indifferent to me.
18. They usually sense or realize what I am feeling.
19. They want me to be a particular kind of person.
20. I nearly always feel that what they say expresses exactly what they are feeling and thinking at that time.
21. They find me rather dull and uninteresting.
22. Their attitudes toward some of the things I do or say prevent them from understanding me.

23. I can be (or could be) openly critical or appreciative of them without really making them feel any differently about me.

24. They want me to think that they like me or understand me more than they really do.

25. They care for me.

26. Sometimes they think that I feel a certain way, because it's the way they feel.

27. They like certain things about me, and there are other things they do not like.

28. They do not avoid anything that is important for our relationship.

29. I feel that they disapprove of me.

30. They realize what I mean even when I have difficulty in saying it.

31. Their attitude toward me stays the same: they are not pleased with me sometimes and critical or disappointed at other times.

32. Sometimes they are not at all comfortable but we go on, outwardly ignoring it.

33. They just tolerate me.

34. They usually understand the whole of what I mean.

35. If I show that I am angry with them they become hurt or angry with me, too.

36. They express their true impressions and feelings with me.

37. They are friendly and warm with me.

38. They just take no notice of some things that I think or feel.

39. How much they like or dislike me is not altered by anything that I tell them about myself.
40. At times I sense that they are not aware of what they are really feeling.

41. I feel that they really value me.

42. They appreciate exactly how the things I experience feel to me.

43. They approve of some things I do, and plainly disapprove of other things.

44. They are willing to express whatever they actually have in mind with me, including any feelings about themselves or about me.

45. They don't like me for myself.

46. At times they think that I feel a lot more strongly about a particular thing than I really do.

47. Whether I am in good spirits or feeling upset does not make them any more or less appreciative of me.

48. They are openly themselves with me.

49. I seem to irritate and bother them.

50. They do not realize how sensitive I am about some of the things we discuss.

51. Whether the ideas and feelings I express are "good" or "bad" seems to make no difference to the way they feel towards me.

52. There are times when I feel that their outward response to me is quite different from the way they feel underneath.

53. At times they feel contempt for me.

54. They understand me.

55. Sometimes I am more worthwhile in their eyes than I am at other times.

56. I have not felt that they try to hide from themselves anything that they feel with me.
57. They are truly interested in me.

58. Their response to me is usually so fixed and automatic that I don't really get through to them.

59. I don't think that anything I say or do actually changes the way they feel towards me.

60. What they say to me often gives a wrong impression of their whole thought or feeling at the time.

61. They feel deep affection for me.

62. When I am hurt or upset they can recognize my feelings exactly, without becoming upset themselves.

63. What other people think of me does (or would, if they knew) affect the way they feel towards me.

64. I believe that they have feelings they do not tell me about that are causing difficulties between us.
**RELATIONSHIP INVENTORY SCORING SHEET**

Type of relationship (e.g., husband/wife)...........................................
Respondent (e.g., wife, son)........... Referent person(s)............... 

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**Sum (for neg.items)**

| -1 x Sum: Sub-total #2 | 13 |

**Sub-total #1 + #2: Scale Score**

| 23 |
APPENDIX M

COMFORTABLE INTERPERSONAL DISTANCE SCALE
APPENDIX N

GROUP COHESION QUESTIONNAIRE
GROUP COHESION QUESTIONNAIRE

Please rate each of the following statements on a scale of 1 to 7. The rating indicates your opinion about the statement. Please be honest.

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1. I feel the group should have met more often.
2. I dislike my group.
3. If most of the members of your group decided to dissolve the group by leaving, I would like an opportunity to dissuade them.
4. I feel that working with the smoking group has enabled me to quit smoking.
5. If I could have replaced members of my group with other "ideal group members" I would have (exclusive of group leaders). If yes, how many? _____
6. I felt like I was included by the group in the discussions and activities.
7. The length of the meetings should have been shorter.
8. Compared to other therapy groups, I would imagine this group worked well together.
9. The contracts were not useful.
10. The therapists were competent.

Please answer the following questions as honestly and completely as possible. We need your reactions and opinions in order to further improve our procedures.

11. How do you feel about your participation in, and contribution to the group work?
12. How do you feel about the group therapist?

13. Did you employ the techniques/suggestions from the group sessions? Please detail what you used to cope and if this was useful.

14. Any other reactions, suggestions, comments?
APPENDIX O
FOLLOW-UP LETTER
FOLLOW-UP LETTER

It has been approximately months since your target date for quitting smoking. As part of our research, we are conducting long-term follow-ups of everyone in the program. Your response is very important and much appreciated.

Please answer the questions below and return this sheet in the enclosed envelope. Upon receipt of this letter, your $10 deposit will be refunded, if it has not been already. Also, if you have questionnaires, they must also be returned.

1. Are you currently smoking?
2. If so, how many per day?
3. What brand?
4. Would you like information regarding future smoking programs?

Thank you for your response. I hope you are successful.

Sincerely,

Bruce D. Etringer
Vickie R. Gregory